



# 国机标准

## STANDARD

(2019版)





# 国机标准

## STANDARD

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# 中机国际工程设计研究院有限责任公司

China Machinery International Engineering Design & Research Institute Co., Ltd

## 公司名称：中机国际工程设计研究院有限责任公司

Company Name: China Machinery International Engineering Design & Research Institute Co., Ltd

### 公司简介

中机国际工程设计研究院有限责任公司（简称中机国际，英文全称 China Machinery International Engineering Design & Research Institute Co., Ltd，简称 CMIE，原机械工业部第八设计研究院），我国最早组建的国家大型综合性设计单位之一，创建于 1951 年，是集工程咨询、工程设计、工程总承包、项目管理、工程监理、工程勘察、工程施工、专用设备设计与制造、设备成套和工程技术研究于一体的高新技术企业，总部设在长沙，隶属于世界 500 强企业中国机械工业集团有限公司（简称国机集团），是中国机械设备工程股份有限公司（简称 CMEC，香港上市公司）的全资子公司。

### 专业团队

中机国际由综合设计研究院、建筑设计研究院、市政与环保设计研究院、技术研究院、工程公司等板块组成，共有 40 余个生产单元、10 余个研究机构，拥有 30 多个专业类别的专业技术人员 1500 余人，其中有享受政府特殊津贴专家、APEC 建筑师、IPMP 项目管理师、湖南省勘察设计大师、研究员级高级工程师、高级技术人员、各类国家注册师等近 500 人。在北京、南京等地设有分支机构。

### 企业资质

中机国际拥有机械、建筑、市政、军工、冶金、轻纺、风景园林、环境工程等行业甲级设计资质；具有电力、电子通信广电、化工石化医药、农林、商物粮、石油天然气等行业乙级设计资质；具有机械、建筑、电子、有色冶金、火电、生态建设与环境工程、市政公用工程甲级咨询资质；具有城乡规划编制甲级、工程造价咨询甲级和工程监理甲级资质、施工图审查一类资质；具有压力管道 GA、GB、

### Company Profile

Founded in 1951, China Machinery International Engineering Design & Research Institute Co., Ltd, (referred to as CMIE, which is the former 8th Design Institute of Ministry of Machinery Industry), is one of China's first batch of large comprehensive design units, also a high-tech enterprise integrating engineering consulting, engineering design, general project contracting, project management, project supervision, engineering investigation, construction, special equipment design and manufacturing, complete plant supply and engineering research. Headquartered in Changsha, it belongs to one of the Fortune 500 enterprises- China Machinery Industry Group Co., Ltd. (referred to as SINOMACH), and is a wholly owned subsidiary of China Machinery Engineering Co., Ltd. (referred to as CMEC, a Hong Kong listed company).

### Professional Team

CMIE is composed of Comprehensive Design and Research Division, Architectural Design and Research Division, Municipal and Environmental Protection Design Division, Technology Research Division and Engineering Company, etc. It has a total of more than 40 production units, more than 10 research institutes and more than 1,500 professional and technical personnel from over 30 professional categories. There are nearly 500 people including experts who enjoy government special allowance, APEC architects, IPMP project managers, survey and design masters of Hunan Province, senior engineers of professor level, senior technicians and various national registered engineers. CMIE has branch companies in Beijing and Nanjing, etc.

### Qualifications

CMIE has Class A design qualification in the industries of machinery, architecture, municipal engineering, military industry, metallurgy, textile, landscape architecture and environmental engineering, etc.; It has Class B design qualification in electric power, telecommunication, chemical and petrochemical industry, agriculture and forestry, commercial grain, oil and natural gas, etc.; It has Class A consulting qualification in machinery, architecture, electronics, nonferrous metallurgy, thermal power, ecological construction and environmental engineering, municipal public works; It has Class A qualification in urban and rural planning preparation, Class A qualification in

GC、GD 设计资质以及工程勘察、环境影响评价乙级资质；具有进出口企业和对外承包工程经营资格；具有市政公用工程施工总承包一级资质以及建筑装饰工程、机电安装工程、建筑智能化工程、环保工程、送变电工程和园林绿化施工专业承包资质以及检验检测机构计量认证资格。

## 服务领域

中机国际业务包括工业工程、民用建筑工程、市政工程、环保工程、电力工程五大领域，国内、国际两大市场。

工业工程在哈电、东电、上电等一大批传统电工行业国家重点骨干企业中创下了骄人的业绩，在工程机械、交通运输设备、有色冶金、新能源装备、新材料、汽车及零部件等行业硕果累累，形成了新的竞争优势。

民用建筑形成了从规划到设计、风景园林、建筑装饰全业务链服务能力，在医院、学校、酒店、办公、商业、金融、体育、文化、古建、博物馆、居住等十多类民用建筑领域，形成了技术品牌优势。

市政工程在市政给水排水，生活垃圾、餐厨垃圾、医疗垃圾处理，城镇燃气，市政道路桥梁等工程咨询、工程设计及工程勘察、工程测量等方面，技术实力雄厚，业绩丰富。

环保工程在水污染防治、固体废物处理处置、噪声治理、大气污染防治、污染修复等工程设计、工程总承包以及环境影响评价等方面具有技术特色和丰富的经验。

电力工程领域，在光伏发电工程、分布式能源工程、供热工程、输变电工程、燃机电站和柴油机电站等业务方面，通过特色化经营，取得了良好业绩。完成各类电力工程设计 100 多项，并积累了较丰富的国际电力工程设计经验。

国际工程业务通过资源组合和科学管理，探索适应各类业务的国际项目运营模式，业务遍及全球三十多个国家

engineering cost consultation, Class A qualification in engineering supervision, and Class A qualification in construction drawings review; It has design qualification of pressure pipeline GA, GB, GC and GD, and Class B qualification in engineering investigation and environmental impact assessment; it has import and export operation qualification, and implementation qualification of foreign project; it has 1st level qualification of general construction contracting in municipal public works and professional construction qualification in architectural decoration engineering, mechanical and electrical installation, intelligent building engineering, environmental protection engineering, power transmission and transformation and landscaping.

## Service Areas

CMIE Business covers five major industries of industrial engineering, civil building engineering, municipal engineering, environmental protection engineering and power engineering, both in domestic and international markets.

CMIE has made remarkable achievements in industrial engineering, with a large number of clients which are national backbone enterprises in traditional electrician industry, such as Harbin Electric Co., Ltd, Dongfang Electric Corporation and Shanghai Electric Co., Ltd. CMIE makes great contributions and enjoys its competitive advantages in the areas of engineering machinery, transportation equipment, nonferrous metallurgy, new energy equipment, new materials, automobiles and parts, etc.

CMIE delivers a complete service chain in civil building design, from planning and design, to landscape architecture and architectural decoration. It has technology brand advantage in more than ten civil building areas, such as hospitals, schools, hotels, offices, commerce, finance, sports, culture, ancient architecture, museums and residences. CMIE has strong technical strength and makes great performance in engineering consulting, engineering design, engineering investigation and engineering measurement of municipal engineering projects, in the fields of municipal water supply and drainage, domestic waste, food waste, medical waste disposal, urban gas, municipal roads and bridges.

CMIE provides characteristic service and accumulates extensive experience in engineering design, general contracting and environmental impact assessment of environmental protection projects, in the specific areas such as prevention and control of water pollution, treatment and disposal of solid waste, noise control, prevention and control of air pollution and pollution remediation.

Via distinctive operation, CMIE has achieved good results in power engineering projects, such as photovoltaic power generation projects, distributed energy projects, heat supply projects, power transmission and transformation projects, gas turbine power stations and diesel power stations. It has completed more than 100 various types of electrical engineering design and accumulated rich experience in design of international electrical engineering projects.

Through resource combination and scientific management, CMIE explores international project operation mode that adapts to various kinds of international engineering business. Its business covers more than 30 countries and regions in the world, including many

和地区，涵盖了工业制造、能源、交通、石化、市政、房建等多个领域，开拓成效显著。“五大领域、两大市场”的业务发展格局，促进了市场竞争力的显著提升。

## 科技创新

中机国际累计完成近 20000 项工程设计等各类任务，取得 500 余项科研成果，获得国家、部、省级优秀科技成果、优秀设计奖 300 余项，拥有国家专利和专有技术 100 余项，主、Co-editor 国家、地方、行业技术标准和规范 60 余项。

作为湖南省住建厅建设科技技术支撑单位、湖南省新型城镇化建设综合技术研究基地、海绵城市建设集成技术湖南省工程研究中心、湖南省建筑信息模型 (BIM) 技术应用创新战略联盟理事长单位，中机国际以本部研发中心和长沙麓谷工程技术实验中心为基地，以海绵城市、智能制造、综合管廊中心及博士后科研流动站为平台，以云端信息化为手段，铺就了资源整合、全面创新、智能服务的战略布局，创新体系被纳入湖南省政府与国机集团的《十三五战略合作协议》。

## 文化与战略

中机国际以“成为国际一流的科技型工程公司”为发展愿景，定位于国机集团的工程技术研发中心和 CMEC 的技术支撑与服务平台，致力于打造研发、设计、总包“三位一体”的科技型工程公司。

中机国际以“共筑精品工程，促进城市可持续发展”为企业使命，秉承“共建、共创、共赢、共享”的核心价值观，以高素质的专业团队和强大的工程集成能力，竭诚为国内外业主提供工程建设全过程服务。

industries such as industrial manufacturing, energy, transportation, petrochemicals, municipal engineering and housing construction with remarkable pioneering results. The business development pattern of "Five Major Industries and Two Major Markets" has contributed to remarkable enhancement of market competitiveness.

## Scientific and Technological Innovation

CMIE has completed nearly 20,000 engineering design and other tasks, obtained more than 500 scientific research achievements, received outstanding scientific and technological achievements at national, ministerial and provincial levels and been awarded more than 300 outstanding design awards. It owns more than 100 national patents and proprietary technologies, and has been main editor and co-editor of more than 60 technical standards and specifications at national, local, or industry level.

CMIE has been honored as the technical support unit in construction science and technology of Housing and Urban-Rural Development Bureau of Hunan, integrated technology research base of new urbanization construction in Hunan Province, Hunan Engineering Research Center of sponge city construction integration technology, and the director unit of building information model (BIM) technology application innovation strategy alliance of Hunan province. Relying on sponge city, intelligent manufacturing, integrated pipe gallery center and post-doctoral mobile research station as the platform, adapting cloud-based informationization technology, CMIE has completed its strategic layout featured with resource integration, overall innovation, intelligent service based on CMIE R & D center and Changsha Lugu Engineering and Technology Experiment Center. Its innovation system has been incorporated into the "13th Five-Year Strategic Cooperation Agreement" between Hunan Provincial Government and SINOMACH.

## Culture and Strategy

With the vision of "becoming a world-class science and technology engineering company", CMIE positions in engineering technology research and development center of SINOMACH and technical support and service platform of CMEC, and devotes itself to building a technology engineering company integrating R&D, design and general contracting.

With the mission of "Co-building excellent project and promoting sustainable development of the city", CMIE adheres to core values of "building together, innovating together, winning together and sharing together", and provides dedicated project construction services for customers at home and abroad with high-quality professional team and strong engineering integration capability.

## 联系人及联系方式 Contact Person and Information

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## 标准 Standards

### 主持制定或参与的标准



#### 1、《压力表安装图》01R405

压力表安装图适用于液体、气体、蒸汽等介质， $PN \leq 6.3\text{MPa}$ 、 $t \leq 280^\circ\text{C}$  管道上压力测量一次表的安装。

#### 1. Installation Atlas of Pressure Gauge

Scope of Application: Installation drawing of pressure gauge is applicable for the installation of primary pressure gauge in pipeline with  $PN \leq 6.3\text{MPa}$ ,  $t \leq 280^\circ\text{C}$  of liquid, gas, steam and other media.



#### 2、《温度仪表安装图》GJB-556

温度仪表安装图适用于液体、气体蒸汽等介质的温度测量。图集有八种温度仪表在管道、设备上的安装图。

#### 2. Installation Atlas of Temperature Meter

Scope of Application: Installation drawing of temperature meter is applicable for the temperature measurement of liquid, gas, steam and other media. There are eight installation drawings of temperature instruments on pipes and equipment in this Atlas.



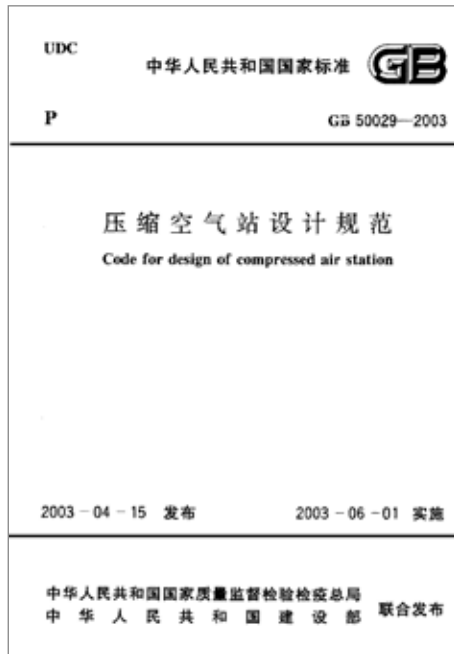
#### 3、《管道穿墙、屋面防水套管》01R409

本图集适用于液体、气体、蒸汽等介质管道在穿墙、屋面处的安装。

#### 3. Pipe through Wall, Roof Waterproof Sleeve

Scope of Application: This Atlas is applicable for the installation of sleeve for liquid, gas, steam and other medium pipes in the wall and roof.





#### 4、《压缩空气站设计规范》GB5009—2003

本图集适用于液体、气体、蒸汽等介质管道在穿墙、屋面处的安装。

#### 4. Code for Design of Compressed Air Station

Scope of Application: This Code is applicable for the installation of sleeve for liquid, gas, steam and other medium pipes in the wall and roof.

流量仪表管路安装图		主编单位负责人 刘健民 主编单位技术负责人 孙建春 技术审定人 周勇 设计负责人 李瑞东	
批准部门 中华人民共和国建设部	批准文号 建质[2003]211号		
主编单位 中机国际工程设计研究院	统一编号 GJB-668		
实行日期 二〇〇三年十二月一日	图 号 03B428		
名 称	页 数	名 称	页 数
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#### 5、《流量仪表管路安装图》GJB-668

本图集适用于供热、供冷、石油、化工生产过程中测量气体、液体和蒸汽的差压流量仪表及所需的管路安装图。

#### 5. Flow Meter Pipeline Installation Atlas

Scope of Application: This Atlas is applicable for installation of differential pressure flow meters and required piping for measuring gas, liquid and steam in heating, cooling, petroleum and chemical production processes.

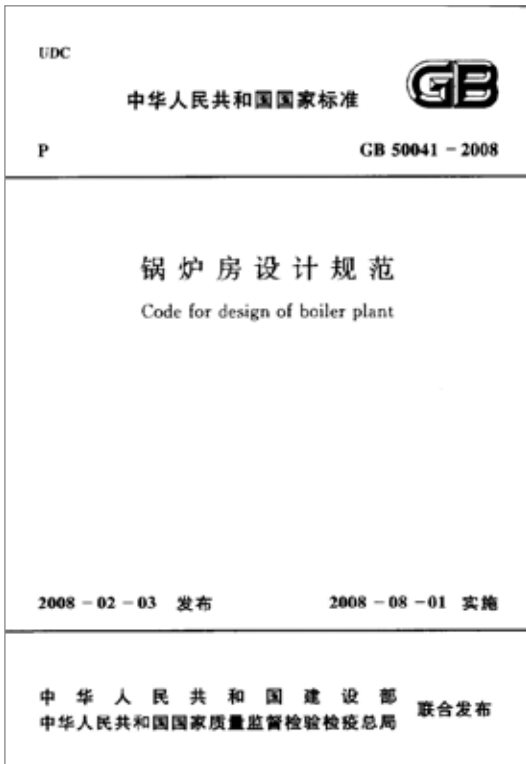
物 (液) 位仪表安装图		主编单位负责人 刘健民 主编单位技术负责人 孙建春 技术审定人 周勇 设计负责人 李瑞东	
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物 (液) 位仪表安装图 (P<1.6MPa, P<4.0MPa, 16250℃)	3-4	物 (液) 位仪表安装图 (P<1.6MPa, P<4.0MPa, 16250℃)	3-4
物 (液) 位仪表安装图 (P<1.6MPa, P<4.0MPa, 16250℃)	5	物 (液) 位仪表安装图 (P<1.6MPa, P<4.0MPa, 16250℃)	5
物 (液) 位仪表安装图 (P<1.6MPa, P<4.0MPa, 16250℃)	6	物 (液) 位仪表安装图 (P<1.6MPa, P<4.0MPa, 16250℃)	6
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物 (液) 位仪表安装图 (P<1.6MPa, P<4.0MPa, 16250℃)	8	物 (液) 位仪表安装图 (P<1.6MPa, P<4.0MPa, 16250℃)	8
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#### 6、《物 (液) 位仪表安装图》GJB-669

本图集适用于供热、供冷、石油、燃气及石油、化工生产过程中常压容器、压力容器物 (液) 位仪表显示的安裝图。

#### 6. Material (Liquid) Level Instrument Installation Drawing

Scope of Application: This Atlas is applicable for installation of level instruments of non-pressure vessels, pressure vessels (liquid) in heating, cooling, petroleum, gas and petroleum, chemical production processes.



#### 7、《锅炉房设计规范》GB50041—2008

本规范适用于下列范围内的工业、民用、区域锅炉房及其室外热力管道设计：

- 1 以水为介质的蒸汽锅炉房，其单台锅炉额定蒸发量为 1~75t/h、额定出口蒸汽压力为 0.10~3.82MPa（表压）、额定出口蒸汽温度小于等于 450℃；
- 2 热水锅炉房，其单台锅炉额定热功率为 0.7~70MW、额定出口水压为 0.10~2.50MPa（表压）、额定出口水温小于等于 180℃；
- 3 本规范不适用于余热锅炉、垃圾焚烧锅炉和其他特殊类型锅炉的锅炉房和城市热力网设计。

本规范不适用于余热锅炉、垃圾焚烧锅炉和其他特殊类型锅炉的锅炉房和城市热力网设计。

#### 7. Code for Design of Boiler Plant

Scope of Application: This Code is applicable for design of industrial, civil, regional boiler rooms and their outdoor thermal pipelines of the following scope:

1. Steam boiler room with water as the medium, the rated evaporation of a single boiler boiling is 1~75t/h, the rated outlet steam pressure is 0.10~3.82MPa (gauge pressure), and the rated outlet steam temperature is 450°C or less;
2. Hot water boiler room, the rated thermal power of a single boiler is 0.7~70MW, the rated outlet water pressure is 0.10~2.50MPa (gauge pressure), and the rated outlet water temperature is 180°C or less;
- 3 This Code is not applicable to the design of boiler rooms and urban thermal networks for waste heat boilers, waste incineration boilers and other special types of boilers.

This Code is not applicable to the design of boiler rooms and urban thermal networks for waste heat boilers, waste incineration boilers and other special types of boilers.



#### 8、《声学 用于评价环境声压级的多声源工厂的声功率级测定工程法》GB/T 20246—2006 本规范不适用于余热锅炉、垃圾焚烧锅炉和其他特殊类型锅炉的锅炉房和城市热力网设计。

本标准规定了一种工程法：测定大型多声源工厂的声功率级，这关系到其环境声压级的评价。这些声功率级可以用于这类评价的预报模型。本方法限定于具有多个噪声源（各个独立声源的组合）的大型工厂，其主尺寸位于水平面上，在所有水平方向上噪声辐射基本上是一致的。非加权声压级以倍频带测量。

本标准适用的声源，可以是辐射宽频带噪声、窄频带噪声、离散纯音、重复性脉冲噪声和上述这些成分的组合。

#### 8. Acoustics-Determination of Sound Power Levels of Multisource Industrial Plants for Evaluation of Sound Pressure Levels in the Environment-Engineering Method This Code is not applicable to the design of boiler rooms and urban thermal networks for waste heat boilers, waste incineration boilers and other special types of boilers.

Scope of Application: This Standard specifies an engineering method: Determine the sound power levels of large multisource plants, which is related to the evaluation of sound pressure levels in the environment. These sound power levels can be used for predictive models of such evaluations.

The method is limited to large plants with multiple noise sources (combinations of individual independent sound sources) with its main dimensions on a horizontal plane and the noise radiation is basically uniform in all horizontal directions. The non-weighting sound pressure level is measured with octave band.

The sound source applicable in this standard may be radiated broadband noise, narrowband noise, discrete pure tones, repetitive impulse noise, and combinations of these components.





9、《声学 隔声罩的隔声性能测定 第1部分:实验室条件下测量(标示用)》GB/T18699.1-2002

本标准规定了小型机器隔声罩的隔声性能(插入损失)测定的实验室方法。所谓“实验室条件”是指测试条件和测试环境符合表1中选用的有关标准要求。本标准仅适用于整体声罩,而不适用于隔声罩的单独部件测量。

9. Acoustics--Determination of Sound Insulation Performances of Enclosures Part 1: Measurements under Laboratory Conditions (for Declaration Purposes)

Scope of Application: This Standard specifies the laboratory method for determination of the sound insulation performance (insertion loss) of sound enclosures of small machines. The so-called "laboratory conditions" means that the test conditions and test environment shall meet the relevant standard requirements selected in Table 1. This Standard is applicable only to the overall enclosures and is not suitable for the measurement of individual parts of the enclosures.



10、《声学 隔声罩的隔声性能测定 第2部分:现场测量(验收和验证用)》GB/T 18699.2-2002

本标准规定了机器隔声罩的隔声性能(插入损失)测量的现场测量方法。本标准仅适用于整体隔声罩,而不适用于隔声罩的构成部件测量。

10. Acoustics-Determination of Sound Insulation Performances of Enclosures--Part 2: Measurements In Situ (for Acceptance and Verification Purposes)

Scope of Application: This Standard specifies the in-situ method for determination of the sound insulation performance (insertion loss) of sound enclosures of small machines. This Standard is applicable only to the overall enclosures and is not suitable for the measurement of component parts of the enclosures.



11、《声学 隔声间的隔声性能测定 实验室和现场测量》GB/T 19885—2005/ISO 11957: 1996

本标准规定了声防护用的隔声间隔声性能测定的实验室方法（第6章）和现场方法（第7章）。隔声性能是以用隔声间后得到的声压级或声功率级降低值来表示。本方法适用于小泄漏比（ $\leq 2\%$ ）的隔声间。本标准仅适用于整体的隔声间，而不适用于构成隔声间的单个部件。

11. Acoustics-Determination of Sound Insulation Performance of Cabins-Laboratory and In-Situ Measurements

Scope of Application: This Standard specifies the laboratory method (Chapter 6) and in-situ method (Chapter 7) for acoustics-determination of acoustic booth. The sound insulation performance is expressed by the sound pressure level or sound power level reduction value obtained after the acoustic booth. This method is applicable for acoustic booth with small leakage ratio ( $\leq 2\%$ ). This Standard is applicable only for the overall acoustic booth, not individual components composing the acoustic booth.



12、《声学 低噪声工作场所设计指南噪声控制规划》GB/T 17429.1—1998

本标准通过论述噪声控制的基本概念，从而给出处理新建或已有工作场所噪声问题的规划。同时还论及了在购置新机器、设备时可采取的一些主要步骤。本标准适用于装设有机器的各种工作场所。

12. Acoustics-Guidelines for the Design of Low-Noise Workplaces-Noise Control Strategies

Scope of Application: This Standard addresses the basic concepts of noise control to give a plan for dealing with noise problems in new or existing workplace. It also discusses some of the main steps that can be adopted when purchasing new machines and equipment. This Standard is applicable for all kinds of workplaces equipped with machines.



### 13、《机械工业建设工程设计文件深度规定》JBJ35—2004

本规定共分八章，内容有：总则、可行性研究报告、初步设计、施工图设计、环境保护篇、职业安全卫生篇、消防篇、节能篇（章）等。

### 13. The Regulations to the Documents of Construction Engineering Design of Machinery Industry

Scope of Application: This Regulation is divided into 8 chapters, including: general rules, feasibility study report, preliminary design, construction drawing design, environmental protection chapter, occupational safety and health chapter, fire-fighting chapter, energy-saving chapter, etc.



### 14、《电镀废水治理设计规范》GB50136—2011

本规范适用于新建、扩建和改建的电镀废水治理工程的设计。

### 14. Code for Design of Electroplating Wastewater Processing

Scope of Application: This Code is applicable for the design of the new construction, expansion and renovation of electroplating wastewater processing projects.



15、《机械工业厂房建筑设计规范》GB50681—2011

- 1 新建、扩建、改建的机械工业厂房及其附属建筑的建筑设计；
- 2 机械工业工厂中电离辐射室的建筑设计；
- 3 机械工业工厂中电磁屏蔽室，屏蔽频率为 0.15MHz ~ 30MHz 利用建筑物增设屏蔽层的建筑设计。

15. Code for Design of Machinery Architecture

Scope of Application:

1. The architectural design of the new construction, expansion and renovation of mechanical industrial plant and its ancillary buildings;
2. Architectural design of the ionizing radiation chamber;
3. Architectural design of the ionizing radiation chamber in the machinery industry plant with shielding frequency of 0.15MHz~30MHz by adding shielding layer with buildings;



16、《陶粒混凝土小型空心砌块与陶粒混凝土砖建筑技术规程》湘 2010G603

本规程适用于湖南省非抗震设防区和抗震设防烈度为 7 度及 7 度以下的地区，以陶粒混凝土保温砌块与陶粒混凝土保温砖为墙体材料的一般工业与民用建筑的设计、施工及验收。

16. Technical Specification for Ceramsite Thermal Insulation Block and Ceramsite Thermal Insulation Brick Masonry Building

Scope of Application: This Specification is applicable for the design, construction and acceptance of general industrial and civil buildings, using ceramsite concrete insulation blocks and ceramsite concrete insulation bricks as wall materials.

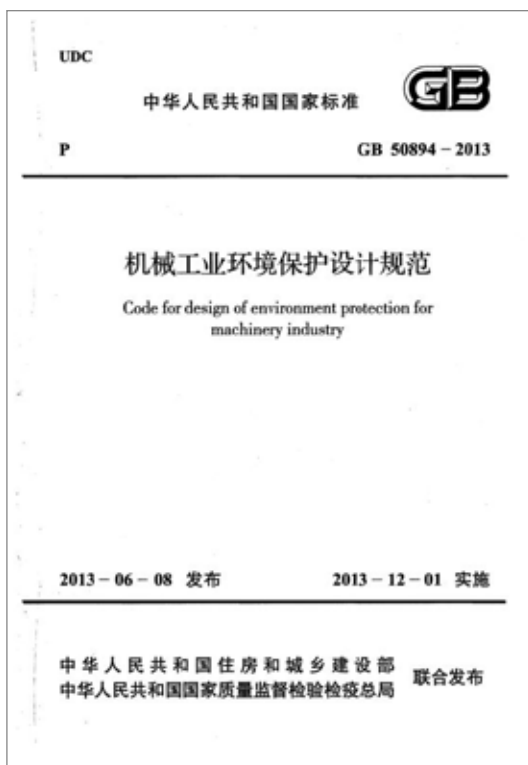


17、《绿色工业建筑评价标准》GB/T 50878-2013

本标准适用于新建、扩建、改建、迁建、恢复的建设工业建筑和既有工业建筑的各行业工厂或工业建筑群中的主要生产厂房、各类辅助生产建筑。

17. Evaluation Standard for Green Industrial Building

Scope of Application: This Standard is applicable for new construction, expansion and renovation relocation, and recovery construction of all plants of industrial buildings and existing industrial buildings in various industries, or the main production plants in various industrial buildings and various auxiliary production buildings.



18、《机械工业环境保护设计规范》GB 50894-2013

本规范适用于机械工业新建、改建、扩建和技术改造项目的环境保护设计。

18. Code for Design of Environment Protection for Machinery Industry

Scope of Application: This Code is applicable to the environmental protection design of new construction, renovation, expansion and technical transformation projects of the machinery industry.



19、《1kV 及以下通用变频调速设备第 2 部分 试验方法》GB/T 30884.2—2014

GB/T30844 的本部分规定了调速设备的试验方法。

本部分适用于额定输入电压为交流 1kV 等级及以下，额定输入频率为 50Hz 或 60Hz，输出电压不超过 1kV，输出频率小于 600Hz 的通用变频调速设备（以下简称调速设备）。

注：交流额定电压 1140V 的电器可参照本部分执行。有关的性能等要求由制造厂和用户协商确定。

19. Variable-Frequency Drive of 1 kV and Below—Part 2: Test Methods

Scope of Application: This Part of GB/T30844 specifies the test methods for speed control equipment.

This Part is applicable for general-purpose variable frequency drive (hereinafter referred to as speed control equipment) with rated input voltage of 1kV and below, rated input frequency of 50Hz and 60Hz, output voltage not exceeding 1kV, and output frequency less than 600Hz.

Note: Refer to this section for appliances with an AC rated voltage of 1140V. The relevant performance requirements are determined through consultation between the manufacturer and the user.



20、《保温装饰板外墙外保温系统应用技术规程》DBJ43/T—2014

本规程适用于 100m 高度以内的新建、扩建和改建民用建筑及既有建筑节能改造的保温装饰板外墙外保温系统工程的设计、施工、验收与维护。

20. Technical Specification of External Thermal Insulation Systems Based on Insulated Decorative Panel

Scope of Application: This Specification is applicable to the design, construction, acceptance and maintenance of the thermal insulation decorative panel exterior insulation system project for new, expansion and renovation of civil buildings within 100m height and energy conservation renovation of existing buildings.



21、《烧结装饰砖夹芯保温外墙应用技术规程》DBJ43/T307—2014

本规程适用于湖南省非抗震设防区和抗震设防烈度为 7 度及以下的地区，以烧结装饰砖为外叶墙的夹芯保温外墙的建筑设计、施工及验收。

21. Technical Specification for Application of Cavity Wall Filled with Thermal Insulation and Fired Facing Bricks

Scope of Application: This Specification is applicable for the design, construction and acceptance of cavity wall filled with thermal insulation and fired facing bricks in non-seismic fortification areas and areas with seismic fortification intensity of 7 degrees or less in Hunan Province.



22、《压缩空气站设计规范》GB50029—2014

本规范适用于装有电力驱动、工作压力小于或等于 42MPa 的活塞空气压缩机、隔膜空气压缩机、螺杆空气压缩机、离心空气压缩机的新建、改建、扩建的压缩空气站及其压缩空气管道的设计。

22. Code for Design of Compressed Air Station

Scope of Application: This Code is applicable for the design of new, renovation and expansion of compressed air stations of piston air compressors, diaphragm air compressors, screw air compressors and centrifugal air compressors with electric drive and working pressure less than or equal to 42 MPa and its compressed air pipelines.



23、《机械工业工程设计基本术语标准》GB/T 51218-2017

本标准适用于机械工业建设工程项目的设计文件编制，也适用于机械工业工程项目的前期咨询、工程施工、建设监理和教学工作。

23. Standard for Basic Terminology of Engineering Design of Machinery Industry

Scope of Application: This standard is applicable for the design documentation of mechanical industrial engineering construction projects, and also the preliminary consultation, engineering construction, construction supervision and teaching work of mechanical industrial engineering projects.



24、《民用建筑节约材料评价标准》GB/T34909-2018

本标准规定了民用建筑节约材料评价的术语和定义、设计阶段评价、施工阶段评价和评价方式。本标准适用于民用建筑设计阶段和施工阶段节材水平的前期评估和比选，也适用于绿色建筑节材部分的评价。

24. Evaluation Standard of Material-Saving for Civil Building

Scope of Application: This Standard specifies the terms and definitions of the evaluation of the material-saving for civil buildings, the evaluation at the design stage, the evaluation at the construction stage and the evaluation method. This Standard is applicable for the preliminary evaluation and comparison of the material-saving level in the civil building design stage and the construction stage, and is also applicable for the evaluation of the green building material-saving part.





25、《装配式斜支撑节点钢框架结构技术规程》DBJXX/XX-201X  
本规程中的结构是标准化设计、工厂化制作、装配式施工的结构体系：适用于 100m 以下，抗震设防烈度为 6—8 度的多、高层的装配式斜支撑节点钢框架结构民用建筑的设计、生产、安装与验收。

25. Technical Specification for Prefabricated Steel Frame Structure with Inclined Support Joints

Scope of Application: The structure in this Specification is the structural system of standardized design, factory production and assembly construction: applicable for design, production, installation and acceptance of multiple and high-rise fabricated diagonal support node steel frame structures civil building of less than 100m and seismic fortification intensity of 6-8 degrees.



26、《旋转电机 定子绕组绝缘离线局部放电测量 第 1 部分：离线局部放电测量》GB/T 20833.1-2016/IEC/TS 60034-27:2006

GB/T 20833 的本部分规定了使用最大频率为 400Hz 的交流电压试验时，旋转电机（简称电机）定子绕组绝缘离线局部放电测量的通用基础规范，包括：测量方法和仪器；试验回路的布置；试验规程的标准化；噪声的降低；试验结果文件编制；试验结果评价。

本部分适用于槽部有防晕的线棒或成型线圈的电机。

本部分通常对额定电压 6kV 或者更高的电机是有效的。

本部分所述的测量方法也可适用于槽部无防晕的电机，测量结果可能有差异，但不在本部分涉及的范围。

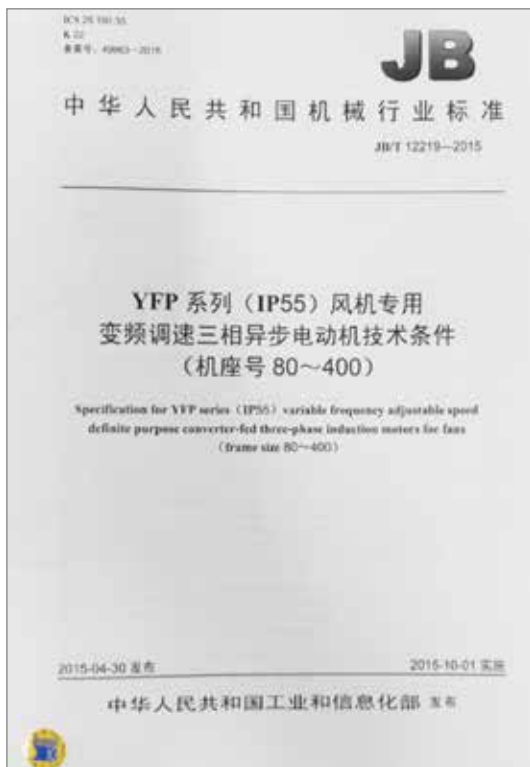
26. Rotating Electrical Machines-the Stator Winding Insulation of Rotating Electrical Machines-Part 1: Off-line Partial Discharge Measurements

Scope of Application: This Part of GB/T 20833 specifies the general basic specifications for the off-line partial discharge measurements of the stator winding insulation of rotating electrical machines (referred to as the motor) when using the AC voltage with a maximum frequency of 400Hz, including: measurement methods and instruments; arrangement of the test circuit; standardization of test procedures; reduction of noise; preparation of test results; and evaluation of test results.

This Part is applicable for motors with anti-corona bars or molded coils in the groove.

This Part is usually valid for motors with a rated voltage of 6kV or higher.

The measurement methods described in this Part may also be applicable for motors with no anti-corona in the groove. The measurement results may differ, but they are not within the scope of this Part.

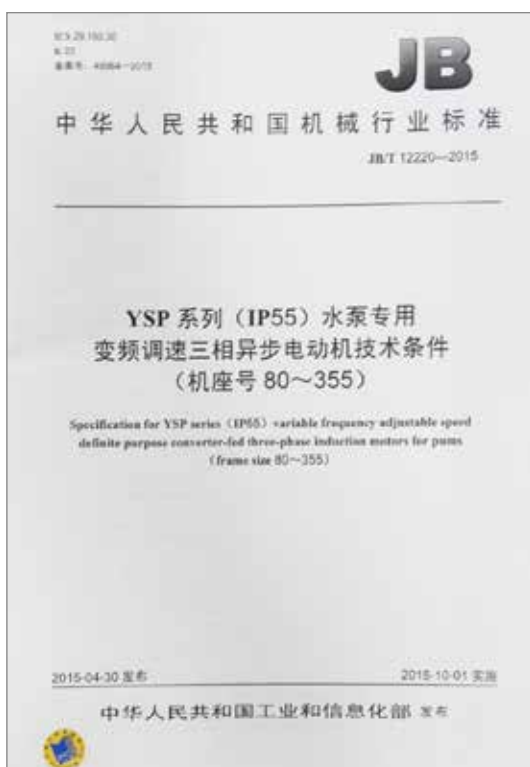


27、《风机专用变频调速三相异步电动机技术条件（IP55）（机座号 80~355）》JB/T 1219—2015

本标准规定了 YSP 系列（IP55）水泵专用变频调速三相异步电动机的型式、基本参数与尺寸，技术要求，检验规则，标志、包装及保用期的要求。本标准适用于 YSP 系列水泵专用变频调速三相异步电动机（机座号 80 ~ 355），电动机适用于拖动转矩、转速呈二次方关系变化的水泵产品。凡属本系列电动机所派生的各种系列电动机也可参照执行。

27. Specification for YSP Series (IP55) Variable Frequency Adjustable Speed Definite Purpose Converter-Fed Three-Phase Inducting Motors for Pumps (Frame Size 80~355)

Scope of Application: This Specification specifies the type, basic parameters and dimensions, technical requirements, test rules, marking, packaging and warranty period requirements of special frequency conversion speed regulation three-phase asynchronous motor of YSP series (IP55) water pump. This Specification is applicable for special frequency conversion speed regulation three-phase asynchronous motor (frame size 80 ~ 355) of YSP series water pump, and for motor of pump products with drag torque and rotational speed in quadratic relationship change. This Specification may also be referred to for all series of motors derived from this series of motors.



28、《泵机专用变频调速三相异步电动机技术条件（IP55）（机座号 80~400）》JB/T 12220—2015

本标准规定了 YFP 系列（IP55）风机专用变频调速三相异步电动机的型式、基本参数与尺寸、技术要求、检验规则以及标志、包装及保用期的要求。本标准适用于 YFP 系列风机专用变频调速三相异步电动机（机座号 80 ~ 400），电动机适用于拖动转矩、转速呈二次方关系变化的风机产品。凡属本系列电动机所派生的各种系列电动机也可参照执行。

28. Specification for YFP Series (IP55) Variable Frequency Adjustable Speed Definite Purpose Converter-Fed Three-Phase Inducting Motors for Fans (Frame size 80~400)

Scope of Application: This Specification specifies the type, basic parameters and dimensions, technical requirements, test rules, marking, packaging and warranty period requirements of special frequency conversion speed regulation three-phase asynchronous motor of YFP series (IP55) fans. This Specification is applicable for special frequency conversion speed regulation three-phase asynchronous motor (frame size 80 ~ 400) of YFP series fans, and for motor of fan products with drag torque and rotational speed in quadratic relationship change. This Specification may also be referred to for all series of motors derived from this series of motors.



29. 《低压电气装置 第 5—54 部分：电气设备的选择和安装 接地配置和保护导体》GB/T 16895.3—2017/IEC 60364—5—54：2011

本部分对接地配置和保护导体作出了相应的规定以便满足电气装置安全方面的要求。

29. Low-Voltage Electrical Installations—Part 5-54: Selection and Erection of Electrical Equipment—Earthing Arrangements and Protective Conductors

Scope of Application: This section specifies the grounding configuration and protective conductors to meet the safety requirements of electrical installations.



30. 《三相异步电动机再制造技术规范》JB/T12993—2018

本标准规定了电动机再制造的定义、设计要求、工艺要求、性能指标、检验规则和试验要求、出厂标志的要求。本标准适用于低效率三相异步电动机再制造成高效率三相异步电动机、双速三相异步电动机、变频调速三相异步电动机和永磁同步电动机。其他符合能效等级的电动机产品的再制造也可参照执行。

30. Technical Specification of Refabrication Three-Phase Induction Motors

Scope of Application: This Standard specifies the definition, design requirements, process requirements, performance indicators, inspection rules and test requirements, and out-of-factory marking requirements for motor remanufacturing. This Standard is suitable for the remanufacturing of low-efficiency three-phase asynchronous motors to high-efficiency three-phase asynchronous motors, two-speed three-phase asynchronous motors, variable-speed three-phase asynchronous motors and permanent magnet synchronous motors. This Standard can also be referred to in the case of remanufacturing of other motor products of the corresponding energy efficiency rating.



### 31、《海上永磁同步风力发电机》NB/T 31063—2014

本标准规定了并网型风力发电机组用海上永磁同步风力发电机的主要型式、技术要求、试验方法和校验规则、标志、包装、保证期等要求。本标准适用于海上安装的永磁同步发电机组使用的永磁同步风力发电机。

#### 31. Permanent Magnetic Synchronous Generator for Off-Shore Wind Turbine

Scope of Application: This Standard specifies the main types, technical requirements, test methods and calibration rules, marking, packaging, warranty period and other requirements for offshore permanent magnet synchronous wind turbines for grid-connected wind turbines. This Standard is suitable for permanent magnet synchronous wind turbines used in offshore mounted permanent magnet synchronous generator sets.



### 32、《海上双馈风力发电机技术条件》NB/T 31064—2014

本标准规定了并网型风力发电机组用海上双馈风力发电机的主要型式、技术要求、试验方法和校验规则、安全和警示标志、产品信息、包装、运输与贮存等要求。本标准适用于海上安装的风力发电机组使用的双馈风力发电机。

#### 32. Technical Specifications for Off-Shore Type Double-Fed Wind Generator

Scope of Application: This Standard specifies the main types, technical requirements, test methods and calibration rules, safety and warning marks, product information, packaging, transportation and storage requirements for offshore double-fed wind generators for grid-connected wind generator sets. This Standard is suitable for double-fed wind generators used in offshore wind generators.

## 湖南省地表水地源热泵系统 工程技术导则

XX-XX-XX 发布 XX-XX-XX 实施  
湖南省住房和城乡建设厅 发布

### 33. 《湖南省地表水地源热泵系统工程技术导则》

本导则适用于湖南省新建、改建和扩建的以地表水为低温热源，以水或添加防冻剂的水溶液为传热介质，采用蒸汽压缩热泵技术进行供热、制冷或制取生活热水的地表水地源热泵系统工程的勘察、设计、施工及验收。

#### 33. Hunan Provincial Technical guidelines for Surface Water Ground Source Heat Pump System Engineering

Scope of Application: This Standard specifies the main types, technical requirements, test methods and calibration rules, safety and warning marks, product information, packaging, transportation and storage requirements for offshore double-fed wind generators for grid-connected wind generator sets. This Standard is suitable for double-fed wind generators used in offshore wind generators.



### 34. 《暖通动力常用仪表安装》16R405

本图集适用于民用建筑和一般工业建筑中的暖通动力常用仪表的设计选型和安装。图集适用的介质及其设计压力和温度为水 2.0MPa，2 ~ 150℃；蒸汽 2.5MPa，200℃；常用气体（压缩空气、O<sub>2</sub>、N<sub>2</sub>、CO<sub>2</sub>）1.6MPa，0 ~ 80℃。主要内容包括在一定压力和温度条件下流量仪表、热 / 冷量仪表、温度仪表、压力仪表、湿度仪表、液位仪表的主要安装方式的节点详图、材料表以及配件的大样图等。图集涉及各类仪表种类齐全，具有实用性、便捷性和先进性，可以直接指导工程设计和施工安装。

#### 34. Installation of HVAC Power Instruments

Scope of Application: This Atlas is applicable for the design, selection and installation of HVAC instruments commonly used in civil buildings and general industrial buildings. The medium and design pressure and temperature of the atlas are water 2.0MPa, 2~150℃; steam 2.5MPa, 200℃; common gas (compressed air, O<sub>2</sub>, N<sub>2</sub>, CO<sub>2</sub>) 1.6MPa, 0~80℃. The main contents include node details, material tables and large sample drawings of the main installation methods of flow meters, heat/cool gauges, temperature gauges, pressure gauges, humidity gauges, and liquid level gauges under certain pressure and temperature conditions. The various types of instruments involved in the Atlas are complete, practical, convenient and advanced, and can directly guide engineering design and construction and installation.



### 35、《变频器供电交流感应电动机确定损耗和效率的特定试验方法》 GB/T 32877-2016/IEC/TS 60034-2-3: 2013

本标准规定了在 IEC60034-1 范围内的交流感应电动机在变频器供电时确定损耗和效率的特定试验方法。交流感应电动机也是由 IEC61800-2、IEC61800-4 或 IEC/TS 61800-8 所定义的变频电气传动系统 (PDS) 的一部分。用本标准确定的附加谐波损耗是用来比较不同的电动机设计，它们不适用于来确定 PDS 的效率，该 PDS 是在一个驱动设备中且具有转矩转速宽范围调整的功能。

#### 35. Specific Test Methods for Determining Losses and Efficiency of Converter-Fed AC Induction Motors

Scope of Application: This Standard specifies the specific test method for determining the loss and efficiency of converter-fed AC induction motors covered by IEC60034-1. AC induction motors are also part of the variable frequency electric drive system (PDS) defined by IEC61800-2, IEC61800-4 or IEC/TS 61800-8. The additional harmonic losses determined by this Standard are used to compare different motor designs. They are not suitable for determining the efficiency of a PDS that is in a single drive unit and has a wide range of torque speed adjustments.



### 36、《管道穿墙、屋面防水套管》18R409

本图集为修编图集，替代 01R409。图集在原图集基础上，对常用套管内容依据管道穿围护结构的位置及功能进行了整合梳理，区分了穿楼板、屋面套管；穿防火墙套管，穿临空墙套管；穿普通墙套管及穿基础墙套管。补充了保温管道穿墙、楼板的套管做法。套管的管径范围扩充至 DN1000。同时对原图集的细节进行了修订：取消套管固定筋做法，统一采用翼环；结合工程实践，取消了防偏板；套管的设置充分考虑到施工预埋工艺的要求。图集更加贴合工程实际，适合工程技术人员使用。

#### 36. Pipe through Wall Roof Waterproof Sleeve

Scope of Application: This Atlas is a revised atlas, replacing 01R409. On the basis of the original atlas, this Atlas integrates and sorts common sleeves according to the position and function of the pipeline wearing structures, which distinguishes floor slab and roof sleeves, firewall casing and blast-proof partition wall sleeves, and ordinary wall sleeves and foundation wall sleeves. It supplements the sleeve method of insulating pipes going through walls and floors. The diameter of the sleeves is extended to DN1000. At the same time, the details of the original atlas are revised: the method of sleeve fixing ribs is removed and wing rings are adopted for all instead; the anti-offset plate is eliminated considering the engineering practice; the installation of the sleeves well considers the requirements of embedding process in the construction. This Atlas, closer to engineering practice, is more suitable for engineering and technical personnel.





### 37. Sponge Building and Rainwater Control and Utilization in Residential Area

Scope of Application: This Atlas is applicable to the design and construction of rainwater control and utilization in new, renovated and expanded civil buildings and communities, industrial buildings and plants. It is not applicable to rainwater utilization projects where rainwater is used as a source of portable water. The rainwater infiltration facility in the map is applicable for projects with a soil permeability coefficient of 10-6 to 10-3 m/s, and is not applicable to collapsible loess, expansive soil, high-salt soil, and permanent frozen soil. Rainwater recycling facilities should be used in areas with an average annual rainfall of more than 400mm.

The main content includes main points of design in rainwater infiltration system, rainwater recycling system, rainwater storage and discharge system, and roof rainwater collection and discharge system, as well as method for facilities for site rainwater removal and over-standard rainwater disposal.

This Atlas, as a revision of 10SS705 Rainwater Comprehensive Utilization, supplements the technical measures of seepage, stagnation, storage, purification, use and drainage of sponge type building and community rainwater control and utilization projects. It provides technical support and plays an active role in realizing the goal of controlling total runoff of rainwater, runoff peak, and runoff pollution, and utilizing rainwater resources.

### 37、《海绵型建筑与小区雨水控制与利用》17S705

本图集适用于新建、改建和扩建的民用建筑及小区、工业建筑及厂区雨水控制及利用的设计与施工。不适用于雨水作为生活饮用水水源的雨水利用工程。图集雨水入渗设施适用于土壤渗透系数  $10^{-6} \sim 10^{-3} \text{m/s}$  的工程，不适用于湿陷性黄土、膨胀土、高含盐土、永久性冻土土壤。雨水回收利用设施宜用于年均降雨量大于 400mm 的地区。主要内容包括雨水入渗系统、雨水回收利用系统、雨水调蓄排放系统、屋面雨水收集排放系统的设计要点及场地雨水排除、超标雨水处置等设施的做法。

本图集是对 10SS705《雨水综合利用》的修编，修改补充了海绵型建筑与小区雨水控制及利用工程的渗、滞、蓄、净、用、排等技术措施，为实现雨水的径流总量控制、径流峰值控制、径流污染控制和雨水资源化利用的目标提供技术支撑、起到积极作用。



### 38. Heat Pipe Installation and Installation of Integrated Pipe Gallery

Scope of Application: This is a new atlas. It is one of the special series of design for the national building standard of urban utility tunnel. It is prepared according to GB 50838-2015 Technical code for urban utility tunnel. This Atlas is applicable to the installation of steel pipes in cast-in-place concrete urban utility tunnel with the design pressure of heating hot water medium  $P \leq 1.6 \text{MPa}$ , the design temperature less than or equal to  $130^\circ\text{C}$ , and the nominal diameter  $DN \leq 1200 \text{mm}$  and to the installation of steel pipes in cast-in-place concrete urban utility tunnel with the design pressure of heating hot water medium  $P \leq 1.6 \text{MPa}$ , the design temperature is less than or equal to  $350^\circ\text{C}$ , and the nominal diameter  $DN \leq 800 \text{mm}$ .

In view of the current level of development of the urban utility tunnel, the Atlas is based on the principles of safety and application. The preparation of the atlas considers the characteristics of the thermal pipeline and the characteristics of the urban utility tunnel, and targets the technical problems that may be encountered in the installation of heat pipes in the tunnel. The content covers the conventional installation methods and construction techniques applied in the process of laying hot pipes, the characteristics of the tunnel and the requirements of the specifications. It mainly includes the layout of the mid-tunnel section, the pipe entering/exiting tunnel outlet, the branch outlet. Content like the segment valve deflation, the water discharge device, the compensator, and the safety exit is for design reference. Pipe support, fabricated bracket, concrete buttress, pre-buried base, anti-corrosion practice, hook, sleeve, pipe insulation thickness, etc.

### 38、《综合管廊热力管道敷设与安装》17GL 401

此为新版图集。为城市综合管廊国家建筑标准设计专项系列内容之一。图集依据 GB 50838-2015《城市综合管廊工程技术规范》，本图集适用于供热热水介质设计压力  $P \leq 1.6 \text{MPa}$ ，设计温度小于或等于  $130^\circ\text{C}$ ，公称直径  $DN \leq 1200 \text{mm}$  钢制金属管道与供热蒸汽介质设计压力  $P \leq 1.6 \text{MPa}$ ，设计温小于或等于  $350^\circ\text{C}$ ，公称直径  $DN \leq 800 \text{mm}$  钢制金属管道在现浇混凝土综合管廊内敷设安装。鉴于综合管廊现阶段发展水平的限制，本图集秉承安全及适用的原则进行编制。编制过程中从热力管道的特点与城市地下综合管廊的特点出发，针对热力管道廊内敷设安装可能遇到的技术问题编制。内容涉及热力管道敷设过程中应用的常规安装方式与施工技术，管廊特点及规范要求。主要包含中管廊断面布置，管道出/入廊、分支出线，分段阀放气、泄水装置、补偿器、安全出口等内容为设计参考性内容。管道支座、装配式支架、混凝土支墩、预埋基件、防腐做法、吊钩、套管、管道保温层厚度等内容。



39、《电机系统节能量测量和验证方法 第1部分：电动机节能量测量和验证方法》GB/T 13487.1—2017

本部分规定了电动机系统中电动机现场能效测试涉及的技术活动，包括：一般规定、测试边界的确定、现场测试条件、测试仪表及读数要求、测试项目及工作程序、现场能效测试方法及计算、能效测试方法与测量不确定度。本部分适用于拖动风机、水泵、压缩机等设备的单速交流三相电动机的现场能效测试，变速电动机也可参照使用。

39.Procedures for Measurement and Verification of Motor-System Energy-Savings-Parts 1: Test Procedures on Working Site for Energy Efficiency of Motor

Scope of Application: This part specifies the technical activities involved in the field energy efficiency test of the motor in the motor system, including: general regulations, determination of test boundaries, field test conditions, test instruments and reading requirements, test items and working procedures, field energy efficiency test methods and calculations, energy efficiency test methods and measurement uncertainty. This part applies to the field energy efficiency test of a single-speed AC three-phase motor that drives fans, pumps, compressors, etc. It can also be referred to in the case of variable speed motors.



40、《电机系统节能量测量和验证方法 第2部分：电动机节能量测量和验证方法 泵系统节能量测量和验证方法》JB/T 12992.2—2018

本部分规定了泵系统节能改造涉及的效果模式及适用改造方式、基期、统计报告期和用于节能量计算数据的确定、测量和验证方案、测试仪表及读数要求、节能量的测量、节能量的计算、报告的编制等内容。本部分适用于电动机拖动液体输送泵系统节能改造项目的现场测试和节能量的确定。

40.Procedures for Measurement and Verification of Motor-System Energy-Savings-Parts 2: Procedures for Measurement and Verification of Pump-System Energy-Saving

Scope of Application: This part specifies the effect mode and applicable modification method, the base period, the statistical report period and the determination, measurement and verification scheme for the energy-saving calculation data, the test instrument and reading requirements, the measurement of energy saving, the calculation of energy saving and the preparation of reports, etc.

This part is applicable to the on-site test and energy saving determination of the energy-saving retrofit project of the motor-driven liquid transfer pump system.





41、《建筑工程设计信息模型制图标准》JGT/T 448—2018

本标准适用于新建、扩建和改建的民用建筑及一般工业建筑设计的信息模型制图。

41.Standard for Graphic Expression of Building Information Modeling

Scope of Application: This Standard applies to graphic expression of information modeling for new, expanded and innovated civil buildings and general industrial building designs.



42、《湖南省 EPS 模块外保温工程技术规程》DBJ43/T 310—2015

本规程适用于湖南省居住建筑新建、扩建、改建及既有建筑节能改造工程 EPS 模块外保温系统的设计、施工和工程质量验收。

42. Hunan Provincial Technical Specification for Exterior Thermal Insulation System with EPS Module

Scope of Application: This Specification applies to design, construction and acceptance of engineering quality of exterior thermal insulation system with EPS module for new, expanded and innovated residential buildings and energy-efficiency renovation project of existing buildings in Hunan Province.



43、《陶粒增强泡沫混凝土砌块建筑技术规程》DBJ43/T 309—2015  
本规程适用于湖南省非抗震设防区和抗震设防烈度为 7 度及 7 度以下的地区，以陶粒增强泡沫混凝土砌块为墙体材料的一般工业与民用建筑自承重墙体的设计、施工及质量验收。

43. Technical Specification for Ceramic Reinforced Foam Concrete Block Masonry Building  
Scope of Application: This Specification applies to design, construction and acceptance of engineering quality of self-supporting wall for general industrial and civil buildings with ceramic reinforced foam concrete block masonry as wall materials in non-seismic fortification zones and areas with seismic fortification intensity of 7 degrees and below in Hunan Province



44、《长沙市低影响开发雨水控制利用系统设计技术导则》  
DBCJ001—2016

本导则适用于长沙市城区新建、改建和扩建的建筑与小区（包括工商业区）、市政道路、城市绿地与广场等建设项目雨水控制利用系统的规划、设计。

44. Technical Guidelines for the Design of Low Impact Rainwater Control and Utilization System in Changsha

Scope of Application: These Guidelines apply to planning and design of rainwater control and utilization system for new, expanded and innovated buildings and communities (including industrial and commercial areas), municipal roads, urban green spaces and plazas in Changsha City.



45、《电励磁同步风力发电机技术条件》NB/T 31100—2016

本标准规定了并网型风力发电机组用电励磁同步发电机的主要型式、技术要求、试验方法、校验规则、标志与包装、保用期等要求。

45. Technical Requirements of Electrical Excitation Synchronous Generator for Wind Turbine  
Scope of Application: These Requirements specify the main types, technical requirements, test methods, calibration rules, marking and packaging, warranty period and other requirements for the electric excitation synchronous generators of grid-connected wind generator set.



46、《低压配电设计标准》GB 50054—20XX

本标准适用于新建、改建和扩建工程中交流工频 1000V 或直流 1500V 及以下的低压配电设计。

46. Standard for Design of Low Voltage Electrical Installations  
Scope of Application: This Standard applies to design of low voltage electrical installations for AC power frequency 1000V or DC 1500V and below in new construction, innovation and expansion projects.



#### 47、《风力发电机组、异步发电机第二部分试验方法》

GB/T 19071.2-2018

GB/T 19071 的本部分规定了并网、定速型风力发电机组异步发电机的试验方法。

本部分适用于并网、定速型风力发电机组单速或双速异步发电机（以下简称“发电机”）的性能试验。

#### 47. Wind Turbines—Asynchronous Generator—Part 2: Testing Methods

Scope of Application: This Part of GB/T 19071 specifies the testing methods of grid-connected, fixed speed wind turbines-asynchronous generator.

This Part applies to the performance testing of grid-connected, fixed speed wind turbines-single speed or two-speed asynchronous generator (hereinafter referred to as generator).



#### 48、《风力发电机组 永磁同步发电机第2部分 试验方法》

GB/T 25389.2-2018

GB/T 19071 的本部分规定了并网、定速型风力发电机组异步发电机的试验方法。本部分适用于并网、定速型风力发电机组单速或双速异步发电机（以下简称“发电机”）的性能试验。

#### 48. Wind turbines—Permanent Magnet Synchronous Generator—Part 2: Testing Methods

Scope of Application: This part of GB/T 19071 specifies the testing methods of grid-connected, fixed speed wind turbines-asynchronous generator.

This Part applies to the performance testing of grid-connected, fixed speed wind turbines-single speed or two-speed asynchronous generator (hereinafter referred to as generator).



49、《湖南省装配式绿色建筑评价标准》DBJ 43/T332—2018  
本标准适用于评价本省绿色装配式建筑的装配化程度。

49. Hunan Province Standard for Assessment of Green Prefabricated Building  
Scope of Application: This Standard applies to assessment of the extent of assembly for green prefabricated buildings in Hunan Province.



50、《城镇液化天然气供应站工程设计规范》GB50XXX—20XX

本规范适用于新建、扩建或改建的下列城镇液化天然气供应站的设计：

- 1 天然气液化调峰供气站；
- 2 液化天然气储配站；
- 3 液化天然气气化站。

50. Code for Design Urban Liquefied Gas (LNG) Supply Station

Scope of Application: This Code applies to design of the following new, expanded and innovated LNG supply stations:

- 1 LNG peak regulation supply station;
- 2 LNG storage and distribution station;
- 3 LNG vaporizing station.

# 中机中电设计研究院有限公司

China Electric Design and Research Institute Co., Ltd.

**公司名称：中机中电设计研究院有限公司**  
**Company Name: China Electric Design and Research Institute Co., Ltd.**

中机中电设计研究院有限公司（简称中电院）始建于1951年，是国家大型综合性设计单位的先驱者，隶属于全球工程承包商225强企业——中国电力工程有限公司的央企公司。中电院技术力量雄厚，综合实力突出，业务领域全面，可为工程建设项目提供全过程、全方位的服务。

**技术力量雄厚** 中电院现有各类专业技术人员200余人，其中教授级高工16人，高级工程师80余人，各类国家注册工程师（包括建筑师、结构工程师、电气工程师、公用设备工程师、造价工程师、咨询工程师、监理工程师）、项目管理专家等70余人，专业齐全，人才梯队完备。

**综合实力突出** 中电院具有国家甲级工程咨询、甲级工程设计、甲级造价咨询、甲级工程监理、甲级工程总承包和甲级压力管道设计等资质；是北京市确定的固定资产投资项目节能评估机构之一；具有商务部颁发的对外工程承包和对外援助工程资质。中电院负责IEC-TC64（国际电工技术委员会建筑物电气装置）中国技术委员会的归口工作；负责主编部分国家电力规范及机械行业规范；承担国家重大项目（如核电站、三峡工程等）的评估与论证工作。

**业务领域全面** 中电院能为客户提供全过程、全方位的服务。全过程包括工程建设前期、项目实施和项目运行等，全方位包括投资策划咨询、前期科研、工程设计、招标代理、造价咨询、工程监理、施工前期准备、施工过程管理、竣工验收及运营保修等。

**项目业绩丰富** 中电院已经为机械、建筑、电力、市政、轻工、汽车、石化、物流储运、电子通信、环境保护和智能化等行业提供过先进的技术服务工作；完成各类工程咨询、工程设计和工程总承包项目数千项；研制各类专用设备、生产线等近百项；积极拓展并圆满完成了多项海外工程。中电院为国内外各个行业的发展规划和目标实现做出了重要贡献，赢得了用户的信任和满意。

**科技创新持续** 中电院积极跟踪和研究业务领域的技术发展，并拥有多项专利技术，用以保证技术的先进性。拥有多种自有专利、联营加工的设备及材料、新型建筑材料、

China Electric Design and Research Institute Co., Ltd. (CEI) was founded in 1951. It is a pioneer of the country's large-scale comprehensive design unit and a state-owned enterprise affiliated to China National Electric Engineering Corporation, (CNEEC) a TOP 225 global engineering contractor. CEI has a strong technical force, outstanding comprehensive strength and comprehensive lines of business, which can provide a full-process and all-round service for engineering construction projects.

**Powerful technical strength:** CEI has more than 200 professional and technical personnel, including 16 professor level senior engineers and more than 80 senior engineers. All kinds of national registered engineers (including architects, structural engineers, electrical engineers, and public equipment engineers, cost engineer, consulting engineer, supervising engineer), project management experts, more than 70 people, complete professional echelon personnel complete.

**Outstanding comprehensive strength:** CEI has the qualifications of national Grade A engineering consultation, Grade A engineering design, Grade A construction cost consultation, Grade A engineering supervision, Grade A engineering general contracting and Grade A pressure pipeline design. CEI is one of the energy efficiency estimation agencies for fixed-asset investment projects in Beijing. CEI has foreign engineering contracting certificate and foreign aid project qualification issued by the Ministry of Commerce. CEI is entitled to IEC-TC64 (electrical installations of buildings of the International Electrotechnical Commission) and its work of the technical committees in China. CEI is partly in charge of formulation of national design codes of electrical and machinery industries, CEI also undertakes or participates in technical evaluation and justification of national major projects, such as nuclear power plant and three-gorges project.

**Comprehensive business areas:** CEI can provide customers with the whole process and full range of services. The whole process includes pre-engineering construction, project implementation and project operation. Full range include investment planning consulting, preliminary research, engineering design, bidding agency, cost consulting, project supervision, pre-construction preparation, construction process management, completion acceptance and operational warranty.

**Rich project achievements:** CEI has provided advanced technical services for the industries of machinery, construction, electric power, municipal, light industry, automobile, petrochemical, logistics, transportation, electronic communication, environmental protection and intelligent. CEI has completed thousands of engineering consulting, engineering design and engineering general contracting projects;

轻钢结构、消声室、电机试验站、电站计算机自动控制系统、电站计算机自动测试系统、各种非标专用设备、工业密炉及机械化、自动化生产线、一二三级压力容器等。开发建筑信息模型（BIM）技术应用，绿色建筑、智能制造、装配式建筑等的发展与应用。荣获国家科技进步及优秀工程设计金、银、铜奖 50 余项、得到了国家领导人的肯定和行业同仁的赞誉。

企业文化深厚 中电院定位于工程技术研发中心和工程总承包企业的技术支撑与服务平台，致力于打造研发、设计、总包“三位一体”的科技型工程公司。以“送人类光明温暖，还自然碧水蓝天”为企业使命，秉承“务实进取，改革求变，以人为本，合作共赢”的核心价值观，以高端技术力量和强大的工程集成能力，竭诚为各国家和地区的项目业主提供工程建设全过程服务。

developed nearly 100 pieces of special equipment and production lines; actively expanded and successfully completed a number of overseas projects. CEI has made significant contributions to the development planning and achievement of various industries at home and abroad, and has won the trust and satisfaction of users.

Continuous innovation in science and technology: CEI actively tracks and studies the technological developments in the business field and has a number of patented technologies to ensure the advancement of technology. CEI have varieties of proprietary patents, include joint processing equipment and materials, new building materials, light steel structures, anechoic chambers, motor test stations, power station computer automatic control systems, power station computer automatic test systems, various non-standard special Equipment, industrial ovens and mechanized, automated production lines, one or two pressure vessels. Development of Building Information Model (BIM) technology applications, development and application of green building, intelligent manufacturing, and fabricated buildings. CEI was awarded more than 50 national scientific and technological progress and excellent engineering design gold, silver and bronze awards, and was recognized by the national leaders and praised by industry colleagues.

Profound corporate culture: CEI is positioned as a technical support and service platform for engineering technology research and development center and engineering general contracting companies. CEI is committed to building a “three-in-one” technology engineering company with R&D, design and general contracting. With the mission of “sending the warmth of human, return the natural blue water and blue sky”, CEI is committed to the core values of “pragmatic and enterprising, reform and change, people-oriented, cooperation and win-win”, and with high-end technical strength and strong engineering integration capabilities. CEI dedicated to provide project construction services for project owners in various countries and regions.

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## 标准 Standards

### 1. 主持制定或参与的标准

序号 No.	标准编号 Encoding	标准名称 Name
1	GB 16895.4-1997	建筑物电气装置 第 5 部分：电气设备的选择和安装 第 53 章：开关设备和控制设备 Electrical installations of buildings - Part 5: Selection and installation of electrical equipment - Part 53: Switching and control equipment
2	GB/T 16895.9-2000	建筑物电气装置 第 7 部分：特殊装置或场所的要求 第 707 节：数据处理设备用电气装置的接地要求 Electrical equipment in buildings - Part 7: Requirements for special installations or locations - Section 707: Electrical requirements for electrical installations for data processing equipment
3	GB/T 18379-2001	建筑物电气装置的电压区段 Voltage section of the electrical installation of buildings
4	GB/T 13870.3-2003	电流对人和家畜的效应 第 3 部分：电流通过家畜躯体的效应 Effects of electric current on humans and domestic animals - Part 3: Effects of electric currents through livestock bodies
5	GB 16895.22-2004	建筑物电气装置 第 5-53 部分：电气设备的选择和安装 - 隔离、开关和控制设备 第 534 节：过电压保护电器 Electrical installations of buildings - Part 5-53: Selection and installation of electrical equipment - Isolation, switching and control equipment Section 534: Overvoltage protection
6	GB 16895.24-2005	建筑物电气装置 第 7-710 部分：特殊装置或场所的要求 - 医疗场所 Electrical installations of buildings - Part 7-710: Requirements for special installations or locations - Medical premises
7	GB 16895.25-2005	建筑物电气装置 第 7-711 部分：特殊装置或场所的要求 - 展览馆、陈列室和展位 Electrical installations of buildings - Part 7-711: Requirements for special installations or locations - Exhibition halls, showrooms and booths
8	GB 16895.26-2005	建筑物电气装置 第 7-740 部分：特殊装置或场所的要求 - 游乐场和马戏场中的构筑物、娱乐设施和棚屋 Electrical installations of buildings - Part 7-740: Requirements for special installations or establishments - Structures, recreational facilities and shacks in playgrounds and circus
9	GB/T 17045-2008	电击防护 装置和设备的通用部分 Electric shock protection Part: the general part of the device and equipment
10	GB/T 13870.1-2008	电流对人和家畜的效应 第 1 部分：通用部分 The effect of current on people and livestock Part 1: General
11	GB/T 16895.1-2008	低压电气装置 第 1 部分：基本原则、一般特性评估和定义 Low-voltage electrical installations - Part 1: Basic principles, general characteristics assessment and definition
12	GB/T 16895.32-2008	建筑物电气装置 第 7-712 部分：特殊装置或场所的要求 太阳能光伏 (PV) 电源供电系统 Building electrical installations Part 7-712: Requirements for special installations or locations Solar photovoltaic (PV) power supply systems
13	GB 16895.29-2008	建筑物电气装置 第 7-713 部分：特殊装置或场所的要求 家具 Electrical installations of buildings - Part 7-713: Requirements for special installations or establishments
14	GB 16895.28-2008	建筑物电气装置 第 7-714 部分：特殊装置或场所的要求 户外照明装置 Electrical installations of buildings - Part 7-714: Requirements for special installations or locations
15	GB 16895.30-2008	建筑物电气装置 第 7-715 部分：特殊装置或场所的要求 特低电压照明装置 Electrical installations of buildings - Part 7-715: Requirements for special installations or locations
16	GB 16895.31-2008	建筑物电气装置 第 7-717 部分：特殊装置或场所的要求 移动的或可搬运的单元 Building electrical installations Part 7-717: Requirements for special installations or locations Mobile or transportable units
17	GB/T 2900.71-2008	电工术语 电气装置 Electrical terminology - Electrical installation
18	GB/T 2900.73-2008	电工术语 接地与电击防护 Electrical terminology - Grounding and shock protection

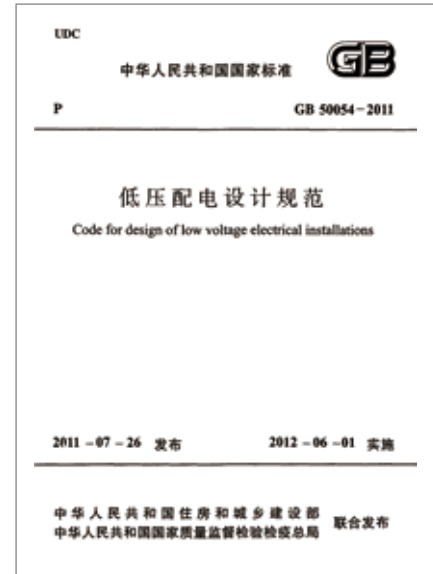


序号 No.	标准编号 Encoding	标准名称 Name
19	GB 16895.7-2009	低压电气装置 第 7-704 部分：特殊装置或场所的要求 施工和拆除场所的电气装置 Low-voltage electrical installations Part 7-704: Requirements for special installations or locations Electrical installations for construction and demolition
20	GB/T 16895.10-2010	低压电气装置 第 4-44 部分：安全防护 电压骚扰和电磁骚扰防护 Low-voltage electrical installations - Part 4-44: Safety protection - Voltage disturbance and electromagnetic disturbance protection
21	GB/T 16895.18-2010	建筑物电气装置 第 5-51 部分：电气设备的选择和安装 通用规则 Electrical installations of buildings - Part 5-51: Selection and installation of electrical equipment General rules
22	GB 16895.14-2010	建筑物电气装置 第 7-703 部分：特殊装置或场所的要求 装有桑拿浴加热器的房间和小间 Electrical installations of buildings - Part 7-703: Requirements for special installations or establishments, rooms and small rooms with sauna heaters
23	GB 16895.27-2012	低压电气装置 第 7-705 部分：特殊装置或场所的要求 农业和园艺设施 Low-voltage electrical installations - Part 7-705: Requirements for special installations or establishments
24	GB 16895.8-2010	低压电气装置 第 7-706 部分：特殊装置或场所的要求 活动受限制的可导电场所 Low-voltage electrical installations Part 7-706: Requirements for special installations or locations
25	GB 16895.21-2011	建筑物电气装置 第 4-41 部分：安全防护 电击防护 Electrical installations of buildings - Part 4-41: Safety protection
26	GB 16895.5-2012	低压电气装置 第 4-43 部分：安全防护 过电流保护 Low-voltage electrical installations - Part 4-43: Safety protection
27	GB/T 16895.23-2012	低压电气装置 第 6 部分：检验 Low-voltage electrical installations - Part 6: Inspection
28	GB 16895.13-2012	低压电气装置 第 7-701 部分：特殊装置或场所的要求 装有浴盆和淋浴的场所 Low-voltage electrical installations - Part 7-701: Requirements for special installations or establishments
29	GB/T 16895.6-2014	低压电气装置 第 5-52 部分：电气设备的选择和安装 布线系统 Low-voltage electrical installations - Part 5-52: Selection and installation of electrical equipment
30	GB/T 13870.2-2016	电流通过人体的效应 第二部分：特殊情况 The effect of current through the human body Part II: Special circumstances
31	GB/T 13870.5-2016	电流对人和家畜的效应 第 5 部分：生理效应的接触电压阈值 Effects of currents on humans and domestic animals - Part 5: Contact voltage thresholds for physiological effects
32	GB/T 13870.4-2017	电流对人和家畜的效应 第 4 部分：雷击效应 Effects of currents on humans and domestic animals - Part 4: Lightning effect
33	GB 16895.2-2017	建筑物电气装置 第 4-42 部分：安全防护 - 热效应保护 Electrical installations of buildings - Part 4-42: Safety protection - Thermal effect protection
34	GB 16895.3-2017	低压电气装置 第 5-54 部分：电气设备的选择和安装 接地配置、保护导体和保护联结导体 Low-voltage electrical installations - Part 5-54: Selection and installation of electrical equipment Grounding arrangements, protective conductors and protective junction conductors
35	GB 16895.20-2017	低压电气装置 第 5-55 部分：电气设备的选择和安装 其他设备 Low-voltage electrical installations - Part 5-55: Selection and installation of electrical equipment
36	GB 16895.33-2017	低压电气装置 第 5-56 部分：电气设备的选择和安装 安全设施 Low-voltage electrical installations - Part 5-56: Selection and installation of electrical equipment
37	GB 16895.19-2017	建筑物电气装置 第 7 部分：特殊装置或场所的要求 第 702 节：游泳池和其他水池 Electrical installations of buildings - Part 7: Requirements for special installations or locations - Section 702: Swimming pools and other pools
38	GB/T 16895.34-2018	低压电气装置 第 7-753 部分：特殊装置或场所的要求 加热电缆及埋入式加热系统 Low-voltage electrical installations Part 7-753: Requirements for special installations or locations Heating cables and embedded heating systems

## 2. 标准应用范围

中电院负责 IEC-TC64 （国际电工技术委员会建筑物电气装置）中国技术委员会的归口工作； 负责主编部分国家电力规范及机械行业规范。

CEI is responsible for IEC-TC64 (International Electrotechnical Commission Building Electrical Installations) the centralized work of the China Technical Committee



# 机械工业勘察设计研究院有限公司

China Jikan Research Institute of Engineering Investigations and Design Co., Ltd.

**公司名称：机械工业勘察设计研究院有限公司**

**Company Name: China Jikan Research Institute of Engineering Investigations and Design Co., Ltd.**

机械工业勘察设计研究院有限公司，位于“一带一路”的起点——古都西安，成立于1952年，现有800余名专业人员，4名“全国工程勘察设计大师”，170多位高级工程师，承担了国家级、省部级150余项重大科研项目，主编或编审了60余种规范、规程、手册，荣获省部级及以上科技进步奖、科技成果奖、优秀工程奖230余项。

现已形成工程勘察、测绘工程、工程设计、工程检测、工程承包、环境工程的全产业链条，能为业主提供与工程建设相关的全方位、全过程综合服务。

在中国31个省、市、自治区累计完成了20000余项各类工程建设任务，业绩已遍及亚洲、欧洲、非洲、美洲、大洋洲等60多个国家和地区，建立了安哥拉、委内瑞拉、柬埔寨、喀麦隆、老挝、印度尼西亚、斯里兰卡、赞比亚等一批海外基地。

Founded in 1952 and based in Xi'an, the ancient capital where the Silk Road starts, China Jikan Research Institute of Engineering Investigations and Design Co., Ltd., currently has over 800 professionals, including four state-certified Engineering Design Masters and more than 170 senior engineers. As one of China's Top 100 Engineering Investigation and Design Enterprises with comprehensive strength, JK Institute has undertaken over 150 national and provincial major scientific research projects, edited and reviewed over 60 specifications, procedures and manuals, and has been awarded over 230 prizes, such as Science and Technology Progress Award, Science and Technology Achievement Award and Outstanding Engineering Award.

With a complete industry chain of engineering investigation, surveying and mapping engineering, engineering designing, engineering testing, engineering contracting and environmental engineering, JK Institute provides all-round, whole-process services regarding engineering and construction.

JK Institute has completed over 20,000 engineering and construction projects in 31 provinces, cities and autonomous regions in China, expanded footprints to more than 60 countries and regions in Asia, Europe, Africa, America and Oceania, and built bases in Angola, Venezuela, Cambodia, Cameroon, Laos, Indonesia, Sri Lanka, and Zambia.

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## 标准 Standards

### 主持制定或参与的主要标准



1. 《建筑基桩检测技术规范》JGJ 106—2014  
Technical code for testing of building foundation piles.  
本规范适用于建筑工程基桩的承载力和桩身完整性的检测与评价。  
Used for pile bearing capacity and integrity test and evaluation.



2. 《建筑地基检测技术规范》JGJ 340—2015  
Technical code for testing of building foundation soils.  
本规范适用于建筑地基性状及施工质量的检测和评价。  
Used for Foundation property and quality test and evaluation.



3. 《市政工程勘察规范》CJJ 56—2012  
Code for geotechnical investigation of municipal engineering projects.  
本规范适用于城市道路、桥涵、隧道、室外管道、给排水厂站、堤岸等建设项目的岩土工程勘察。  
Used for Engineering investigation of city road, bridge, tunnel, pipeline, water station, bank projects.



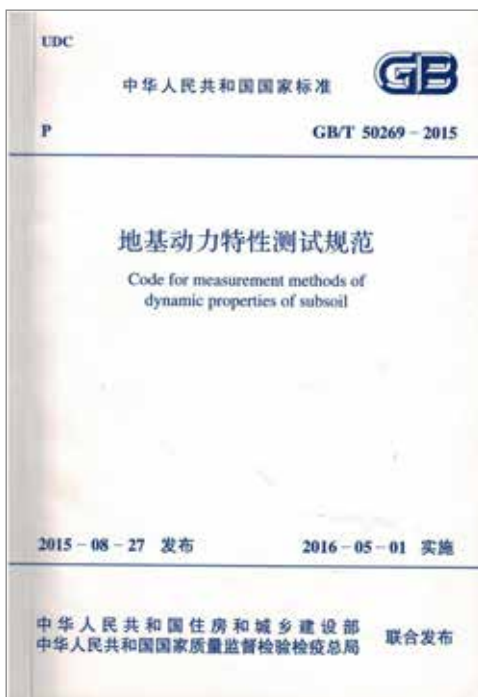
4. 《工程测量基本术语标准》GB/T 50228—2011  
Standard for foundational terminology of engineering survey.  
本标准适用于工程测量及其有关应用领域。  
Used for engineering mapping and related projects.



5. 《建筑基坑支护技术规程》JGJ 120—2012  
Technical specification for retaining and protection of building foundation excavations  
本规程适用于一般地质条件下临时性建筑基坑支护的勘察、设计、施工、检测、基坑开挖与监测。  
Used for investigation, design, construction, testing, excavation and monitoring of temporary foundation pit supports in general conditions.



6. 《盐渍土地建筑技术规范》GB/T 50942—2014  
Technical code for building in saline soil regions  
本规范适用于盐渍土地建筑工程的勘察、设计、施工、质量检测与维护。  
Used for investigation, design, construction, quality test and maintaining in salinized soil site.



7. 《地基动力特性测试规范》GB/T 50269—2015  
Code for measurement methods of dynamic properties of subsoil  
本规范适用于各类建筑物和构筑物的天然地基和人工地基的动力特性测试。  
Used for dynamic property test on natural foundation and artificial foundation of various structures.



8. 《建筑地基处理技术规范》JGJ 79—2012  
Technical Code for Ground Treatment of Buildings  
本规范适用于建筑工程地基处理的设计、施工和质量检验。  
Used for design and construction and quality test of foundation treatment.



9. 《高层建筑岩土工程勘察标准》 (JGJ/T 72-2017)  
Standard for geotechnical investigation of tall building  
本标准适用于高层建筑和高耸结构的岩土工程勘察。  
Used for geotechnical investigation of tall building of tall building or structure.



10. 《湿陷性黄土地区建筑标准》 (GB50025-2018)  
Standard for building construction in collapsible loess regions  
本标准适用于湿陷性黄土地区建筑工程勘察、设计、施工、检验、使用与维护。  
Used for building construction in collapsible loess regions, including investigation, design, construction, test and operation.

# 哈尔滨电站设备成套设计研究所有限公司

Introduction of Harbin Power System Engineering & Research Institute CO.,LTD

**公司名称：哈尔滨电站设备成套设计研究所有限公司**

**Company Name: Introduction of Harbin Power System Engineering & Research Institute CO.,LTD**

哈尔滨电站设备成套设计研究所有限公司主要从事电力领域的工程设计、设备监理、技术服务与管理、调试与性能试验、环保技术应用与研发、控制装置的设计与供货等，专注提供电站领域全过程咨询服务。拥有电力行业火力发电、变电工程、送电工程设计资质证书、市政行业热力工程设计资质证书及压力管道设计资格证书。

公司设计队伍近百人，其中六十余人次拥有各类注册执业证书，设计专业配置齐全，人员熟练掌握国内外相关标准，执行能力强。累计完成八十余项火力发电、热电联产、新能源发电、送变电、电站大修以及供热工程项目的设计工作。设计项目遍布二十多个国家和地区。

Introduction of Harbin Power System Engineering & Research Institute CO.,LTD mainly engaged in engineering design, equipment supervision, technical service and management, commissioning and performance testing, environmental technology application and research and development, control device design and supply in the power field, focusing on providing full-process consulting services in the power station field. CHPI has thermal power generation, substation engineering, power transmission engineering design qualification certificate, municipal industry thermal engineering design qualification certificate and pressure pipe design qualification certificate.

The company has a design team of nearly 100 people, of which more than 60 people have registered certificates in various field. The design configuration is completed and personnel are proficient in relevant domestic and international standards and have strong execution capabilities. The company have completed the design work of thermal power plant projects, cogeneration projects, new energy power generation project, power transmission, rehabilitation projects and heating supply projects, which have been distributed in more than 20 countries and regions.

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## 标准 Standards

### 参与的标准 standard of participating in compiling



《建筑振动荷载标准》 标准号 GB/T51228-2017  
Standard for vibration load of buildings No: GB/T51228-2017

本标准适用于机械、冶金、轻工、纺织、建材、石油、化工等行业工业工程常用动力设备振动荷载的确定。

This standard is applicable to the determination of the vibration load of power equipment commonly used in industrial engineering in machinery, metallurgy, light industry, textile, building materials, petroleum, chemical and other industries.

# 天津电气科学研究院有限公司

Tianjin Research Institute of Electric Science Co., Ltd.

**公司名称：天津电气科学研究院有限公司**  
**Company Name: Tianjin Research Institute of Electric Science Co., Ltd.**

天津电气科学研究院有限公司（简称“天津电气院”）是原国家机械工业部直属研究所，现为中国机械工业集团有限公司所属科技型企业，主要从事电气传动自动化系统工程、中小型水力发电设备成套、低压电控配电装置和新能源电控设备的科研开发、生产制造和检测认证。自1954年8月成立以来，在所从事的专业领域取得了数百项科技成果，承接了数千项国内外工程项目，为国家相关行业的技术发展做出了历史性贡献。

2012年9月完成公司制改制后，在新的治理结构下，本着整合资源、统筹发展、转变模式、转型升级的原则，整合经营业务，形成科技产业、科技研发、科技服务经营板块，并提升职能管控水平，以加强整体竞争能力，促进企业规模发展。

**科技产业：**具有大型工程承包和设备成套的技术能力和丰富经验，为重型装备、能源电力、智能电气、节能环保和船舶海工等相关行业提供全方位的解决方案，并以技术先进、性能可靠在国内外客户中赢得了广泛的赞誉。

**科技研发：**借助电气传动国家工程研究中心、国家能源中小水电设备重点实验室、天津市配电自动化工程技术研究中心，致力于所从事行业应用技术的研究开发和产业化，成果卓著。

**科技服务：**以全国低压成套开关设备和控制设备标准化技术委员会、全国变频调速设备标准化技术委员会、全国水轮机标准化技术委员会控制设备分标委会、能源行业小水电机组标准化技术委员会、中国电工技术学会电控系统与装置委员会、中国自动化学会电气自动化委员会以及中国电器工业协会电控配电分会、水电设备分会及变频器分会等社会公益性组织为依托，以国家电控配电设备质量监督检验中心、机械工业中小型水力发电设备质检中心、国家级科技企业孵化器和天津市电气节能产业孵化器为平台，服务行业技术进步。

Tianjin Research Institute of Electric Science Co., Ltd.(TRIED) was an institute directly under the former Ministry of Machine Building, now is a science and technology enterprise owned by China National Machinery Industry Corporation, mainly going into the R & D, manufacture and certification of electric drive & automation system engineering, LV electric control & distribution device, medium & small size hydropower complete equipment, and new energy electric control installation. Since established in August 1954, TRIED has made hundreds of science and technology achievements in the engaged industries, undertaken the thousands of engineering projects home and abroad, and achieved outstanding contributions to national technology improvement and development in mentioned industries.

In September 2012, TRIED completed the reformation of modernization corporation. Under the new governance structure, TRIED integrates the businesses and forms business fields of industry, R & D and service. Based on the principle of resource integration, development coordination, mode

change, transformation and promotion, TRIED strengthens the management and control to promote overall competitiveness and advance scale development.

**Industry:** With the rich experience and technical capability of large-scale project construction and equipment complete sets, TRIED supplies comprehensive solutions for related industries, such as duty industrial equipment, energy & electricity, intelligent electric, marine & ocean engineering, energy conservation & environment protection etc., and enjoys high client reputation home and abroad owing to its advanced technology and reliable quality.

**R & D:** With the platforms of National Engineering Research Center of Electric Drive, National Energy Key Laboratory of Small and Medium Sized Hydropower Equipment, Tianjin Distribution Automation Engineering Technology Research Center, TRIED devotes to the research, development and industrialization of engaged industries and wins remarkable results.

**Service:** With National Technical Committee for Standardization of LV Switchgear and Control Equipment, National Technical Committee for Standardization of Variable Frequency Speed Regulation Equipment, Control Equipment Branch, National Technical Committee for Standardization of Hydraulic Turbine, Technical Committee for Standardization of Energy Industry of Small Hydropower Units, Electric Control System and Device Professional Committee, China Electro technical Society, Electric Automation Professional Committee, China Automation Society, and Electric Control and Distribution Equipment Branch, Hydro Power Equipment Branch and Converter Branch, China

Electrical Equipment Industry Association etc. non-profit organizations, by means of National Quality Supervision & Test Center of Electric Control & Distribution Equipment, Machine Building Quality Supervision & Test Center of Medium-and-Small Size Hydropower Equipment, National Incubator of Science and Technology Enterprise and Tianjin Incubator of Electric Energy Conservation Industry etc. Incubator, TRIED serves the industry technology progress.

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## 标准 Standards



### 1. 机床专用变频调速设备

本标准规定了机床专用变频调速设备的设计、应用条件、技术要求、检验与判定、包装与贮存。

本标准适用于额定输入电压为交流 1 kV 等级及以下，额定输入频率为 50 Hz 或 60 Hz，输出电压不大于 1 kV，输出频率小于 600 Hz 的机床用变频调速设备（以下简称“调速设备”）。

#### Variable-frequency drive for machine tool

This standard specifies the design, application conditions, technical requirements, inspection and determination, packaging and storage of variable frequency drive for machine tool.

This standard is applicable to variable frequency drive for machine tool with rated input voltage of 1 kV AC and below, rated input frequency of 50 Hz or 60 Hz, output voltage not exceeding 1 kV, and output frequency less than 600 Hz. (hereinafter referred to as "regulating speed equipment")



### 2. 注塑机专用变频调速设备

本标准规定了用于塑料注射成型机专用变频调速设备的分类、使用条件、技术要求、试验项目及标志、包装、运输与贮存。

本标准适用于额定输入电压为交流 1 kV 等级及以下，额定输入频率为 50 Hz 或 60 Hz，输出电压不大于 1 kV，输出频率小于 600 Hz 的注塑机用变频调速设备（以下简称“调速设备”）。

#### Variable-frequency drive for injection molding machine

This standard specifies the classification, use conditions, technical requirements, test items and signs, packaging, transportation and storage of variable frequency drive for injection molding machine.

This standard is applicable to variable frequency drive for injection molding machine with rated input voltage of 1 kV AC and below, rated input frequency of 50 Hz or 60 Hz, output voltage not exceeding 1 kV, and output frequency less than 600 Hz. (hereinafter referred to as "regulating speed equipment")



### 3. 1kV 及以下通用变频调速设备 第 3 部分: 安全规程

GB/T 30844 的本部分规定了通用变频调速设备或其元件有关电气、热和能量等除供电电源以外安全方面的要求。本部分不覆盖用于牵引和电动车辆的变频调速设备、电动机等。

本部分适用于额定输入电压为交流 1 kV 等级及以下, 额定输入频率为 50 Hz 或 60 Hz, 输出电压不超过 1 kV, 输出频率小于 600 Hz 的通用变频调速设备(以下简称“变频调速设备”)。

#### Variable-frequency drive of 1kV and below—Part 3: Safety requirements

This part of GB/T 30844 specifies the safety requirements of the general variable frequency regulating speed equipment or its components in addition to the power supply, such as electrical, thermal and energy. This part does not cover variable frequency regulating speed equipment, motors, etc. for traction and electric vehicles.

This part is applicable to the general variable frequency regulating speed equipment with rated input voltage of 1 kV AC and below, rated input frequency of 50 Hz or 60 Hz, output voltage not exceeding 1 kV, output frequency less than 600 Hz (hereinafter referred to as "variable frequency regulating speed equipment").



### 4. 1kV 以上不超过 35kV 的通用变频调速设备 第 3 部分: 安全规程

GB/T 30843 的本部分规定了通用变频调速设备或其元件有关电气、热和能量等除供电电源以外安全方面的要求。本部分不覆盖用于牵引和电动车辆的变频调速设备、电动机等。

本部分适用于额定输入电压在交流 1 kV ~ 35 kV 之间, 额定输入频率为 50 Hz 或 60 Hz, 输出电压不超过 35 kV, 输出频率小于 120 Hz 的通用变频调速设备(以下简称“变频调速设备”)。

#### Variable-frequency drive above 1kV and not exceeding 35kV—Part 3: Safety requirements

This part of GB/T 30843 specifies the safety requirements of the general variable frequency regulating speed equipment or its components in addition to the power supply, such as electrical, thermal and energy. This part does not cover variable frequency regulating speed equipment, motors, etc. for traction and electric vehicles.

This part is applicable to the general variable frequency regulating speed equipment with rated input voltage between 1 kV and 35 kV AC, rated input frequency of 50 Hz or 60 Hz, output voltage not exceeding 35 kV, output frequency less than 120 Hz (hereinafter referred to as "variable frequency regulating speed equipment").



### 5. 冶金用变频调速设备

本标准规定了冶金用变频调速设备的分类与额定值、使用条件、技术要求、试验项目及标志包装、运输与贮存。

本标准适用于额定输入电压为交流 1 kV 等级及以下，额定输入频率为 50 Hz 或 60 Hz，输出电压 1 kV 及以下，输出频率小于 300 Hz 的高性能、重载型变频调速设备。

#### Variable-frequency drive for metallurgical industry

This standard specifies the classification and rating, service conditions, technical requirements, test items, packaging, transportation and storage of variable-frequency drive for metallurgical industry.

This standard is applicable to high-performance, heavy-duty variable frequency regulating speed equipment with rated input voltage of 1 kV AC and below, rated input frequency of 50 Hz or 60 Hz, output voltage of 1 kV and below, and output frequency less than 300 Hz.

### 6. 调速电气传动系统 第 8 部分：功率接口的电压规范

GB/T 12668 的本部分给出了确定电气传动系统（PDS）功率接口电压的方法。

注：GB/T 12668 系列标准中，功率接口定义为用于在 PDS 的变流器和电动机之间传输电功率的电力连接。

本部分适用于确定变流器以及电动机端子的相对相电压（线电压）和相对地电压（相电压）。

在本部分的第一版中，这些指导意见仅限于三相输出的下列拓扑结构：

- 电压源型的间接变流器，网侧变流器为单相二极管整流器；
- 电压源型的间接变流器，网侧变流器为三相二极管整流器；
- 电压源型的间接变流器，网侧变流器为三相有源整流器。

本部分所指的逆变器都是脉冲宽度调制型的，每个输出电压脉冲的宽度是根据实际需求的电压变化的。

本部分不包括其他拓扑结构的电压规范。

安全方面的要求在国标《调速电气传动系统》的第 5 部分中给出，不包含在本部分中。电磁兼容方面的要求在国标《调速电气传动系统》的第 3 部分中给出，也不包含在本部分中。

#### ADJUSTABLE SPEED ELECTRICAL POWER DRIVE SYSTEMS –

##### Part 8: Specification of voltage on the power interface

This part of IEC 61800 gives the guidelines for the determination of voltage on the power interface of power drive systems (PDS's).

NOTE The power interface, as defined in the IEC 61800 series, is the electrical connection used for the transmission of the electrical power between the converter and the motor(s) of the PDS.

The guidelines are established for the determination of the phase to phase voltages and the phase to ground voltages at the converter and at the motor terminals.

These guidelines are limited in the first issue of this document to the following topologies with three phase output

- indirect converter of the voltage source type, with single phase diode rectifier as line side converter;
- indirect converter of the voltage source type, with three phase diode rectifier as line side converter;
- indirect converter of the voltage source type, with three phase active line side converter.

All specified inverters in this issue are of the pulse width modulation type, where the individual output voltage pulses are varied according to the actual demand of voltage versus time integral.

Other topologies are excluded of the scope of this International Specification.

Safety aspects are excluded from this Specification and are stated in IEC 61800-5 series. EMC aspects are excluded from this Specification and are stated in IEC 61800-3.







#### 7. 调速电气传动系统 第 7-201 部分：电气传动系统的通用接口和使用规范 1 型规范说明

GB/T 12668《调速电气传动系统》的本部分明确说明了电气传动系统 (PDS) 的应用规范，并使用通用接口模型说明其与现有通信系统的映射关系。

ADJUSTABLE SPEED ELECTRICAL POWER DRIVE SYSTEMS – Part 7-201: Generic interface and use of profiles for power drive systems – Profile type 1 specification

This part of IEC 61800 specifies profile type 1 for power drive systems (PDS). Profile type 1 can be mapped onto different communication network technologies.

The functions specified in this part of IEC 61800 are not intended to ensure functional safety. This requires additional measures according to the relevant standards, agreements and laws.



#### 8. 调速电气传动系统 第 7301 部分 电气传动系统的通用接口和使用规范 1 型规范对应至网络技术

国家标准 GB/T 12668《调速电气传动系统》的第 7301 部分明确说明 1 型规范 (CiA 402) 对应不同网络技术的映射关系。

GB/T 12668.7 中本部分说明的功能并不确保功能安全。根据相关标准、协定和法律，功能安全需要采取附加措施。

—CANopen，见第 5 章；

—CC-Link IE Field，见第 6 章；

—EPA，见第 7 章；

—EtherCAT，见第 8 章；

—ETHERNET Powerlink，见第 9 章。

POWER DRIVE SYSTEMS – Part 7-301: Generic interface and use of profiles for power drive systems – Mapping of profile type 1 to network technologies

This part of IEC 61800 specifies the mapping of the profile type 1 (CiA 402) specified in IEC 61800-7-201 onto different network technologies.

The functions specified in this part of IEC 61800-7 are not intended to ensure functional safety. This requires additional measures according to the relevant standards, agreements and laws.

— CANopen, see Clause 5;

— CC-Link IE Field, see Clause 6;

— EPA, see Clause 7;

— EtherCAT, see Clause 8;

— ETHERNET Powerlink, see Clause 9.





#### 9. 电气控制设备

本标准规定了电气控制设备的术语和定义、使用条件及设计、制造和试验的基本要求。

本标准适用于额定电压交流不超过 1 000 V，或直流额定电压不超过 1 500 V 的电气控制设备（以下简称电控设备或设备）。

本标准适用于装有电子器件或不装电子器件电控设备。

#### Electrical control assemblies

This standard specifies the terms and definitions, service conditions, basic requirements for design, manufacture and test for electrical control assemblies.

This standard applies to electrical control assemblies( the term ASSEMBLIES is used for electrical control assemblies) for which the rated voltage does not exceed 1 000 V in case of a.c. or 1 500 V in case of d.c..

This standard applies to electrical assemblies with or without electric devices.



#### 10. 低压成套开关设备和电控设备基本试验方法

本标准规定了低压成套开关设备和控制设备（以下简称成套设备）型式试验和出厂试验的基本方法。

本标准适用于 GB/T 7251.1—2013 和 GB/T 3797 所规定的试验项目。

#### Basic testing method for low-voltage switchgear and controlgear assemblies

This standard specifies basic type test and routine test methods for low-voltage switchgear and controlgear assemblies (hereafter called ASSEMBLIES).

This standard applies to testing terms that are covered by GB/T 7251.1—2013 and GB/T 3797.



#### 11. 风力发电导电轨(密集型母线槽)

本标准规定了密集型风力发电导电轨系统(以下简称风电母线槽)的术语和定义、使用条件、技术要求、型式试验方法及判定条件、出厂检验、包装运输和贮存方法等。

本标准适用于额定电压交流不超过 1 000 V、频率为 50 Hz 或 60 Hz 的风电母线槽。本标准规定的密集型母线槽适用于风机塔筒内或风机机舱内。

Busbar trunking systems(closed insulated busbar) for wind power

This standard specifies the definitions, and states the service conditions, technical requirements, type-test methods and decision conditions, routine tests, transport and storage for busbar trunking systems (closed insulated busbar) for wind power.

This standard applies to busbar trunking systems for wind power for which the rated voltage does not exceed 1 000 V a.c. or 1 500 V d.c. Closed insulated busbar covered by this standard is used inside wind turbine tower or nacelle.

#### 12. 封闭式低压成套开关设备和控制设备在内部故障引起电弧情况下的试验导则

本标准对成套设备由于内部故障在空气中引起电弧情况下的试验方法给予指导。这一试验目的是评估成套设备限制由内部电弧故障引起人身伤害、成套设备损坏风险和继续使用适用性的能力。

本标准提供的试验程序仅适用于：

——符合 GB/T 7251.12 (成套电力开关和控制设备 PCS 成套设备)的封闭式、落地式或壁挂式低压成套开关设备和控制设备。

——成套设备的门和盖板关闭并正确固定的情况。

当用户和制造商就不同的或更恶劣情况下的试验达成协议时，

本标准可作为指导文件。

本标准给出的试验程序应考虑：

——作用在盖板、门等上面的内部过压力的影响；

——电弧或弧根作用到外壳上的热效应及喷射出的热气体和发光粒子的热效应。

本标准给出的试验程序不包含：

——能够成危险的其他效应，如有毒气体和噪声；

——维护工作期间、开门或相似的情况；

——接近成套设备顶部和底部。

该试验是制造商自愿进行的试验。

Enclosed low-voltage switchgear and controlgear assemblies—Guide for testing under conditions of arcing due to internal fault

This standard gives guidance on the method of testing of ASSEMBLIES under conditions of arcing in air due to internal fault.

The purpose of this test is to assess the ability of the assembly to limit the risk of personal injury, damage of ASSEMBLIES and its suitability for further service as a result of an internal arcing fault.

The test procedure given in this standard applies only:

to enclosed, floor-standing or wall-mounted low-voltage switchgear and controlgear assemblies according to GB/T 7251.12(power switchgear and controlgear assemblies PSC ASSEMBLIES);

to situations when doors and covers of the ASSEMBLIES are closed and correctly secured.

When tests under different or more severe conditions are agreed between the user and the manufacturer, this standard can be used as a guide.

The test procedure given in this standard takes into consideration:

the effects of the internal overpressure acting on covers, doors, etc.;

the thermal effects of the arc or its roots on the enclosures and of ejected hot gases and glowing particles.

The test procedure given in this standard does not cover:

other effects which can constitute a risk, such as toxic gases and loud noises;

conditions during maintenance work, open doors or similar;

access to the top and bottom of the ASSEMBLIES.

This is a voluntary test made at the discretion of the manufacturer.





### 13. 低压抽出式成套开关设备和控制设备主电路用接插件

本标准规定了低压抽出式成套开关设备和控制设备主电路用接插件的型号和分类、使用条件、技术要求和试验方法等。

本标准适用于额定电压交流不超过 1 000 V、直流不超过 1 500 V 的低压抽出式成套开关设备和控制设备主电路用接插件（以下简称接插件）。

Connectors for low-voltage withdrawable switchgear and controlgear main circuit

This standard specifies the types and classifications, service conditions, technical requirements and testing method for connectors for low-voltage withdrawable switchgear and controlgear main circuit.

This standard applies to connectors for low-voltage withdrawable switchgear and controlgear main circuit (hereafter called connectors) for which the rated voltage does not exceed 1 000 V in case of a.c. and 1 500 V in case of d.c.



### 14. 低压抽出式成套开关设备和控制设备辅助电路用接插件

本标准规定了低压抽出式成套开关设备和控制设备辅助电路用接插件的型号和分类、使用条件、技术要求和试验方法等。

本标准适用于低压抽出式成套开关和控制设备中额定电压交流不超过 380 V、直流不超过 220 V 的辅助电路用接插件（以下简称接插件）。

Connectors for low-voltage withdrawable switchgear and controlgear auxiliary circuit

This standard specifies the types and classifications, service conditions, technical requirements and testing methods for connectors for low-voltage withdrawable switchgear and controlgear auxiliary circuit.

This standard applies to connectors for low-voltage switchgear and controlgear assemblies auxiliary circuit (hereafter called connectors) for which the rated voltage does not exceed 380 V a.c. or 220 V d.c..



15. 低压成套开关设备和控制设备 第3部分：由一般人员操作的配电板（DBO）

本标准定义了由一般人员操作的配电板（DBO）的具体要求。

DBO 具有以下条件：

- 拟由一般人员进行操作（例如开关操作和更换熔断体），例如在民用（家用）的应用中；
- 出线电路包含拟由一般人员操纵、符合下列标准的保护器件，如 IEC 60898-1、IEC 61008、IEC 61009、IEC 62423 和 IEC 60369-3；
- 对地额定电压不超过交流 300 V；
- 出现电路的额定电流（ $I_{nc}$ ）不超过 125 A 且 DBO 的额定电流（ $I_{nA}$ ）不超过 250 A；
- 拟用于电能分配；
- 封闭式，固定式安装；
- 用于户内或户外。

DBO 可包括与电能分配相关的控制和 / 或信号器件。

本标准适用于所有 DBO，无论其实一次性设计、制造和验证的，还是完全标准化批量制造的。

DBO 可在初始制造工厂以外组装。

本标准不适用于符合各自相关产品标准的单独器件和整装元件，例如断路器、刀熔开关、电子设备等。

本标准不适用于包含在 GB/T 7251 其他部分的特定类型成套设备。

Low-voltage switchgear and controlgear assemblies—Part 3: Distribution boards intended to be operated ordinary persons (DBO)

This standard defines the specific requirements for distribution board intended to be operated by ordinary persons (DBO).

DBOs have the following criteria:

- intended to be operated by ordinary persons (e.g. switching operations and replacing fuse-links), e.g. in domestic (household) applications;
- outgoing circuits contain protective devices, intended to be operated by ordinary persons, complying e.g. with IEC 60898-1, IEC 61008, IEC 61009, IEC 62423 and IEC 60269-3;
- rated voltage to earth does not exceed 300 V a.c.;
- rated current ( $I_{nc}$ ) of the outgoing circuits does not exceed 125 A and the rated current ( $I_{nA}$ ) of the DBO does not exceed 250 A;
- intended for the distribution of electrical energy;
- enclosed, stationary;
- for indoor or outdoor use.

DBOs may also include control and/or signaling devices associated with the distribution of electrical energy.

This standard applies to all DBOs whether they are designed, manufactured and verified on a one-off basis or fully standardised and manufactured in quantity.

DBOs may be assembled outside the factory of the original manufacturer.

This standard does not apply to individual devices and self-contained components, such as circuit breakers, fuse switches, electronic equipment, etc. which will comply with the relevant product standards.

This standard does not apply to the specific types of ASSEMBLIES covered by other parts of GB/T 7251.



16. 低压成套开关设备和控制设备 第4部分：对建筑工地用成套设备 (ACS) 的特殊要求

GB/T 7251 的本部分定义了 ACS 的特殊要求：

——额定电压交流不超过 1 000 V 或者直流不超过 1 500 V 的成套设备；

——ACS 中变压器的标称初级电压和标称次级电压在上述规定的限值内；

——计划用于建筑工地，户内和户外，例如公众一般不进入的临时工作场所和建筑施工、安装、修理、地产（建筑物）拆除或变化、土木工程（公共建筑）、挖掘或者任何类似的工作场所；

——可运输的（半固定的）或移动的带外壳的成套设备。

制造和 / 或组装可能由初始制造商以外的制造商实施。

本部分不适用于符合各自产品标准的单独器件和整装的组件，例如电机起动器、熔断开关、电子设备等。

本部分不适用于建筑工地的行政中心（办公室、更衣室、成套设备间、食堂、餐厅、宿舍、卫生间等）使用的成套设备。

依据本部分制造的设备所提供的电气保护要求在 GB/T 16895.7 中给出。

Low-voltage switchgear and controlgear assemblies—Part 4:Particular requirements for assemblies for construction sites(ACS)

This standard defines the specific requirements of ACS as follows:

- ASSEMBLIES for which the rated voltage does not exceed 1 000 V in case of a.c. or 1 500 V in case of d.c.;

-ASSEMBLIES where the nominal primary voltage and the nominal secondary voltage of transformers incorporated in ACS are within the limits specified above;

-ASSEMBLIES intended for use on construction sites, both indoors and outdoors, i.e. temporary places of work to which the public do not generally have access and where building construction, installation, repairs, alteration or demolition of property(buildings) or civil engineering(public works) or excavation or any other similar operations are carried out;

-transportable (semi-fixed) or mobile ASSEMBLIES with enclosure.

The manufacture and /or assembly may be carried out other than by the original manufacturer.

This standard does not apply to individual devices and self-contained components, such as motor starters, fuse switches, electric equipment, etc. which will comply with the relevant product standards.

This standard does not apply to ASSEMBLIES for use in the administrative centers of construction sites (offices, cloakrooms, ASSEMBLY rooms, canteens, restaurants, dormitories, toilets, etc.).

Requirements for electrical protection provided by equipment manufactured according to this standard are given in GB/T 16895.7.



17. 低压成套开关设备和控制设备 第5部分: 公用电网电力配电成套设备

GB/T 7251 的本部分规定了公用电网配电成套设备 (PENDA) 的具体要求。

PENDA 符合以下要求:

- 用于额定电压不超过交流 1 000 V 的三相系统的电能分配;
- 固定式的;
- 开启式成套设备不包含在本部分中;
- 适用于安装在仅专业人士可使用的场所, 户外式可安装在普通人员可接近的场所;
- 用于户内或户外。

本部分旨在为 PENDA 说明定义, 规定适用、结构要求、技术特性和试验。电网参数可能要求在较高性能水平下试验。

PENDA 可包括与电能分配相关联的控制和 / 或信号器件。

本部分适用于一次性设计、制造或完全标准化批量制造的所有 PENDA。

进行生产和 / 或组装的可以不是初始制造商 (GB/T 7251.1—2013 的 3.10.1)。

本部分不适用于符合相关产品标准的单独的器件和整装的元件, 如电机起动器、熔断器式开关、电子设备等。

本部分不适用于 GB/T 7251 其他部分所涵盖的特定类型成套设备。

Low-voltage switchgear and controlgear assemblies—Part 5: Assemblies for power distribution in public networks

This standard defines the specific requirements for public electricity network distribution assemblies (PENDAs).

PENDAs have the following criteria:

- used for the distribution of electrical energy in three systems for which the rated voltage does not exceed 1 000 V a.c.;
- stationary;
- open ASSEMBLIES are not covered by this standard;
- suitable for installation in places where only skilled persons have access for their use, however, outdoor types may be installed in situations that are accessible to ordinary persons;
- for indoor or outdoor use.

The object of this standard is to state the definitions and to specify the service conditions, requirements, technical characteristics and tests for PENDAs. Network parameters may require tests at higher performance levels.

PENDAs may also include control and/or signaling devices associated with the distribution of electrical energy.

This standard applies to all PENDAs whether they are designed, manufactured on a one-off basis or fully standardized and manufactured in quantity.

The manufacture and/or assembly may be carried out other than by the original manufacturer (see 3.10.1 of GB/T 7251.1—2013).

This standard does not apply to individual devices and self-contained components, such as motor starters, fuse switches, electronic equipment, etc. which comply with the relevant product standards.

This standard does not apply to specific types of ASSEMBLIES covered by other parts of GB/T 7251 series.





18. 通过计算进行低压成套开关设备和控制设备温升验证的一种方法

本标准规定了通过计算进行低压成套开关设备和控制设备温升验证的一种方法。

这种方法适用于封闭式成套设备或者不带强迫通风的成套设备的分隔式柜架单元，不适用于 GB/T 7251 相关产品标准明确固定了温升验证方法的情形。

推荐的方法意在确定外壳内部的空气温升。

A method of temperature-rise verification of low-voltage switchgear and controlgear assemblies by calculation

This standard specifies a method of temperature-rise verification of low-voltage switchgear and controlgear ASSEMBLIES by calculation.

The method is applicable to enclosed ASSEMBLIES or partitioned sections of ASSEMBLIES without forced ventilation. It is not applicable where temperature rise verification to the relevant product standard of the GB/T 7251 series has been established.

The proposed method is intended to determine the temperature rise of the air inside the enclosure.



19. 低压直流成套开关设备和控制设备

本标准规定了低压直流成套开关设备和控制设备（以下简称直流设备）的术语和定义、产品分类、使用条件、基本参数、安全要求、系统方案、电气性能、设计与结构、试验规则、标志、包装、运输和贮存。

本标准适用于户内正常使用条件下直流额定电压不超过 1 500 V 的直流设备。

本标准适用于电力系统、工矿企业、建筑楼宇、交通、通信等电力工程中的直流设备。

Low-voltage DC switchgear and controlgear assemblies

This standard specifies the terms and definitions, product classifications, service conditions, basic parameters, safety requirements, system programmes, electrical characteristics, design and constructions, test routines, marking, packaging, transport and storage for low-voltage DC switchgear and controlgear assemblies.

This standard applies to indoor DC assemblies under normal service conditions for which the rated voltage does not exceed 1 500 V d.c. .

This standard applies to DC assemblies used in electric power engineering, such as power systems, industrial and mining enterprises, buildings, traffic and communication.





## 20. 湿热带型电控设备

本标准规定了湿热带型电控设备(以下简称设备)的术语和定义、标志、包装、使用环境条件、技术要求、验证。

本标准适用于额定电压交流不超过 1 000 V, 或直流不超过 1 500 V, 在湿热带地区工作的电控设备。

### Damp heat type electrical control assemblies

This standard states the definitions, designation marking, packaging, service conditions, technical requirements and verification for damp heat type electrical control assemblies (hereafter called assemblies).

This standard applies to electrical control assemblies used in humid tropical regions for which the rated voltage does not exceed 1 000 V in case of a.c. or 1 500 V in case of d.c..



## 21. 低压成套开关设备和控制设备 辅件术语

本标准规定了低压成套开关设备和控制设备辅件专用术语, 包括一般术语、产品名称、结构部件、性能、试验与检查等方面的术语。

本标准适用于低压成套开关设备和控制设备辅件产品及其标准制修订、编制技术文件、编写和翻译专业手册, 供从事电气辅件专业工作的生产、科研、使用等相关部门的人员使用。

### Low voltage switchgear and controlgear assemblies-Auxiliary terms

This standard specifies auxiliary terms of low-voltage switchgear and controlgear assemblies, including general terms, product names, structural components, performance, testing and inspections terms.

This standard applies to auxiliary products of low-voltage switchgear and controlgear assemblies and revision of their product standards, compiling technical files, drafting and translating professional manuals, and is also used by personnel of relevant departments, such as the production, scientific research and use, who are engaged in the professional work of auxiliaries.



## 22. TG1 型管状端头

本标准规定了 TG1 型管状裸端头与预绝缘端头的分类、压接工具和导线、技术要求、试验方法、检验规则、标志与包装等。

本标准适用于  $0.5\text{mm}^2 \sim 50\text{mm}^2$  多股圆铜绞线与接线端子连接时，在绞线端剥去绝缘层后与铜导体部分压接的管状端头。

### TG1 type tubular terminal

This standard defines the classifications, crimp tools and conductors, technical requirements, testing methods, verification rules, marking and packaging for TG1 type tubular bare and pre insulated terminals.

This standard applies to the tubular terminals which are crimped to copper conductors after stripping the insulation at the end of the stand, where  $0.5\text{mm}^2 \sim 50\text{mm}^2$  multi-strand round copper wire is connected with terminals.



## 23. 光电开关

本标准规定了光电开关的术语和定义、分类、额定值、正常工作条件、结构和性能要求、试验方法、检验规则、标志、包装、运输与贮存等。

本标准适用于额定电压交流不超过 250 V (50 Hz 或 60 Hz)，或直流不超过 60 V 的工业控制回路使用的光电开关。

### Photoelectric switch

This standard specifies the terms and definitions, classifications, rating values, normal service conditions, constructional and performance requirements, testing methods, verification rules, marking, packaging, transport and storage for photoelectric switch.

This standard applies to photoelectric switches used in industrial control loop for which the rated voltage does not exceed 250 V a.c. (at frequency 50 Hz or 60 Hz), or 60 V d.c..



#### 24. 集成低压无功补偿装置

本标准规定了集成低压无功补偿装置的术语和定义、分类、使用条件、技术要求、试验方法、检验规则、标志、包装、运输和贮存等相关要求。

本标准适用于额定电压交流不超过 1000V（或 1140V），频率不超过 1000Hz，投切时间不大于 1s 的集成低压无功补偿装置。

##### Integrated Low-voltage Reactive Power Compensation Assemblies

This standard specifies the terms and definitions, service conditions, technical requirements, verification rules, marking, packaging, transport and storage for integrated low-voltage reactive power compensation assemblies.

This standard applies to cast resin busways for which the rated voltage does not exceed 1 000 V a.c. (including 1 140 V a.c.) at frequencies not exceeding 1 000 Hz and switching time not exceeding 1 s.



#### 25. 浇注型母线槽

本标准规定了浇注型母线槽的术语和定义、使用条件、要求、试验方法、检验规则、标志、包装、运输、贮存。

本标准适用于额定电压交流不超过 1000V（包括 1140V），直流不超过 1500V 的浇注型母线槽。

##### Cast resin busway

This standard specifies the terms and definitions, service conditions, requirements, verification rules, marking, packaging, transport and storage for cast resin busway.

This standard applies to cast resin busways for which the rated voltage does not exceed 1 000 V a.c. (including 1 140 V a.c.), or 1 500 V d.c..



## 26. 母线槽智能测控系统

本标准规定了母线槽智能测控系统的术语和定义、使用条件、要求、产品资料、试验方法、检验规则、包装、运输、贮存等。本标准适用于具有遥控、遥调、遥测、遥信等智能控制功能，用于额定电压交流不超过 1000V，直流不超过 1500V 的母线槽用母线槽智能测控系统。

Intelligent measurement and control system for busways

This standard specifies the terms and definitions, states the service conditions, requirements, testing methods, verification rules, packaging, transport and storage for intelligent measurement and control system for busways.

This standard applies to intelligent measurement and control system for busways with intelligent control functions such as remote control, remote adjustment, telemetry and tele signalling, for which the rated voltage does not exceed 1 000 V a.c. or 1 500 V d.c..



## 27. 低压抽出式成套开关设备和控制设备

本标准规定了低压抽出式成套开关设备和控制设备（以下简称成套设备）的分类、接口特性、信息、使用条件、结构与性能要求和验证要求等。

本标准适用于固定安装在户内正常使用条件下，额定电压交流不超过 1 000V，直流不超过 1 500V，用于电能分配及电动机控制的抽出式成套开关设备和控制设备。

Low-voltage withdrawable switchgear and controlgear assemblies

This standard states the classifications, interface characteristics, information, service conditions, constructional and performance requirements, and verification requirements of low-voltage withdrawable switchgear and controlgear assemblies.

This standard applies to low-voltage withdrawable switchgear and controlgear assemblies which are fixed indoor under normal service conditions, for which the rated voltage does not exceed 1 000 V in case of a.c. or 1 500 V in case of d.c., and used for the distribution of electrical energy and control of motor.



## 28. 低压固定封闭式成套开关设备和控制设备

本标准规定了低压固定封闭式成套开关设备和控制设备（成套设备）的分类、使用条件、结构和性能要求，设计验证、例行检验、信息及包装、运输和贮存等。

本标准适用于额定电压交流不超过 1 000 V 或额定电压直流不超过 1 500 V，作为电能分配、电动机控制、线路保护，并具有固定连接的封闭式结构户内或户外工作的低压成套开关设备和控制设备。

Low-voltage fixed connection enclosed switchgear and controlgear assemblies

This standard specifies the classification, service conditions, constructional and performance requirements, design verification, routine verification, information, packaging, transport and storage for low-voltage fixed connection enclosed switchgear and controlgear assemblies.

This standard applies to indoor or outdoor low-voltage switchgear and controlgear assemblies with fix-connected enclosed construction which are used for distribution of electrical energy, control of motor and protection of lines, for which the rated voltage does not exceed 1 000 V in case of a.c. or 1 500 V in case of d.c..



## 29. 冷却塔节能用水轮机技术规范

本标准规定了冷却塔节能用水轮机设计、制造、安装、检验验收等的技术要求。

本标准适用于开式机械通风冷却塔中单机流量  $0.056 \text{ m}^3/\text{s} \sim 1.67 \text{ m}^3/\text{s}$  ( $200 \text{ m}^3/\text{h} \sim 6000 \text{ m}^3/\text{h}$ )，与风机直联或通过减速机构连接的内置混流式或外置轴伸贯流式水轮机。

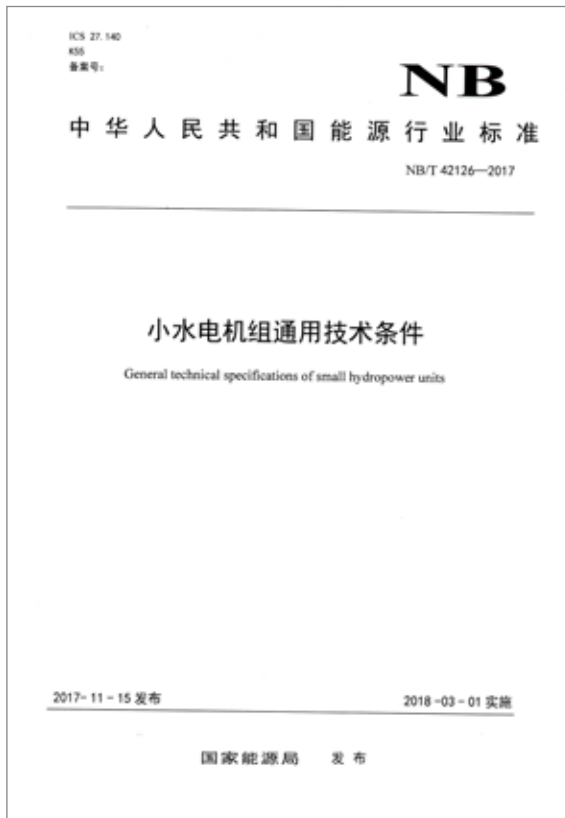
单机流量小于  $0.056 \text{ m}^3/\text{s}$  ( $200 \text{ m}^3/\text{h}$ ) 的机组可参照执行。

Technical specifications for water turbine in cooling tower

This standard specifies the technical requirements for the design, manufacture, installation, inspection and acceptance of water turbine in cooling tower.

This standard is applicable to Francis turbine set inside and propeller water turbine set outside the open type mechanical ventilation cooling tower with single unit flow from  $0.056 \text{ m}^3/\text{s}$  to  $1.67 \text{ m}^3/\text{s}$  ( $200 \text{ m}^3/\text{h}$  to  $6000 \text{ m}^3/\text{h}$ ), which is directly connected with the ventilating fan or connected through the speed reducer mechanism.

The unit with single unit flow less than  $0.056 \text{ m}^3/\text{s}$  ( $200 \text{ m}^3/\text{h}$ ) can be executed by reference.



### 30. 小水电机组通用技术条件

本标准规定了小水电机组（含水轮机、水轮发电机、水轮机控制系统、励磁系统以及监控、保护和直流电源系统）的通用技术条件。

本标准适用于机组额定功率为 0.5 MW ~ 10 MW，转轮直径小于 3.3 m 的混流式、轴流式、斜流式、贯流式及冲击式水轮机；与水轮机直接连接或间接连接，额定容量为 0.625 MVA ~ 12.5 MVA 的立式或卧式（灯泡贯流、抽水蓄能除外）三相 50 Hz 凸极同步水轮发电机（以下简称水轮发电机）；工作容量为 350 N·m ~ 75000 N·m 的水轮机控制系统（电气 / 微机液压组合式调速器以及油压装置）；励磁电流在 500 A 及以下的励磁系统；与此相配套的监控、保护和直流电源系统。功率在 0.1 MW ~ 0.5 MW 之间的小水电机组或频率为 60Hz 的水轮发电机可参照执行。

本标准不适用于孤网运行的小水电机组。

#### General technical specifications of small hydropower units

This standard specifies the general technical conditions of small hydropower units (including water turbine, hydro-generator, governing system, excitation system, monitoring, protection and DC power supply system).

This standard is applicable to:

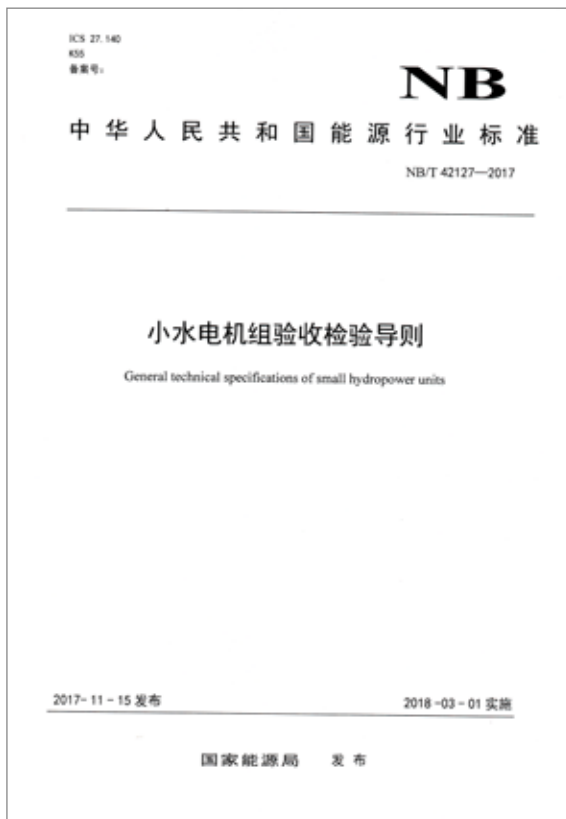
Francis, axial, diagonal, tubular and impulse turbines with rated power from 0.5MW to 10 MW with runner diameter less than 3.3 m;

Vertical or horizontal three-phase 50 Hz salient pole synchronous Hydrogenerator with rated capacity from 0.625MVA to 12.5 MVA(except those for bulb tubular and pumped storage turbines), which is directly or indirectly connected to the turbine (hereinafter referred to as hydrogenerator);

Hydraulic turbine governing system (electric/microcomputer hydraulic combined governor and oil pressure device) with working capacity from 350N.m to 75000N. m; Excitation system with excitation current from 500 A and below; Monitoring, protection and DC power supply system matched with these unit.

Small hydropower units with power from 0.1 MW to 0.5M or hydro generators with frequency of 60 Hz can be executed with reference.

This standard is not suitable for small hydropower units operated in isolated grid.



### 31. 小水电机组验收检验导则

本标准规定了小水电机组工厂检验和现场验收的项目、要求及（检验）试验方法等。

本标准适用于机组额定功率为 0.5MW ~ 10MW 转轮直径小于 3.3m 的混流式、轴流式、斜流式、贯流式及冲击式水轮机；与水轮机直接连接或间接连接，额定容量为 0.625 MVA ~ 12.5 MVA 的立式或卧式（灯泡贯流、抽水蓄能除外）三相 50Hz 凸极同步水轮发电机（以下简称水轮发电机）；工作容量为 350N·m ~ 75000 N·m 的水轮机控制系统（电气 / 液压组合式调速器以及油压装置）；励磁电流在 500A 及以下的励磁系统；与此相配套的监控、保护和直流电源系统。

功率在 0.1MW ~ 0.5MW 之间的小水电机组或频率为 60Hz 的水轮发电机可参照执行。

本标准不适用于孤网运行的小水电机组。

#### Guide for testing and acceptance of small hydropower units

This standard specifies the items, requirements and checkout or test methods for factory inspection and site acceptance of small hydropower units.

This standard is applicable to:

Francis, axial, diagonal, tubular and impulse turbines with rated power from 0.5MW to 10 MW and runner diameter less than 3.3 m;

Vertical or horizontal three-phase 50 Hz salient pole synchronous Hydrogenerator with rated capacity from 0.625MVA to 12.5 MVA(except those for bulb tubular and pumped storage turbines), which is directly or indirectly connected to the turbine (hereinafter referred to as hydrogenerator);

Hydraulic turbine governing system (electric/ hydraulic combined governor and oil pressure device) with working capacity from 350N.m to 75000N. m; Excitation system with excitation current from 500 A and below; Monitoring, protection and DC power supply system matched with these unit.

Small hydropower units with power from 0.1 MW to 0.5M or hydro generators with frequency of 60 Hz can be executed with reference.

This standard is not suitable for small hydropower units operated in isolated grid.



### 32. 小水电机组自动化元件（装置）及其系统基本技术条件

本标准规定了小水电机组及其进水阀门的自动化元件（装置）的使用条件、性能要求、抽样、试验方法、检验及验收规则、标志及包装等要求。

本标准适用于单机容量在 0.5 MW ~ 10 MW（不包括 10 MW），且转轮直径小于 3.3 m 的水电机组及其附属设备的自动化元件（装置）的系统配置和交接验收。

单机容量小于 0.5 MW 的水电机组及其进水阀门可参照执行。

#### Basic specification of automatic control components (devices) and their related system for small hydropower unit

This standard specifies the work conditions, performance requirements, samplings, test methods, inspections and acceptance rules, marking and packaging requirements of automatic components (devices) of small hydropower units and their inlet valves.

This standard is applicable to the system configuration and handover acceptance of automatic components (devices) of hydropower units and their auxiliary equipment with single unit capacity from 0.5MW to 10 MW (excluding 10 MW) with runner diameter less than 3.3 m.

For the hydropower unit with single unit capacity less than 0.5 MW and its water inlet valve, this standard can be executed with reference.





### 33. 水轮机调速系统技术条件

本部分规定了水轮机调速系统的工作条件、技术要求、供货范围和备品备件、图纸与资料、铭牌、包装、运输与存储、保证期等要求。

适用于水轮机调速系统（包括水泵水轮机调速系统）的设计、制造、验收。

#### Specification of hydraulic turbine governing system

This part specifies the working conditions, technical requirements, scope of supply and spare parts, drawings and data, nameplate, packaging, transportation and storage, warranty period and other requirements of the turbine governing system.

It is applicable to the design, manufacture and acceptance of hydraulic turbine governing system (including water pump turbine governing system).



### 34. 水轮机调速系统试验

本部分规定了水轮机调速系统的试验分类、试验项目、试验条件和方法、试验报告的编写要求。

适用于水轮机调速系统（包括水泵水轮机调速系统）的型式试验、出厂试验、电站试验、验收试验、检修后的试验。

#### Testing specification of hydraulic turbine governing system

This part specifies the test classification, test items, test conditions and methods, and preparation requirements of test report for the turbine governing system.

It is applicable to type test, workshop test, power station test, acceptance test and test after maintenance of hydraulic turbine governing system (including water pump turbine governing system).



### 35. 电工术语 水轮机控制系统

本标准规定了水轮机控制系统的、专用术语。

适用于制定水轮机控制方面的标准、编制技术文件及招投标文件，也适用于编写和翻译专业文献、教材及书刊等。

Electro-technical terminology-Control system for hydraulic turbine

This standard specifies the special terms of turbine control system.

It is applicable to the formulation of standards, technical documents and bidding documents for turbine control system, as well as the compilation and translation of professional documents, teaching material and books.

# 中国中元国际工程有限公司

China ippr international engineering co.,ltd

## 公司名称：中国中元国际工程有限公司

Company Name: China ippr international engineering co.,ltd

中国中元国际工程有限公司是集工程咨询、工程设计、工程总承包、项目管理、设备成套、装备制造和技工贸为一体的大型工程公司。

公司具有工程设计综合资质甲级、建筑工程施工总承包壹级、专业承包壹级（电子与智能化工程、建筑装修装饰工程、消防设施工程、建筑机电安装工程）及对外承包工程资格证书及其相关资质，可以承接全行业、各等级的工程设计业务和从事工程设计资质标准划分的建筑、机械、医药、船舶、兵器、市政、商业、化工、能源、建材、轻工等 21 个行业的工程总承包、项目管理等业务及境外工程承包等业务；承接建筑工程施工总承包壹级资质范围内的施工总承包、工程总承包和项目管理业务。

公司具有城乡规划编制、工程监理、工程咨询、工程造价咨询甲级资质；具有压力管道设计资格；具有独立的进出口经营贸易权、对外经济合作资格证书、进出口企业资格证书、自理报关单位注册登记证书、工程招标代理机构资质证书、施工图设计文件审查许可证及建筑装饰工程设计与施工资质证书；公司具有市政行业（载人索道）工程甲级设计资质证书、工程咨询单位（索道工程）、工程咨询单位（索道工程）项目管理和索道工程评估咨询资格证书。

公司现拥有各类人员 3000 余人，其中享受国务院政府特殊津贴人员 30 人，国机集团首席专家 2 人，各学科博士、硕士等 750 余人，高级工程师以上人员 760 余人。公司的组织机构设置有 13 个直属生产单位，3 个技术支撑部门，10 个职能管理部门，在北京、海南、厦门、上海、长春、南京设有 10 个二级法人单位，在广东、安徽、青海、四川、浙江、深圳、西安等地设有分公司。因境外业务发展的需要，公司先后设立了驻乌兹别克斯坦、柬埔寨、多米尼加、古巴等境外办事处。

公司秉承“质量是生命，精心设计、创优工程、诚信服务，保护环境、珍爱生命，是我们对顾客、社会、员工始终不渝的承诺”的管理方针，质量、环境、职业健康安全管理

China IPPR International Engineering Co., Ltd. is a large-scale engineering company that integrates engineering consulting, engineering design, EPC (short for Engineering, Procurement, and Construction), project management, complete equipment sets, equipment manufacturing, and development of technology, industry, and trade.

The company has obtained class-A engineering design integrated qualifications, class-I general contracting qualifications for architectural engineering construction, class-I specialized contracting qualifications (for electronic and intelligent engineering, architectural decoration engineering, fire protection facility engineering, and construction electromechanical installation engineering), and the foreign project contracting qualification certificate and relevant qualifications. The company is capable of undertaking engineering design tasks in all industries and at all levels. It can also undertake EPC, project management, and overseas project contracting tasks in 21 industries that are classified based on engineering design qualification standards, covering construction, machinery, medicine, shipbuilding, weapons, municipal engineering, commerce, chemical engineering, energy, building materials, the light industry, and other industries. Moreover, the company can undertake general contracting tasks for construction and engineering, as well as project management tasks within the scope of class-I general contracting qualifications for architectural engineering construction.

The company has also possessed class-A qualifications for urban and rural planning formulation, engineering supervision, engineering consulting, and engineering cost consulting; qualifications for pressure pipeline design; independent rights to engage in import and export business and trade; a series of certificates, including the foreign economic cooperation qualification certificate, import and export enterprise qualification certificate, customs self-declaration unit registration certificate, engineering bidding agency qualification certificate, construction drawing and design document review license, and qualification certificate for architectural decoration engineering design and construction. In addition, the company has been granted the class-A design qualification certificate for municipal engineering (cableways for transporting people), as well as qualification certificates for the engineering consulting unit (cableway engineering), engineering consulting unit (cableway engineering) project management, and cableway engineering assessment and consulting.

At present, the company has more than 3000 employees, including 30 employees receiving special government allowances of the state council, two chief experts of Sinomach, 750 doctors and masters of

体系健全，数十年来一直跻身于全国勘察设计综合实力、工程承包和项目管理百强单位的行列。

various disciplines, and 760 employees having higher-than-senior engineer title. The organizational structure of the company includes 13 directly affiliated production units, three technical support departments, and 10 functional management departments. The company has established 10 secondary legal entities in Beijing, Hainan, Xiamen, Shanghai, Changchun, and Nanjing; branches in cities such as Guangdong, Anhui, Qinghai, Sichuan, Zhejiang, Shenzhen, Xian. For operating business abroad, the company has set up offices in Uzbekistan, Cambodia, Dominica, Cuba and other overseas countries. Adhering to managerial principles of "making unswerving commitments to customers, the society, and employees to treat quality as life; pursue meticulous design, excellence engineering, and integrity-oriented services; protect the environment and cherish life," the company has constructed a complete system for quality, environment, and occupational health and safety. For decades, the company has ranked among the top 100 units of comprehensive strength in prospective design, engineering contracting, and project management in China.

## 联系人及联系方式

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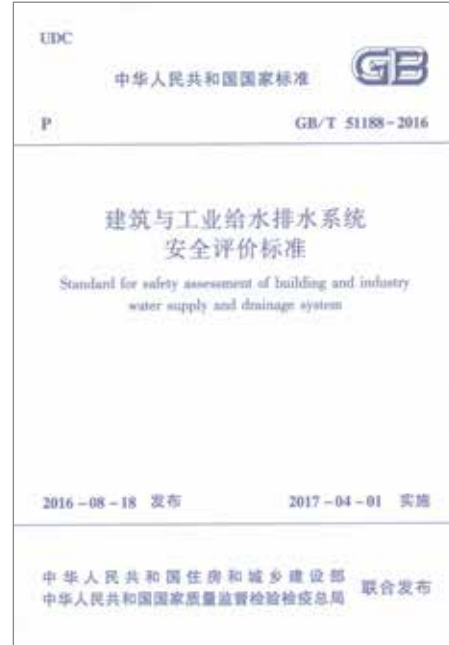
Phone:13683298123

## 标准 Standards

### 主持制定或参与的标准



物流建筑设计规范  
Code for design of logistics building



建筑与工业给水排水系统安全评价标准  
Standard for safety assessment of building and industry water supply and drainage system



建筑振动荷载标准  
Standard for vibration load of buildings



工业锅炉系统节能设计指南  
Guide for energy saving design of industry boiler systems



燃气冷热电联供工程技术规范  
Technical code for gas-fired combined cooling, heating and power engineering



工程振动术语和符号标准  
Standard for terms and symbols of engineering vibration



城镇供热用单位和符号  
Units and symbols for urban heating

# 北京起重运输机械设计研究院有限公司

Beijing Materials Handling Research Institute Co.,Ltd(BMHRI)

## 公司名称：北京起重运输机械设计研究院有限公司

Company Name: Beijing Materials Handling Research Institute Co.,Ltd(BMHRI)

北京起重运输机械设计研究院有限公司，成立于1958年，经过半个多世纪的发展，由原机械工业部直属的国家起重运输机械行业技术归口研究所发展成为集科研开发、工程承包、设备成套、设计制造、检验检测、监理服务为一体的国有科技型企业，隶属于世界500强企业中国机械工业集团有限公司所属中国中元国际工程有限公司。

我司现有职工近600人。具有国内唯一的索道工程设计甲级资质，索道前期咨询、项目管理咨询资质，客运索道、起重机械、厂内机动车辆三类特种设备检验检测资质，ISO9001、14001、18001体系认证证书。

我司具有客运索道、自动化物流仓储、起重机械、散料运输等四大工程业务板块，承包建设的各类工程近2000项，获得300余项国家及省部级科技成果奖。并提供液力液压产品与系统和设备监理监造服务。是我国起重运输机械行业综合技术实力最强的企业之一。

我司承担国际标准化组织起重机技术委员会（ISO/TC96）、工业车辆可持续性分技术委员会（ISO/TC110/SC5）主席工作，拥有机械工业物料搬运工程技术研究中心、北京市自动化物流装备工程技术研究中心、机械工业起重机械轻量化重点实验室。设有国家起重运输机械质量监督检验中心、国家客运架空索道安全监督检验中心、国家安全生产北京矿用起重运输设备检测检验中心等三个国家级检验中心，主办《起重运输机械》行业核心学术期刊。

全国起重机械、连续搬运机械、物流仓储设备、工业车辆及全国起重机械标委会的桥式和门式起重机分技术委员会、停车设备分技术委员会六个标准化技术委员会秘书处，中国索道协会、中国机械工程学会物流工程分会、中国工程机械工业协会工业车辆分会、中国重型机械工业协会物流与仓储机械分会、中国重型机械工业协会桥式起重机专业委员会五个国家行业协会、学会秘书处设在我司，为我国物料搬运机械行业的技术进步发挥着重要作用。

在新的发展时期，我司将继续坚持核心技术的创新与研发，与客户一同实现“搬动世界，传递真情”的北起梦。

Beijing Materials Handling Research Institute Co.,Ltd(BMHRI) was established in 1958, it was originally the research institute which undertook the technical management in materials handling industry in China, and was directly under the former Ministry of Machine Building Industry. With the development for more than half a century, BMHRI is now a state-owned technological corporation which has comprehensive business range, including research and development, project contracting, equipments, design and manufacture, inspection and supervision. BMHRI is also a member of IPPR subordinated of China National Machinery Industry Corporation (SINOMACH) which is among the world's top 500 enterprises.

BMHRI has nearly 600 employees now. BMHRI has three kinds of special equipment inspection and testing qualification certificate of the ropeway design Class A which is the only one in China, preliminary consultation for ropeway, consulting for project management, passenger ropeway, hoisting machinery, vehicles used within specific sites and area and also has ISO9001 certificate, ISO14001 certificate, ISO18001 certificate.

BMHRI has four main engineering business fields including passenger ropeway, automatic logistics and warehousing, lifting machinery, and bulk solids handling, and has constructed nearly 2000 various types of projects, and has been rewarded more than 300 national and provincial and ministerial-level scientific and technological achievement awards. Meanwhile, BMHRI also provides hydrodynamic & hydraulic product and system and equipment supervision service. BMHRI is one of the enterprises with the strongest comprehensive technical strength in materials handling industry in China.

BMHRI undertakes the work of the chairman of ISO/TC96, ISO/TC110/SC5, and has two technology research centers which are Materials Handling Engineering Technology Research Center in Machinery Industry and Beijing Automatic Logistics Equipment Engineering Technology Research Center as well as Mechanical Industry Hoisting Machinery Lightweight Technology Key Laboratory. Three state-level inspection centers are set in BMHRI, which are China Hoisting, Conveying Equipment Quality Supervision and Inspection Center, China Passenger Ropeway Safety Supervision and Inspection Center, and China Safe Production Beijing Mining Hoisting, Conveying Machinery Inspection and Testing Center, meanwhile, "Hoisting and Conveying Machinery" journal which is a industrial core academic journal is managed by BMHRI.

Six secretariats of national standardization technical committee on lifting machinery, continuous handling machinery, logistics & warehousing equipment, industrial truck, bridge and gantry cranes



and parking system, and five secretariats of national industrial associations including China Ropeway Association, Logistics Engineering Institution of CMES, Industrial Truck Institution of CCMA, Logistics & Warehousing Institution of CHMIA and CEOTCC of CHMIA are set in BMHRI. They play an important role in the technical development of Chinese materials handling industry.

In the new period of development, BMHRI will keep on innovation and development of its core technology, and to achieve the dream of BMHRI - "Move the World, Transfer the Truth" together with our customers.

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## 标准 Standards

### 主持制定或参与的标准



GB/T 31052.4-2017《起重机械 检查与维护规程 第4部分：臂架起重机》  
本标准适用于臂架起重机。

Lifting appliances—Code of inspection and maintenance—Part 4: Jib cranes  
The standard is applicable to jib cranes.



GB/T 31052.5-2015《起重机械 检查与维护规程 第5部分：桥式和门式起重机》  
本标准适用于桥式和门式起重机。

Lifting appliances—Code of inspection and maintenance—Part 5: Bridge and gantry cranes  
The standard is applicable to bridge and gantry cranes.



GB/T 31052.7-2016《起重机械 检查与维护规程 第7部分：桅杆起重机》  
本标准适用于桅杆起重机。

Lifting appliances—Code of inspection and maintenance—Part 7: Derrick cranes  
The standard is applicable to derrick cranes.



GB/T 31052.10-2016《起重机械 检查与维护规程 第10部分：轻小型起重设备》  
本标准适用于轻小型起重设备

Lifting appliances—Code of inspection and maintenance—Part 10: Series lifting equipments  
The standard is applicable to series lifting equipments.



GB/T 31052.11-2015《起重机械 检查与维护规程 第11部分：机械式停车设备》  
本标准适用于机械式停车设备

Lifting appliances—Code of inspection and maintenance—Part 11: Mechanical parking systems  
The standard is applicable to mechanical parking systems.



GB/T 31052.12-2017《起重机械 检查与维护规程 第12部分：浮式起重机》  
本标准适用于浮式起重机

Lifting appliances—Code of inspection and maintenance—Part 12: Floating cranes  
The standard is applicable to floating cranes.



GB/T 33082—2016《机械式停车设备 使用与操作安全要求》

本标准适用于如下机械式停车设备：a) 升降横移类 b) 简易升降类 c) 平面移动类 d) 巷道堆垛类 e) 垂直升降类 f) 垂直循环类 g) 水平循环类 h) 多层循环类 i) 汽车专用升降机

Mechanical parking systems—Safety requirements for the application and operation  
 The standard is applicable to mechanical parking systems: a) lifting-sliding b) easy lifting c) horizontal shifting d) aisle-stacking e) vertical lifting f) vertical circulating g) level circulating h) multi-layer circulating i) lift for vehicle



GB/T 35975—2018《起重吊具 分类》

本标准适用于起重机械用起重吊具

Load lifting attachments—Classification  
 The standard is applicable to load lifting attachments for lifting appliances.



JB/T 7688.8—2015《冶金起重机技术条件 第8部分：均热炉夹钳起重机》

本标准适用于以立式钢锭夹钳作为取物装置、夹取钢锭送入均热炉或从均热炉中将钢锭取出送到运锭车或辊道上的均热炉夹钳起重机

Specifications for metallurgy cranes—Part 8: Soaking pit cranes  
 The standard is applicable to soaking pit cranes with vertical ingot clamp as the fetching device, to take ingot into the homogenizing furnace or take out of the homogenizing furnace onto ingot truck or roller.



GB/T 36697—2018《铸造起重机报废条件》

本标准适用于吊运熔融金属的起重机

Discard qualification for ladle crane  
 The standard is applicable to cranes for molten metal.



JB/T 12214-2015 《核电站环行起重机》

本标准适用于压水堆核电站反应堆厂房中使用的环行起重机

Polar cranes for nuclear power plants

The standard is applicable to polar cranes used in reactor building of PWR nuclear power plants.



JB/T 12745-2016 《电动葫芦 能效限额》

本标准适用于 JB/T 9008.1 规定的钢丝绳电动葫芦、JB/T 10222 规定的防爆电动葫芦及 JB/T 5317 规定的环链电动葫芦。

Electrical hoists — Limit value of energy efficiency

The standard is applicable to electric wire rope hoists in JB/T 9008.1, explosion-proof hoists in JB/T 10222 and electric chain hoists in JB/T 5317.



JB/T 12215-2015 《钢丝绳卷扬提升式垂直升船机》

本标准适用于 100t—1000t 级湿式运行的钢丝绳卷扬提升式垂直升船机

Wire rope hoist vertical shiplift

The standard is applicable to wire rope hoist vertical shiplift of 100t-1000t wet type.



GB/T 26950.2-2015 《防爆工业车辆 第2部分：内燃工业车辆》

本部分适用于爆炸性环境或潜在爆炸性环境中使用的车辆，不适用于煤矿井下用车辆和炸药粉尘环境用车辆。

Explosion-proof industrial trucks—Part 2: Internal combustion industrial trucks

The standard is applicable to vehicles used in explosive or potentially explosive environment, but not for vehicles in coal mines and explosive dust surroundings.



#### GB/T 36507—2018《工业车辆 使用、操作与维护安全规范》

本标准适用于以下车辆类型：a) 平衡重式叉车 b) 前移式叉车（具有可伸缩的门架或货叉架） c) 插腿式叉车 d) 托盘堆垛车 e) 平台堆垛车 f) 双层堆垛车 g) 侧面式叉车（单侧） h) 侧面堆垛式叉车（两侧和三向） i) 拣选车 j) 双向和多向运行叉车 k) 平衡重式集装箱堆高机 l) 铰接平衡重式叉车 m) 伸缩臂式叉车 n) 托盘搬运车 o) 平台搬运车 p) 牵引力不大于 20000N 的牵引车 q) 货物及人员载运车 r) 其他步行式工业车辆和以蓄电池、柴油、汽油或液化石油气为动力的工业车辆

Industrial trucks—Safety rules for the application, operation and maintenance

The standard is applicable to truck types: a) counter balanced lift trucks b) reach trucks (with retractable mast or fork arm carriage) c) straddle trucks d) pallet stackers e) platform trucks f) double stackers g) single-side-loading trucks (single side) h) side stacking trucks (lateral stacking trucks and lateral- and front-stacking trucks) i) order-picking trucks j) bi-directional and multi-directional fork-lift trucks k) counterbalanced container handlers l) counterbalanced trucks with articulated steering m) variable-reach trucks n) pallet trucks o) platform trucks p) towing tractor with drawbar pull ≤ 20000N q) cargo and operator carrier trucks r) other pedestrian-propelled trucks and trucks powered by batteries, diesel, gasoline or liquefied petroleum gas.



#### JB/T 12574—2015《叉车属具 术语》

本标准适用于装配在叉车上的属具

Forklift truck attachments—Terminology  
The standard is applicable to attachments equipped on forklift truck.



#### JB/T 11764—2018《内燃平衡重式叉车 能效限额》

本标准适用于 JB/T 2391 规定的内燃平衡重式叉车，其他类型的内燃叉车可参照执行。

Internal combustion counterbalanced forklift trucks—  
Limited value of energy efficiency

The standard is applicable to internal combustion counterbalanced forklift trucks in JB/T 2391. Other types of internal combustion forklift trucks may use the standard as reference.



#### GB/T 33079—2016《散状物料连续装船机 型式和基本参数》

本标准适用于固定式、移动式、弧线摆动式散状物料装船机。

Continuous shiploader for bulk materials—Type and basic parameter

The standard is applicable to fixed, mobile and swinging shiploaders for bulk materials.



GB/T 35016—2018《连续搬运机械 装卸机械 安全规范》  
本标准适用于在港口、矿山、电厂等场合下使用的装卸机械，包括散料连续装船机、散料连续卸船机、斗轮堆取料机、排土机及回转式翻车机等设备。

Continuous mechanical handling equipment—Loading and unloading—Safety code  
The standard is applicable to loading and unloading equipments in sea port, mine field and power plant, including continuous shiploader for bulk materials, continuous shipunloader for bulk materials, wheel stacker reclaimer, dumping plough and rotary car dumper.



GB/T 35017—2018《连续搬运设备 散状物料分类、符号、性能及测试方法》  
本标准适用于连续搬运设备输送物料温度的现场测试、极限切应力试验的测试方法及三轴切应力试验方法。本标准不适用于对低温物料温度的测试。

Continuous handling equipments—Classification, symbols, performance and test methods for bulk materials  
The standard is applicable to field test for material temperature conveyed by continuous handling equipments, test method for shear stress limit and three-axis shear. The standard is not applicable to temperature testing of low temperature material.



GB/T 36698—2018 《带式输送机设计计算方法》  
本标准适用于输送散状物料的带式输送机。本标准不适用于钢丝绳牵引带式输送机、管状带式输送机、气垫带式输送机等特殊带式输送机的设计计算，其通用部分的设计计算可参照使用本标准。

Basis for calculation of belt conveyors  
The standard is applicable to belt conveyor for bulk materials. The standard is not applicable to design and calculation of special belt conveyor such as wire rope traction belt conveyor, tubular belt conveyor and air supported belt conveyor. The design and calculation of general part can be referred to the standard.



JB/T 12636—2016 《无轴螺旋输送机》  
本标准适用于输送散状物料，尤其是输送易缠绕、易堵塞、有黏性及腐蚀性等特性物料的输送机。

Shaftless screw conveyor  
The standard is applicable to conveyor for bulk materials, especially conveyor for sticky, corrosive materials and materials easy to intertwine.





JB/T 12919-2016 《成件物品用轻型带式输送机》

本标准适用于在室内工作的、输送一般用途成件物品的轻型带式输送机。本标准不适用于输送有毒、有害、易燃、易爆、具有强腐蚀及放射性成件物品的轻型带式输送机。

Light duty belt conveyors for unit

The standard is applicable to light duty belt conveyors transporting unit for general applications in indoor environment. The standard is not applicable to light duty belt conveyors transporting toxic, harmful, flammable, explosive, corrosive and radioactive unit.



GB/T 35485-2017 《导轮式分拣机技术规范》

本标准适用于室内使用的、对箱式物品进行自动分拣处理的导轮式分拣机。

Specification of guide wheel sorting machine

The standard is applicable to guide wheel sorting machine for automatic sorting of containers in indoor environment.



GB/T 35486-2017 《物流仓储配送中心螺旋箱式输送机技术规范》

本标准适用于在物流仓储配送中心等室内使用的对箱式物品在垂直方向上进行连续自动输送处理的螺旋箱式输送机。

Specification of spiral-conveyor for logistics warehousing distribution center

The standard is applicable to spiral-conveyor for vertically continuous automatic transportation of containers in logistics warehousing distribution center or other indoor environment.



GB/T 35738-2017 《物流仓储配送中心输送、分拣及辅助设备分类和术语》

本标准适用于物流仓储配送中心输送、分拣及辅助设备的产品设计、生产制造、营销服务和操作使用等。

Logistics warehousing distribution center conveyor, sorting and peripheral equipment—Classification and terminology

The standard is applicable to product design, manufacturing, marketing services and operation for logistics warehousing distribution center conveyor, sorting and peripheral equipment.



GB/T 35739-2017 《物流仓储配送中心成件物品连续垂直输送机》

本标准适用于成件物品沿垂直方向分层输送的输送机。

Continuous vertical conveyor for unit goods in logistics warehousing distribution center

The standard is applicable to vertically layered conveyor for unit goods.



# 中国福马机械集团有限公司

China Foma (Group) Co., Ltd

## 公司名称：中国福马机械集团有限公司

Company Name: China Foma (Group) Co., Ltd

中国福马机械集团有限公司（简称中国福马集团公司）前身为林业部机械公司，成立于1979年，1998年划归国家大型企业工委，2003年由国务院国资委直接管理，2007年与中国机械工业集团有限公司重组，成为其全资子公司，公司总部位于北京市，目前拥有二、三级企业21家，其中林海股份有限公司为上市公司；与日本雅马哈发动机株式会社合资组建了江苏林海雅马哈摩托车有限公司等合资企业。

### 主营业务

中国福马集团公司是中国专用设备研发、制造、销售的大型企业，是中国林业机械协会的会长单位。集团公司以“动力装备、林业装备、工程与贸易”为三大主业，积累了动力机械、人造板机械等几十年的生产经营经验，多次被中国质量协会用户委员会认定为“全国用户满意产品”。产品出口到美国、加拿大、日本、欧洲、东南亚等130个国家和地区，享有较高市场声誉。“十二五”以来，大力推进“绿色能源开发”项目，建设了宁夏、江苏、河北、甘肃等地多个大型地面光伏电站，并结合西部地区沙漠治理，建设、持有宁夏振启30MW地面光伏电站，为地区的发展做出应有的贡献。近年，涉足新能源汽车研发、制造领域，探索并形成新能源汽车研发、制造和销售实力。

### 研发能力

中国福马集团公司持续加大科技投入，技术力量雄厚，拥有国家认定企业技术中心1个、博士后科研工作站1个、省部级以上科研机构7个、省级高新技术企业4家，拥有25名享受国务院特殊津贴专家，累计获得国家级科技进步奖5项，省部级科技进步奖65项；先后有23个产品被颁获国家高新技术产品；累计获得授权专利294项，其中包括1项欧洲专利在内的发明专利38项；公司主持参与了10多项国家标准、行业标准的制定与修订，承担并完成国家“863”高技术课题“人造板连续平压与精准控制技术”的研发，“BPY74265宽幅人造板连续压机成型压制系统”系列产品获得“国家重点新产品”认定，并被列入国家《首

China Foma (Group) Co., Ltd. (hereinafter referred to as China Foma) formerly known as the Machinery Company of Ministry of Forestry, founded in 1979 and allocated to National Committee for Large Enterprises in 1998, directly managed by the State-owned Assets Supervision and Administration Commission of the State Council in 2003, became the wholly-owned subsidiary of China National Machinery Industry Corporation (Sinomach) in 2007 during its reorganization. Its headquarters is located in Beijing, with 11 secondary and tertiary enterprises, including listed companies such as Linhai Stock Co., Ltd.. It has built a joint venture Jiangsu Linhai Yamaha Motorcycle Co., Ltd. with Yamaha (Japan).

### Main scope of business

China Foma is a large enterprise which is committed to special equipment R&D and manufacture in China, it is a chairman unit of China Forestry Machinery Association. The company has 3 main businesses "power equipment, forestry equipment, engineering and trade", and within a few decades, it has accumulated abundant production and operation experiences for power machinery, wood-based panel machinery, etc., boosting the leading technologies in China. It has been honored by China Quality Association User Committee as "National Customer Satisfactory Product". Products are exported to the United States, Canada, Japan, Europe, Southeast Asia, over 130 countries and regions, enjoying a high reputation in the market. Since the "Twelfth Five Year Plan", and it has been vigorously promoting the "green energy development" projects, and has built many large-scale ground photovoltaic power stations in Ningxia, Jiangsu, Hebei, Gansu and other provinces; it has joined in the efforts for desertification control of the western region, and has built and owned Ningxia Zhenqi 30MW ground photovoltaic power plant, which has made due contributions for the regional development. In recent years, it has been involved in the R&D and manufacture fields for new energy automobiles, and through explorations it has built up its strengths in R&D, manufacture and sales for new energy automobiles.

### R&D ability

China Foma owns strong technical forces and has 1 national certified technical center, 1 post-doctoral scientific workstation, 7 ministerial level scientific research institutions, 4 provincial level high-tech enterprises, and 25 experts who enjoy the special allowance of the State Council; it has obtained a total of 5 national science and technology progress awards, and 65 ministerial level scientific and technological progress awards. There have been 23 products awarded with the national high and new technology products; it has obtained a total of 294 authorized patents, 38 invention patents including 1

台（套）重大技术装备推广应用指导目录》；掌握并拥有以全地形车、通用汽油机为代表的动力机械核心技术。完善的研发体系、高素质的人才队伍、先进的科研设备，充分保证了中国福马集团公司研发能力的持续提升。

#### 制造能力

中国福马集团公司拥有先进的生产制造系统，在江苏泰州、苏州、镇江，天津等地拥有多个生产基地，培养了一支经验丰富、技术水平较高的专业技术人才队伍。动力机械板块拥有四十余条动力机械、全地形车、摩托车、电动车、新能源汽车等自动化水平较高的专业生产线和柔性生产线，并凭借国家一级计量水平的计量检测系统保障产品质量。林业装备板块拥有大型落地镗铣床、八米龙门铣、高精度外圆磨、立卧式加工中心、高精度动平衡机、激光测量仪等“精、大、稀”加工和检测设备，支撑着主导产品、关键零件的制造生产，在国内同行业中加工能力位列前茅。

European patent; the company has been in charge of the formulation and revision of over 10 national standards and industry standards, undertaken and completed the R&D of national "863" high technology project "continuous press and precision control technology of wood-based panel", "molding system of BPY74265 wood-based panel continuous press" series products, which have gained accreditation for "National Key New Product", and were included in the national "Promotion and Application Guidance Catalogue for First (set) of Major Technology and Equipment"; China Foma has mastered and owned the core technologies of power machinery, which are represented by all-terrain vehicles and general gasoline engines. Perfect R&D system, high-quality personnel and advanced scientific research equipment all fully guarantee the continuous enhancement of R & D capabilities.

#### Manufacture ability

China Foma has the first-class manufacturing system in China; owns many manufacturing bases in Taizhou Zhenjiang Province, Suzhou, Tianjin and other places. It has cultivated a professional and technical team with abundant experience and higher technical level. Its power machinery sector has over 40 professional production lines and flexible production lines of high level for power machinery, all-terrain vehicle, motorcycle, motor vehicle, new-energy automobile, etc., with national first class measurement and testing system guaranteeing the product quality. The forestry equipment sector has large-scale ground boring machine, 8-meter gantry milling machine, high precision cylindrical grinder, vertical and horizontal machining center, high precision dynamic balancer, laser measuring device, etc. "refined, large and rare" machining and testing equipment, which support the manufacture and production of the main products and key parts, and rank No.1 within the industry in China.

## 联系人及联系方式

### Contact Person and Information

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标准  
Standards

## 1. GB/T 24935—2010 全地形车最大侧倾稳定角试验方法

本标准规定了在侧倾试验台上进行全地形车最大侧倾稳定角试验的试验设备和仪器、试验条件、试验方法、取值规则和试验记录。本标准适用于全地形车最大侧倾稳定角的试验。

GB/T 24935-2010 The test method of maximum stable side-inclination for all-terrain vehicles

This standard specifies the test equipment and instruments, test conditions, test methods, selection rules and test records for the maximum roll stable Angle test of ATV on the roll test platform.

This standard is applicable to the test of maximum stable Angle of roll of all terrain vehicles.



## 2. GB 20888.2—2013/ISO 11680—2:2011 林业机械 杆式动力修枝锯安全要求和试验 第2部分：背负式动力修枝锯

GB20888 的本部分规定了具有背负式动力装置且动力源经传统轴传递动力至切割部件的杆式背负式动力修枝锯（以下简称“背负式修枝锯”）的设计和结构方面的安全要求及其试验方法。

本部分中切割部件是指链锯及做往复运动或旋转运动的锯片。

本部分提出消除或减少使用背负式修枝锯所产生的各种危害的方法，规定了由生产厂家提供的有关安全操作方面的资料要求。

本部分和第1部分的相关章节涉及了与背负式修枝锯相关的，正常使用以及合理的，可预见的误用时的所有的严重危害，但没有涉及接触架空电缆引起的电击危害（使用说明书中包含的警告和建议除外）和背负式动力装置引起的全身震动危害

GB 20888.2-2013/ISO 11680-2:2011 Machinery for forestry-Safety requirements and testing for pole-mounted powered pruners-Part 2:Machines for use with back-pack power source

This part of GB20888 specifies the safety requirements and test methods for the design and construction of pole type knap-type power pruning saws (hereinafter referred to as "knap-type pruning saws") with a knap-type power device and the power source transmits the power to the cutting part through the traditional shaft. The cutting parts in this section refer to chain saws and saw blades with reciprocating or rotating motion. This section presents methods for eliminating or reducing the hazards associated with the use of a knapsack pruning saw and provides information on safe operation requirements provided by the manufacturer. This part and the related section of part 1 involved related to knapsack pruning saws, normal and reasonable, when using the foreseeable misuse of all serious harm, but does not involve contact aerial cable caused by electric shock hazard (using the instructions contained in the warning and advice except) the whole body vibration damage caused and knapsack power devices.



### 3. 宽带式砂光机 通用技术条件

本标准适用于砂光实木板材、木质和非木质人造板及其构件，无机质轻型板材、热固性树脂装饰层压板材等的宽带式砂光机。本标准不适用于砂光金属板材的宽带式砂光机。

General specifications for wide belt sanders

This standard applies for sanding machine of solid wood materials, wood based and non-wood panels and relative products, inorganic light panels and thermosetting resin decorative laminated panels etc. It is not applicable for metal plate sanding machines.



### 4. 气流分选机

本标准适用于刨花气流分选机。

Air grader

This standard applies for flake air sifter.



#### 5. 升降台

本标准适用于人造板等生产用的液压升降台。

#### Lifting table

This standard applies for hydraulic lifting tables used in production of man-made boards.



#### 6. 规格锯生产线

本标准适用于中、高密度纤维板和刨花板生产线使用的规格锯生产线。

#### The size saws production line

This standard applies for cut to size production line of medium/high density fibre board and particle board.



#### 7. 通道式刨花干燥系统

本标准适用于刨花板生产线使用的通道式刨花干燥系统。

Single and multiple pass rotary dryer

This standard applies for passage flake dryer system used in particle board production line.



#### 8. 砂带磨削机床 技术条件

本标准适用于砂带磨削机床设计、制造、检验与验收。各类型的砂带磨削机床可根据其使用性能、结构等特点，编制相应的产品技术条件标准，对技术指标、评定方法和检验项目等规定做出补充和具体化。

Abrasive belt grinding machine-Specifications

This standard applies for design, manufacture, inspection and acceptance for abrasive belt sanding machines. Each type of belt sanding machines could have its own products technical standard according to its functions and structure features. Compensations and exact details in regulations of technical index, assessment method and inspection aspects could be profiled accordingly.



#### 9. 刨花板生产线验收通则

本标准适用于以木质材料和非木质植物材料为原料的刨花板及定向刨花板生产线（成套设备），以石膏为胶凝材料、刨花（木质或非木质）为增强材料的半干法石膏刨花板生产线（成套设备），以水泥为胶凝材料、刨花（木质或非木质）为增强材料的半干法水泥刨花板生产线（成套设备）的验收。

Acceptance generality of the particleboard production line

This standard applies for inspection and acceptance of following target products:

1. Particle board or oriented strand board (OSB) production line (complete plant) with wood-based materials or non-wood plant materials;
2. Semi-dry plaster particle board production line (complete plant) using plaster binding material mixed with wood or non-wood particles as strengthen materials.
3. Semi-dry cement particle board production line (complete plant) using cement binding materials mixed with wood or non-wood particles as strengthen materials.



#### 10. 鼓式削片机通用技术条件

本标准规定了鼓式削片机的参数、要求、试验方法、检验规则及标志、包装、贮存等。

本标准适用于木质或非木质纤维板、刨花板生产及其他产品生产使用的鼓式削片机

General specifications for drum chipper

This standard regulates the parameter, require, testing method, inspection rule and mark, package and storage etc of drum chipper. This standard is applied to drum chipper for wood or non-wood fiberboard, particleboard and other product.





#### 11. 热磨机

本标准规定了热磨机主参数、要求、检验规则及标志、运输、包装、贮存。

本标准适用于纤维板生产工艺中纤维分离用热磨机。

##### Defibrator

This standard regulates the main parameter, require, testing method, inspection rule and mark, package and storage of defibrator.

This standard is applied to defibrator for fiber separation in the fiberboard production process.

# 中国机械工业建设集团有限公司

China Machinery Industry Construction Group Inc.

**公司名称：中国机械工业建设集团有限公司**  
**Company Name: China Machinery Industry Construction Group Inc.**

中国机械工业建设集团有限公司（中机建设集团，SINOCONST）前身是中国机械工业建设总公司，始建于1953年，是我国最早成立的大型国有施工企业之一。具备住建部批准的工程施工总承包特级资质、建筑行业设计甲级资质、商务部批准的对外经营权和AAA级资信等级。通过了ISO9001质量管理体系、ISO14001环境管理体系和OHSAS18001职业健康安全管理体系审核认证。公司现有14个全资子公司、6个分公司、16个控（参）股公司和一所国家示范性技师学院。公司员工总数一万余人，其中各类专业技术人员3000多人。

中机建设集团成立60年来，先后承担了数千项大中型重点工程建设，工程领域遍及机械、汽车、建材、冶金、电力、化工、石油、电子、轻工、广播电视、环保、市政、公用和民用建筑等众多行业，施工业绩遍布全国各地，为我国的工业建设和发展做出了重要贡献。

改革开放以来，中机建设集团积极面向国际市场，适时调整经营结构，全面创新管理机制，在全球40多个国家和地区承建了一大批具有重要影响的工程建设项目，在国际工程承包与项目管理方面积累了丰富的经验，形成了为业主提供从经济技术咨询、项目规划设计、技术设备成套、项目施工管理到人才技术培训、产品达产达标的一揽子服务的竞争优势。

中机建设集团与国内外的科研院所、知名企业和金融机构建立了全方位、深层次的战略合作关系。以市场为导向，以创新为动力，着力提升市场营销、项目管理、技术工程和资本运营“四个能力”，重点打造工业工程、电力工程、冶金工程、石化工程、基础设施工程和公共与民用建筑工程“六大业务板块”，主要经济技术指标连续多年保持持续快速增长。

面向未来，中机建设集团将秉承“真诚服务人类，用心建设未来”的发展使命，锐意进取，开拓创新，不断创造新的竞争优势和发展动力，努力将中机建设集团发展成“国内一流、国际知名”的综合性建设企业集团！

China Machinery Industry Construction Group Inc.(SINOCONST), formerly known as China CMIIC Engineering and Construction Corporation, was founded in 1953 and is one of the earliest large state-owned construction enterprises in China, having Class A+ general construction contracting certification and Class A design certification approved by the Ministry of Housing and Urban-Rural Development, and having AAA credit standing and foreign trade license granted by the Ministry of Commerce. Meanwhile, SINOCONST has passed the certification of ISO9001 Quality Management System, ISO14001 Environmental Management System and OHSAS18001 Occupational Health and Safety Management System. Presently, SINOCONST has 15 wholly owned subsidiaries, 4 Business Division divisions, 19 branch companies, 8 joint-stock companies and 1 National Exemplary Technician Institute. It boasts more than 10,000 employees, including 3,000 various engineers.

During the past 60 years since its establishment, SINOCONST has successively undertaken hundreds of large and medium key projects involving different sectors, such as machinery, automobile, building materials, metallurgy, electric power, chemical, petroleum, electronics, light industry, broadcasting & TV, environmental protection, municipal, public and civil buildings etc. With projects performed throughout the country, SINOCONST has made great contribution to China's industrial development and modernization.

Since opening up and reform, SINOCONST has been actively prepared for international competition and timely adjusted its business strategy and renewed the management mechanism. By carrying out quantity of significant projects in over 40 countries and regions, SINOCONST has accumulated rich experiences and knowledge in international project contracting and management and gained advantages in competition by being able to provide the clients with package services covering economic and technical consulting, project planning and design, supply of complete technology and equipment, project construction management, staff training and satisfactory production.

Meanwhile, SINOCONST has established in-depth strategic cooperation relationship at all levels with a large group of R&D institutes, well known enterprises and financial institutions both at home and abroad. Oriented by market and powered by innovation, SINOCONST has achieved remarkable progress in terms of economic indicators in the past years by enhancing its four capabilities in marketing, project management, technical engineering and capital

operation, and by consolidating and improving its six business sectors, namely industrial projects, power plants, metallurgical works, Petrochemical works, infrastructural projects and public and civil buildings.

Looking into the future, SINOCONST will keep following the concept of serving the mankind sincerely and building the future wholeheartedly, actively and innovatively creating fresh competitive edge and development momentum so as to become one of the modern enterprise groups with international competitiveness.

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## 标准 Standards

### 一、主持编制的国家标准（11 项）



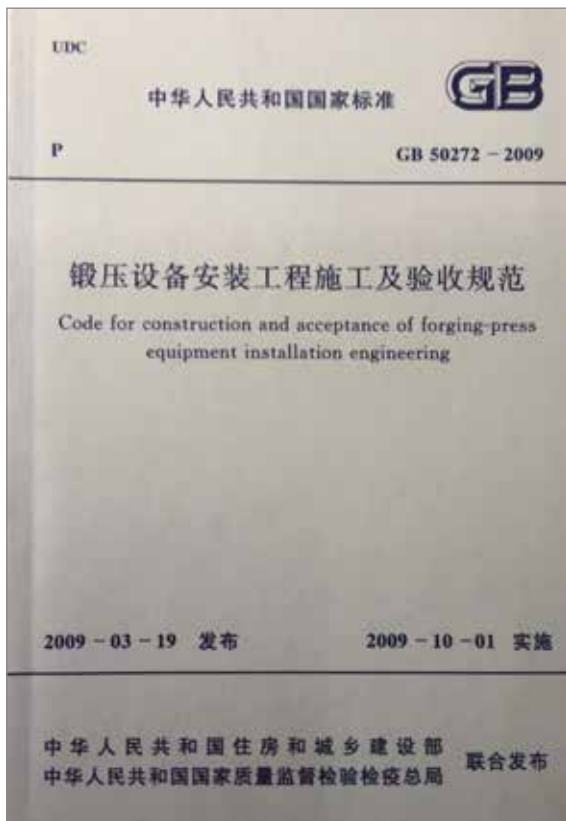
1. 《机械设备安装工程施工及验收通用规范》GB50231—2009  
本规范适用于各类机械设备安装工程施工及验收的通用性部分。

General code for construction and acceptance of mechanical equipment installation engineering  
This Code shall be applicable to the general erection and acceptance of various kinds of mechanical equipment.



2. 《金属切削机床安装工程施工及验收规范》GB50271—2009  
本规范适用于车床、钻床、镗床、磨床、齿轮加工机床、螺纹加工机床、铣床、刨床、插床、拉床、锯床、特种加工机床和组合机床的安装工程的施工及验收。

Code for construction and acceptance of metal-cutting machine installation engineering  
This Code shall be applicable to the erection and acceptance of machines and equipment including lathe, driller, borer, grinder, gear machine, threading machine, miller, planer, slotter, broacher, sawing machine, special machine and combined machine.



### 3. 《锻压设备安装工程施工及验收规范》GB50272—2009

本规范适用于机械压力机、液压机、自动锻压机、空气锤、锻机、剪切机、弯曲校正机的安装工程的施工及验收。

Code for construction and acceptance of forging-press Equipment installation engineering

This Code shall be applicable to the erection and acceptance of machines and equipment including mechanical press, hydraulic press, automatic forging machine, air hammer, forging machine, cutting machine and bending rectifying machine.



### 4. 《锅炉安装工程施工及验收规范》GB50273—2009

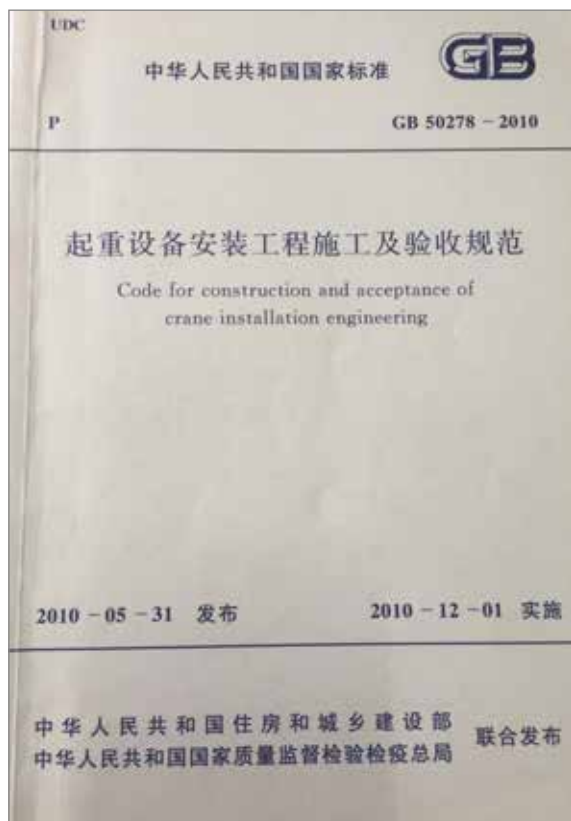
本规范适用于工业、民用、区域供热额定工作压力小于或等于 3.82MPa 的固定式蒸汽锅炉，额定出水压力大于 0.1MPa 的固定式热水锅炉和有机热载体炉安装工程的施工及验收。

本规范不适用于铸铁锅炉、交通运输车用和船用锅炉、核能锅炉、电站锅炉安装工程的施工及验收。

Code for construction and acceptance of boiler installation engineering

This Code shall be applicable to the erection and acceptance of the fixed steam boiler with nominal working press less than or equal to 3.82MPa, the fixed hot water boiler with nominal outlet water pressure more than 0.1MPa and the organic heat carrier used for industrial, civil or district heat supplying purposes.

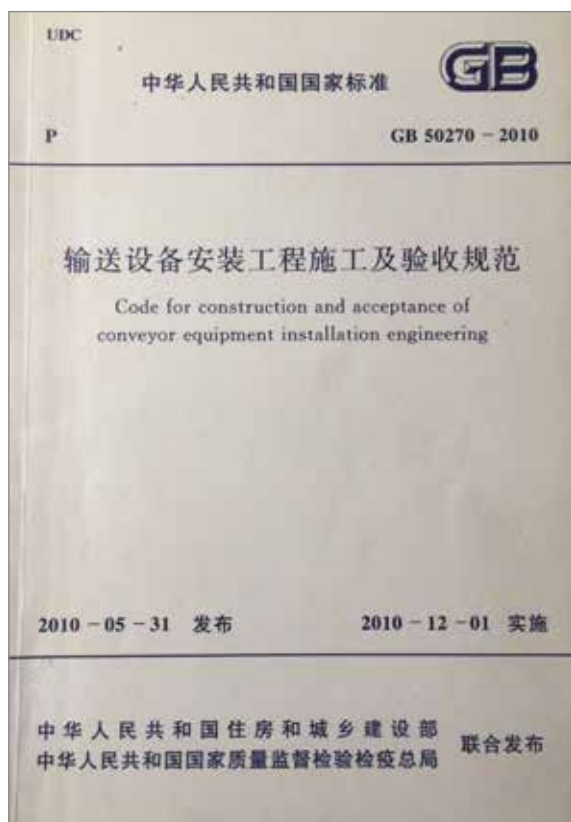
This Code shall not be applicable to the erection and acceptance of cast iron boiler, vehicle or boat carrying boiler, nuclear boiler or power station boiler.



5. 《起重设备安装工程施工及验收规范》GB50278—2010

本规范适用于电动葫芦、梁式起重机、桥式起重机、门式起重机和悬臂起重机的起重设备安装工程的施工及验收。

Code for construction and acceptance of crane installation engineering  
This Code shall be applicable to the erection and acceptance of machines and equipment including electric hoist, beam crane, bridge crane, gantry crane and jib crane.



6. 《输送设备安装工程施工及验收规范》GB50270—2010

本规范适用于带式输送机、板式输送设备、垂直斗式提升机、螺旋输送机、辊子输送机、悬挂输送机、振动输送机、埋刮板输送机、气力输送设备、矿井提升机和绞车安装工程的施工及验收。

Code for construction and acceptance of conveyor equipment installation engineering  
This Code shall be applicable to the erection and acceptance of machines and equipment including belt conveyor, slab conveyor, stand bucket elevator, screw conveyor, roller conveyor, hanging conveyor, vibrating conveyor, buried scraper conveyor, pneumatic conveyor, mine elevator and hoist.



7. 《破碎、粉磨设备设备工程施工及验收规范》GB50276—2010  
本规范适用于矿石、煤炭、耐火材料、建筑材料、化工材料、粮食、饲料和药材用的破碎、粉磨设备设备工程施工及验收。

Code for construction and acceptance of crushing and grinding equipment installation engineering  
This Code shall be applicable to the erection and acceptance of crushing, powdering, and grinding machines and equipment used in the industries of ore, coal, fire-resistant materials, building materials, chemicals, cereals, fodder and medicine.

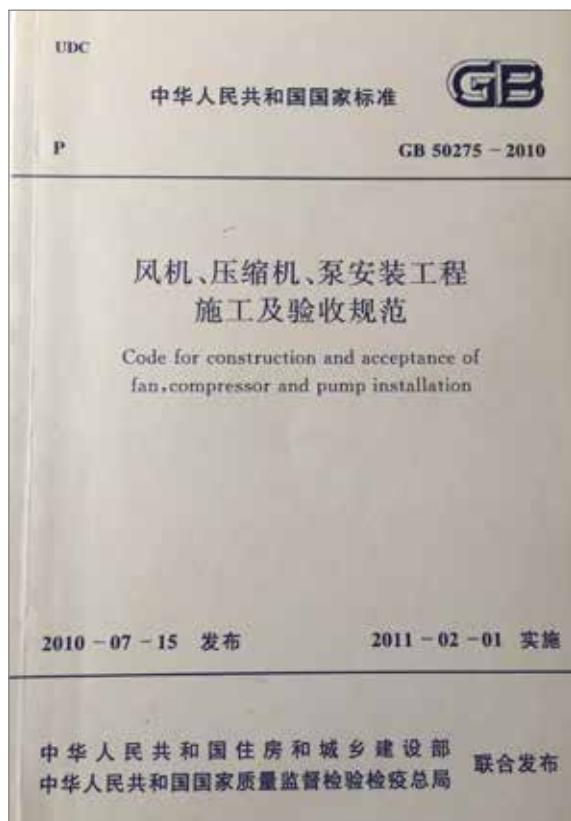


8. 《制冷设备、空气分离设备设备工程施工及验收规范》GB50274—2010

本规范适用于活塞式、螺杆式、离心式压缩机为主机的压缩式制冷设备，溴化锂吸收式制冷机组和组合冷库，低温法制取氧、氮和稀有气体的空气分离设备的施工及验收。

Code for Construction and Acceptance of Refrigeration Plant and Air Separation Plant Installation  
This Code shall be applicable to the erection and acceptance of machines and equipment including compressing refrigerators comprising mainly of piston compressor, screw compressor or centrifugal compressor, lithium bromide absorption refrigerating units and pre-fab cold store, and air separating equipment making oxygen, nitrogen and rare gas by method of low-temperature.

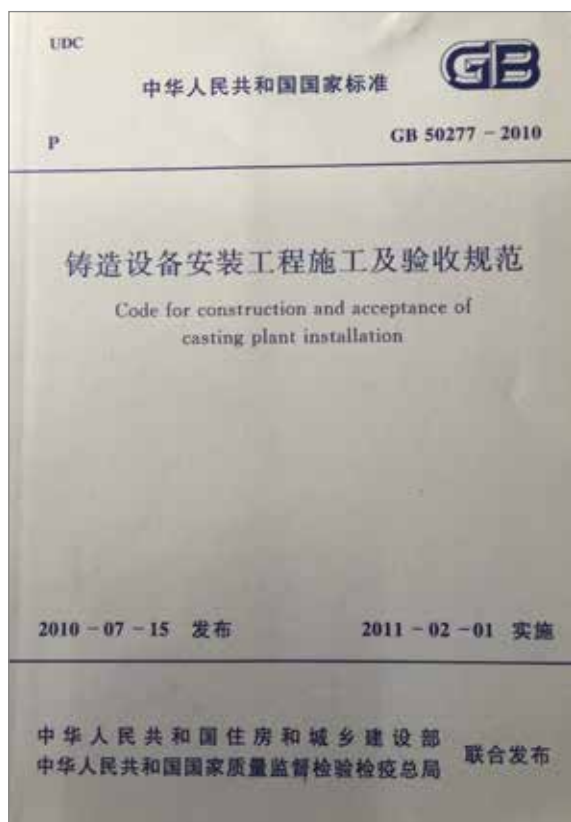




9. 《风机、压缩机、泵安装工程施工及验收规范》GB50275—2010

本规范适用于 离心通风机、离心鼓风机、轴流通风机、轴流鼓风机、罗茨和叶氏鼓风机、防爆和消防排烟通风机；离心泵、井用泵、隔膜泵、计量泵、混流泵、轴流泵、旋涡泵、螺杆泵、齿轮泵、转子式泵、潜水泵、水轮泵、水环泵、往复泵的施工及验收。

Code for Construction and Acceptance of Fan, Compressor and Pump Installation  
This Code shall be applicable to the erection and acceptance of machines and equipment including centrifugal fan, centrifugal blower, axial fan, axial blower, Roots and Jaeger blower, explosion-proof and smoke exhausting fan, centrifugal pump, well pump, membrane pump, metering pump, mixed flow pump, axial flow pump, turbine pump, screw pump, gear pump, rotor pump, submarine pump, water turbine pump, water ring pump and reciprocating pump.



10. 《铸造设备安装工程施工及验收规范》GB50277—2010

本规范适用于通用的砂处理设备、造型制芯设备、落砂设备、清理设备、金属型铸造、熔模和熔炼设备的安装工程的施工及验收。

Code for Construction and Acceptance of Casting Plant Installation  
This Code shall be applicable to the erection and acceptance of machines and equipment including sand blasting equipment, moulding and coring machine, shakeout equipment, cleaning equipment, metal mould casting equipment, investment casting equipment and melting equipment.



11. 《机械设备安装工程术语标准》GB/T50670-2011

本标准适用于金属切削机床、锻压设备、风机、压缩机、泵、制冷设备、空气分离设备、起重设备、铸造设备、破碎设备、粉磨设备、输送设备、锅炉的安装工程。

Terminology standard for mechanical equipment installation

This Code shall be applicable to the erection of machines and equipment including metal cutting machine, forging machine, fan, compressor, pump, refrigerating equipment, air separation equipment, rigging equipment, casting equipment, crushing equipment, powdering and grinding equipment, conveying equipment and boiler.

二、参与编制的国家标准（8项）

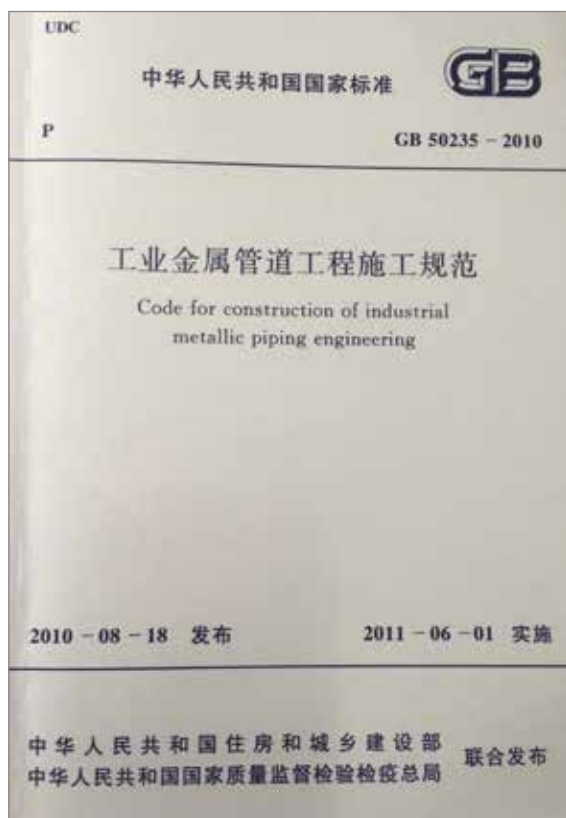


12. 《工业安装工程施工质量验收统一标准》GB50252-2018

本标准适用于新建、改建、扩建项目中工业安装工程施工质量的验收。

Unified standard for constructional quality acceptance of industrial installation engineering

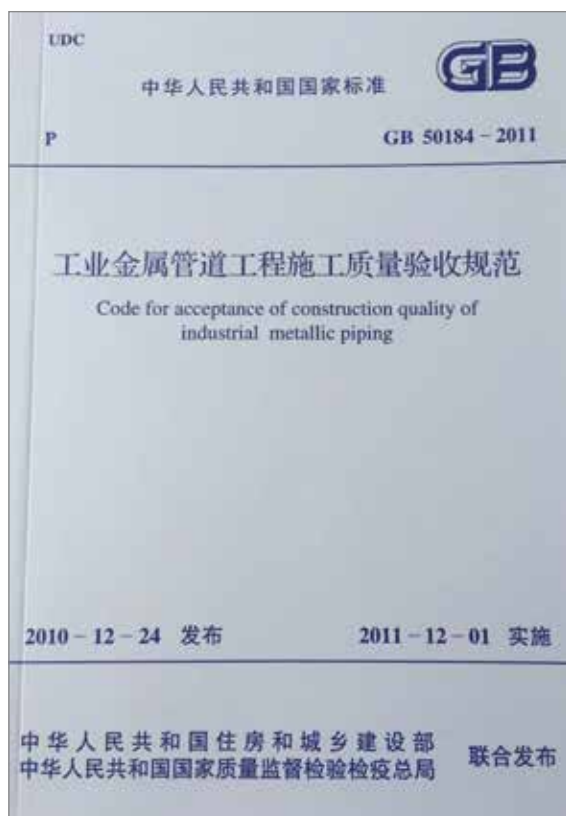
This Code shall be applicable to quality inspection and acceptance of the industrial erection works of the newly built, reconstructed or expanded projects.



13. 《工业金属管道工程施工规范》GB50235—2010

本规范适用于设计压力不大于 42MPa，设计温度不超过材料允许使用温度的工业金属管道工程的施工。

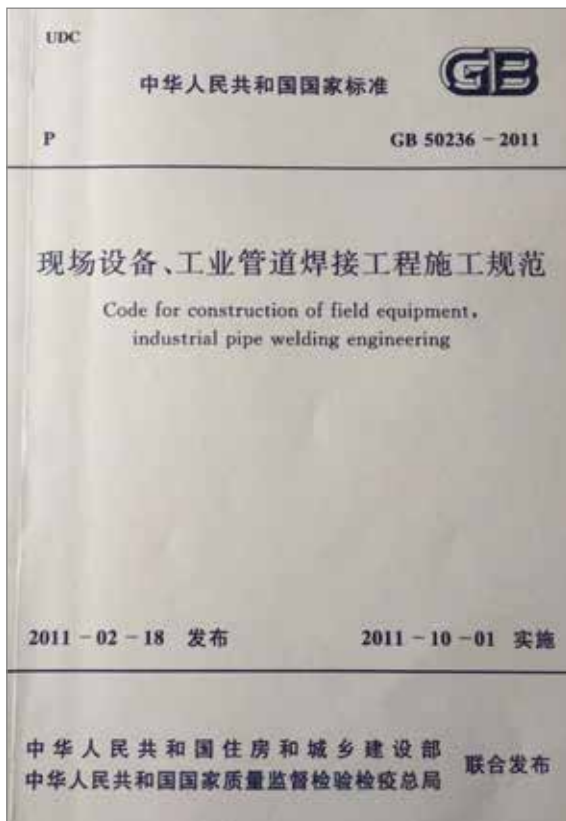
Code for construction of industrial metallic piping engineering  
This Code shall be applicable to the erection of the industrial metal piping with the designed pressure no more than 42MPa and the designed temperature no more than the permitted operation temperature of the piping material.



14. 《工业金属管道工程施工质量验收规范》GB50184—2011

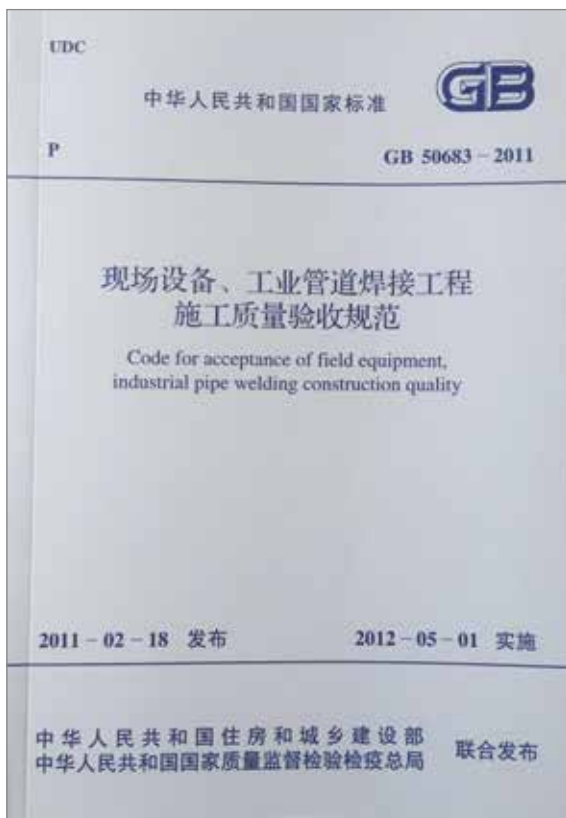
本规范适用于设计压力不大于 42MPa，设计温度不超过材料允许使用温度的工业金属管道工程施工质量的验收。

Code for acceptance of construction quality of industrial metallic piping engineering  
This Code shall be applicable to the quality inspection and acceptance of the industrial metal piping with the designed pressure no more than 42MPa and the designed temperature no more than the permitted operation temperature of the piping material.



15. 《现场设备、工业管道焊接工程施工规范》GB50236-2011  
本规范适用于碳素钢、合金钢、铝及铝合金、铜及铜合金、钛及钛合金、镍及镍合金、锆及锆合金材料的焊接工程的施工。

Code for construction of field equipment industrial pipe welding engineering  
This Code shall be applicable to the welding of carbon steel, alloy steel, aluminum and aluminum alloy, copper and copper alloy, titanium and titanium alloy, nickel and nickel alloy, zirconium and zirconium alloy.



16. 《现场设备、工业管道焊接工程施工质量验收规范》GB50683-2011

本规范适用于碳素钢、合金钢、铝及铝合金、铜及铜合金、钛及钛合金、镍及镍合金、锆及锆合金材料的焊接工程的施工质量的验收。

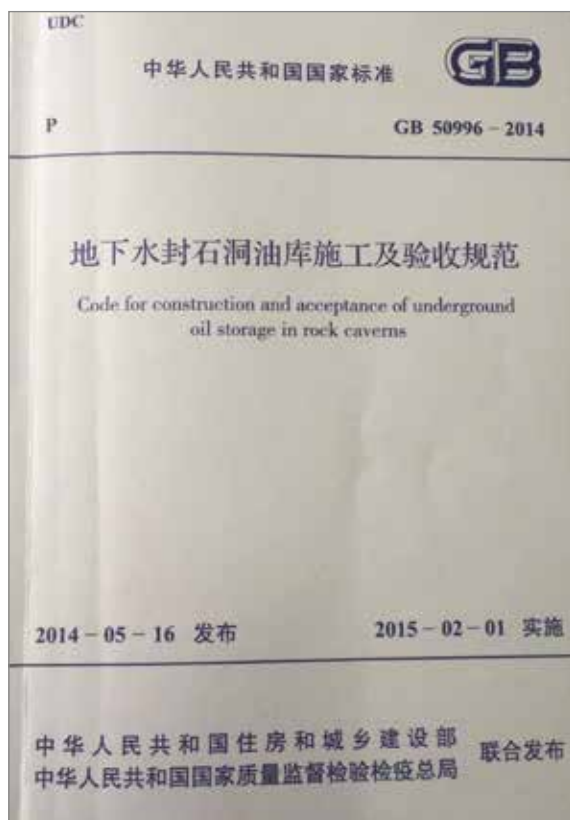
Code for acceptance of field equipment industrial Pipe welding construction quality  
This Code shall be applicable to inspection and acceptance of the welding quality of carbon steel, alloy steel, aluminum and aluminum alloy, copper and copper alloy, titanium and titanium alloy, nickel and nickel alloy, zirconium and zirconium alloy.



17. 《预制组合立管技术规范》GB50682-2011

本规范适用于高层、超高层建筑中预制组合立管的设计、施工及验收。

Technical code for pre-fabricated united pipe risers  
This Code shall be applicable to the design, erection and acceptance of the pre-fabricated standing piping applied in the high or super high buildings.



18. 地下水封石洞油库施工及验收规范 GB50996-2014

本规范适用于储存原油及成品油等地下水封石洞油库工程的施工及验收。

Code for construction and acceptance of underground oil storage in rock caverns  
This Code shall be applicable to the erection and acceptance of stone oil storage caves sealed with underground water where the raw oil and finished oil are reserved.



### 19. 《建设工程分类标准》GB50841-2013

本标准适用于建设工程前期策划、勘察、设计、招投标、施工、咨询等，不适用于军事工程等特殊要求的建设工程。

Standard of construction classification

This Code shall be applicable to the early-stage planning, surveying, designing and engineering, tendering and bidding, construction and consulting etc. of the construction projects except for those having special requirements such as military projects.

### 三、参编的团体标准（2项）



### 20. 《建设工程人工材料设备机械数据分类标准及编码规则》T/BCAT0001-2018

本标准适用于建设工程相关专业和建设项目的全生命周期中的人工材料设备机械信息数据的收集、整理、分析、发布的应用；

Construction project data classification and coding rules of labour, materials, equipments and machines

This Code shall be applicable to the collection, sorting, analysis, publication and application of all the data and information including but not limited to labour, materials, equipment and machines throughout the overall period of the construction projects and all the data related therein.



21. 《北京市优质安装工程奖工程质量评审标准》T/BCAT0003—2018

本标准适用于北京市优质安装工程奖的评审。

Assessment standard for the Beijing premium quality erection project prize  
This Code shall be applicable to the review and assessment of the Beijing Premium Quality Project Award.



# 中国国机重工集团有限公司

## China SINOMACH Heavy Industry Corporation

**公司名称：中国国机重工集团有限公司**  
**Company Name: China SINOMACH Heavy Industry Corporation**

中国国机重工集团有限公司（国机重工）成立于 2011 年 1 月，是世界 500 强企业中国机械工业集团有限公司（国机集团）的二级子公司，是由国机集团旗下工程机械业务资源重组整合改制而成立的大型装备制造企业集团，总部设在北京。

拥有一个国家级工程机械研究院、两个国家级企业技术中心、两个企业博士后科研工作站、一个机械工业质量监督检测中心。在工程机械液压、液力传动、电气传动及控制、结构强度、材料工艺、测试技术等方面的试验研究处在全国前列。

公司所属企业天津工程机械研究院有限公司为全国土方机械标委会秘书处挂靠单位。主要负责包括挖掘装载机、推土机、自卸车、挖掘机、平地机、水平定向钻机、回填压实机、装载机、吊管机、压路机、铲运机、挖沟机等领域的标准化工作。对口国际标准化组织土方机械技术委员会（ISO/TC 127），负责 ISO/TC127 国际标准的国内技术归口管理工作，现管理有 147 项土方机械国际标准。

China SINOMACH Heavy Industry Corporation (SINOMACH Heavy Industry), founded in January 2011, is a wholly-owned subsidiary of China National Machinery Industry Corporation (SINOMACH), which is one of the Fortune 500 enterprises, and is also a large-scale equipment manufacturing group established through restructuring and reform of the resources of the construction machinery business of SINOMACH. Its headquarter is in Beijing, China.

It has a national engineering machinery research institute, two state-level enterprise technology centers, two enterprise post-doctoral research stations, and a mechanical industry quality supervision and testing center. The experimental research department in engineering machinery hydraulics, hydraulic transmission, electric drive and control, structural strength, material technology, testing technology, etc. is in the forefront of the country.

Tianjin Research Institute of Construction Machinery co., Ltd a company affiliated to the company, is the affiliated unit of the National Earth-moving Machinery Standardization Committee Secretariat. Mainly responsible for the standardization in the areas of loader-digger, earth-mover, dumper, excavator, land leveler, horizontal directional driller, back-fill compactor, loader, pipe handler, road roller, scraper, ditcher and etc. Earth-moving machinery committee of relevant international standardization organization (ISO/TC127) is responsible for ISO/TC127 international standards to be centralized managed in China. Now, there are 147 international earth-moving standards.

### 联系人及联系方式

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## 标准 Standards



### 1. 土方机械 司机室环境 第1部分：术语和定义

GB/T 19933 规定了 ISO 6165 中定义的土方机械司机室环境的测试方法和评价准则。GB/T 19933 的本部分给出了 GB/T 19933 其他部分使用的术语和定义。

Earth-moving machinery — Operator enclosure environment—Part 1: Terms and definitions

GB/T 19933 provides test methods and criteria for the evaluation of the operator enclosure environment in earth-moving machinery as defined in ISO 6165. This part of GB/T 19933 gives the terms and definitions which are used in other parts of GB/T 19933.



### 2. 土方机械 液压挖掘机 术语和商业规格

本标准规定了自行履带式和轮胎式液压挖掘机及其工作装置和附属装置的术语和商业文件的技术内容。本标准适用于通用的挖掘机及部件，不适用于步履式挖掘机专用的部件术语或商业规格。

Earth-moving machinery — Hydraulic excavators — Terminology and commercial specifications

This standard specifies the terminology and technical content of commercial documents for self-propelled crawler and tyre hydraulic excavators, their working devices and accessories. This standard is applicable to general excavators and components, not to the part terminology or commercial specifications for walking excavators.



### 3. 土方机械 机器安全标签 通则

本标准规定了牢固粘贴在土方机械上的机器安全标签设计和使用的通则和要求，概述了标志的目的，规定了基本形式和颜色，提供了制定安全标签各组成带的指南。本标准适用于 ISO 6165 定义的土方机械。

#### Earth-moving machinery —Machine safety labels — General principles

This standard specifies the general principles and requirements for the design and use of machine safety labels firmly pasted on earthmoving machinery, outlines the purpose of the labels, specifies the basic forms and colors, and provides guidelines for the formulation of safety label bands. This standard is applicable to earthwork machinery defined in ISO 6165.



### 4. 土方机械 可再利用性和可回收利用性 术语和计算方法

本标准规定了用于计算土方机械（按 ISO 6165 的定义）的可再利用率和可回收利用率的方法以及相关术语的定义，并用占机器质量的百分比（质量百分比）表示。这些机器可能被：

- 再利用和 / 或再使用（可再利用率）；
- 回收利用和 / 或再使用（可回收利用率）。

#### Earth-moving machinery — Recyclability and Recoverability — Terminology and calculation method

This standard specifies the methods and definitions of terms used to calculate the reusability and recyclability of earthmoving machinery (as defined by ISO 6165) and is expressed as a percentage of the quality of the machine (as a percentage of the quality). These machines may be:

- Reuse and/or reuse (reusable);
- Recycling and/or reuse (recyclable utilization rate).



5. 土方机械 履带式机器 制动系统的性能要求和试验方法

本标准规定了履带式机器制动系统的最低性能要求和试验方法，以便对行车制动、辅助制动和停车制动的制动系统进行统一的评定。本标准适用于 GB/T 8498 定义的最大设计速度不大于 20 km/h 的自行履带式机器，也包含带有橡胶履带的派生土方机械。本标准不适用于 GB/T 25609 定义的机器或者加履履带的轮式机器。最大设计速度大于 20 km/h 的履带式机器适用于 GB/T 21152。

Earth-moving machinery — Crawler machines — Performance requirements and test procedures for braking systems

This standard specifies the minimum performance requirements and test methods of the caterpillar machine braking system, so as to make a unified evaluation of the braking systems of driving brake, auxiliary brake and parking brake. This standard is applicable to self-propelled Crawler machines defined by GB/T 8498 with a maximum design speed of not more than 20 km/h, and also includes derivative earth-moving machines with rubber crawlers. This standard does not apply to machines defined in GB/T 25609 or wheeled machines with crawlers. Tracked machines with maximum design speed greater than 20 km/h are suitable for GB/T 21152.



6. 土方机械 滚翻保护结构 实验室试验和性能要求

本标准规定了土方机械金属滚翻保护结构（ROPS）的性能要求，并且规定了实验室试验中对典型试件采用静载荷作用下统一的、可重复的用于评价符合这些要求的方法。

注 1：该结构也可提供 FOPS（落物保护结构）防护。

本标准适用于 GB/T 8498 规定的下列带司机座椅且质量大于 700 kg 的移动式机器：

- 推土机； ——装载机； ——挖掘装载机；
- 自卸车； ——吊管机；
- 组合式机器（例如铲运机，铰接车架自卸车）的牵引部分（主要牵引车）；
- 平地机； ——土方回填压实机；
- 压路机； ——挖沟机。

本标准不适用于教练员座椅或用于附属装置操作的附加座椅。

注 2：希望至少在下列情况下能对系座椅安全带司机提供合理挤压保护：在滚翻方向最大坡度为 30° 的硬粘土路面上，初始前进速度 0 km/h ~ 16 km/h，绕机器的纵轴翻转 360°，而机器始终与坡度没有失去接触。

注 3：本标准可用于指导滚翻保护结构制造商是否决定在特定工况下对这些机器或其他机器提供这种保护。

Earth-moving machinery—Roll-over protective structures—Laboratory tests and performance requirements

This International Standard specifies performance requirements for metallic roll-over protective structures (ROPS) for earth-moving machinery, as well as a consistent and reproducible means of evaluating the compliance with these requirements by laboratory testing using static loading on a representative specimen.

NOTE 1: The structure can also provide FOPS (falling-object protective structure) protection.

This International Standard is applicable to ROPS intended for the following mobile machines with seated operator as defined in ISO 6165 and with a mass greater than or equal to 700 kg:

- dozer; - loader; - backhoe loader; - dumper; - pipelayer;
- tractor section (prime mover) of a combination machine (e.g. tractor scraper, articulated frame dumper);
- grader; - landfill compactor; - roller; - trencher.

This International Standard is not applicable to training seats or additional seats for operation of an attachment.

NOTE 2: It is expected that reasonable crush protection for a seat-belted operator will be provided under at least the conditions of an initial forward velocity of 0 km/h to 16 km/h on a hard clay surface of 30° maximum slope in the direction of roll, and 360° of roll about the longitudinal axis of the machine without loss of contact with the slope.

NOTE 3: This International Standard can be used to provide guidance to the manufacturers of roll-over protective



## 7. 土方机械 轮胎式机器 转向要求

本标准规定了用于评价按 ISO 6014 所测定的行驶速度大于 20 km/h 自行的橡胶轮胎式土方机械转向能力的转向系统试验方法和性能准则。本标准适用于 ISO 6165 中定义的安装机械转向系统、动力助力转向系统或动力转向系统的推土机、装载机、挖掘装载机、挖掘机、自卸车、铲运机和平地机。本标准不适用于压路机、压实机或吊管机。

### Earth-moving machinery — Rubber-tyred machines — Steering requirements

This International Standard specifies steering system tests and performance criteria for evaluating the steering capability of rubber-tyred, self-propelled earth-moving machines having a machine speed, determined in accordance with ISO 6014, greater than 20 km/h. It is applicable to dozers, loaders, back-hoe loaders, excavators, dumpers, scrapers and graders equipped with either manual steering, power-assisted steering or fully powered steering systems as defined in ISO 6165. It is not applicable to rollers, compactors or pipelayers.



## 8. 土方机械 行车声响报警装置和前方喇叭 试验方法和性能准则

本标准规定了 ISO 6165 定义的土方机械上安装的行车声响报警装置和前方喇叭，在工作场地作业和公路行驶时机器声音输出性能的静态测定方法和报警开启要求。本标准提出了实际试验方法理论和性能准则。本标准不规定在特定机器上一个或多个行车声响报警装置或前方喇叭的安装规范，本标准也不规定报警装置功能性及耐久性的实验室试验。

本标准适用于安装在土方机械上的报警装置和喇叭。

### Earth-moving machinery — Machinemounted audible travel alarms and forward horns — Test methods and performance criteria

This International Standard outlines the procedures and sets the criteria necessary to evaluate the audible performance of alarms mounted on earth-moving machines intended to warn personnel of the potential hazard of the machine moving under its own power, either forward or in reverse. The tests are carried out on a stationary machine. Alarm performance on the machine is a function of alarm design, conditions, voltage at the alarm, and placement on the machine with respect to machine components. This procedure verifies that the combination of factors produces an audible alarm. This International Standard applies to earth-moving machinery as defined in ISO 6165.





## 9. 土方机械 发动机净功率试验规范

本标准规定了 ISO 6165 定义的土方机械用发动机净功率的试验规范。本标准对土方机械最终用户提供一种净功率值报告的标准方法。

本标准可适用于：

- a) 往复式内燃机（点燃式或压燃式发动机），但不包括自由活塞式发动机；
- b) 旋转活塞式发动机。

这些发动机可以是自然吸气式发动机，也可以是机械增压器或涡轮增压器的增压式发动机。

注：本标准是 GB/T 21405 的配套标准。两者之间原则性的差异是试验时安装的辅助装置某些冷却设备和压燃式设备（风扇）不同。可通过试验或计算方法从 GB/T 21405 规定的发动机标定功率中扣除必要的设备和辅助装置的功率。符合本标准获得的发动机标定净功率的首选计算方法见附录 A。试验和计算方法都符合本标准的规定。

Earth-moving machinery — Engine test code — Net power

This International Standard specifies a method for testing the net power of internal combustion engines intended for the propulsion of earth-moving machinery as defined in ISO 6165. It is intended to provide a standardized means of reporting net power values to the end user of the earth-moving machines.

It is applicable to:

- a) RIC spark- or compression-ignition engines but excluding free piston engines,
- b) rotary piston engines.

These engines may be naturally aspirated or pressure-charged using either a mechanical pressure-charger or a turbocharger.

NOTE: This International Standard is a companion standard to ISO 14396. The principle differences between the two is the fitting of certain cooling equipment and pressure-charging equipment auxiliaries (fans) for the test. It is possible to deduct the power requirements of equipment and auxiliaries from the engine ratings of ISO 14396 by test or calculation methods. See Annex A for the preferred calculation method for obtaining the net power ratings according to this International Standard. Both the test and the calculation method comply with this International Standard.



## 10. 土方机械 危险监测系统及其可视辅助装置 性能要求和试验

本标准规定了用于土方机械上的危险监测系统（HDS）及其可视辅助装置（VA）性能的一般要求和用于评价与测试的描述方法。包括以下方面：

- 对监视区域中人员的监视；
- 对司机和 / 或监视区域内人员的视觉和 / 或听觉报警；
- 系统的操作可靠性；
- 系统的兼容性和环境说明。

本标准适用于 ISO 6165 定义的机器。HDS 和 / 或 VA 能被用于增加司机的直接视野（见 GB/T 16937）或使用监视镜（见 GB/T 25685）时的间接视野。或者为危险监测提供附加方法，例如：考虑人类工效学对直接视野效果的限制，如：避免头部和身体上部反复转动。

Earth-moving machinery —Hazard detection systems and visual aids — Performance requirements and tests

This International Standard specifies general requirements and describes methods for evaluating and testing the performance of hazard detection systems (HDS) and visual aids (VA) used on earth-moving machines. It covers the following aspects:

- detection of people in the detection zone;
- visual and/or audible warning(s) to the operator and/or to the persons in the detection zone;
- operational reliability of the system;
- compatibility and environmental specifications of the system.

It is applicable to machines as defined in ISO 6165. HDS and/or VA can be used to augment the operator's direct vision (see ISO 5006) or indirect vision using mirrors (see ISO 14401) or to provide additional means of hazard detection, for example, where ergonomic considerations limit the effectiveness of direct vision, e.g. to avoid repeated turning of the head and upper body.



#### 11. 土方机械 防盗系统 分类和性能

本国际标准规定了 ISO 6165 定义的土方机械的防盗系统，将其分为 7 个等级，并对每个等级给出了相应的性能准则。本国际标准对防止盗窃关键文件和盗窃敏感备件的管理给出了建议。本国际标准不适用于带有定位系统的机器。

#### Earth-moving machinery —Anti-theft systems —Classification and performance

This International Standard specifies, and classifies at seven levels, systems for the protection against theft of earth-moving machinery as defined in ISO 6165, and gives performance criteria for each level. It also gives recommendations for managing critical documentation and theft-sensitive spare parts in protection against theft. It is not applicable to tracking systems that monitor the location of a machine.



#### 12. 土方机械 零部件再制造 通用技术规范

本标准规定了土方机械零部件再制造的一般要求和通用技术要求。本标准适用于土方机械零部件再制造。

#### Earth-moving machinery—Remanufacture of components — General technical specifications

This standard specifies the general requirements and general technical requirements for the remanufacturing of earth-moving machinery parts. This standard is applicable to the remanufacturing of earth-moving machinery parts.





### 13. 土方机械 通道装置

本标准规定了为司机提供进入到 ISO 6165 中定义的土方机械上的司机位置和日常维护点的通道装置要求。本标准适用于按制造商说明书要求停放的每一台机器的通道装置（如机壳出入口、平台、护栏、扶手和抓手、阶梯、踏脚和梯子）。本标准基于 ISO 3411 中定义的第 5 百分位至第 95 百分位之间的司机的尺寸。本标准涉及下列重大危险、危险状态和危险事件：人员滑倒、绊倒和跌落，以及不健康的姿势或过度消耗体力。本标准规定的准则可用于机器维修、安装、拆卸、日常维护，选择固定式或便携式的通道系统。

#### Earth-moving machinery — Access systems

This International Standard specifies criteria for systems that provide access to the operator station and to routine maintenance points on earth-moving machinery as defined in ISO 6165. It is applicable to the access systems (e.g. enclosure openings, platforms, guardrails, handrails and handholds, stairways and steps, ladders) on such machines parked in accordance with the manufacturer's instructions. Its criteria are based on the 5th to 95th percentile operator dimensions as defined in ISO 3411. It deals with the following significant hazards, hazardous situations and events: slip, trip and fall of persons, unhealthy postures and excessive effort. The general principles set out in this International Standard can be used for the selection of fixed and/or portable access systems for repairs, assembly, disassembly and longer interval maintenance.



### 14. 土方机械 履带式吊管机

本标准规定了履带式吊管机的分类、要求、试验方法、检验规则、标志、包装、运输与贮存。本标准适用于工作装置为液压传动、机械传动的履带式吊管机。

#### Earth-moving machinery —Crawler pipelayers

This standard specifies the classification, requirements, test methods, inspection rules, marks, packaging, transportation and storage of tracked pipe hangers. This standard is applicable to crawler type pipe hanger with hydraulic and mechanical transmission.



#### 15. 土方机械 轮胎式装载机 技术条件

本标准规定了轮胎式装载机的术语和定义、型号、要求、试验方法、检验规则、标志、包装、运输和贮存等。本标准适用于 GB/T 8498 规定的轮胎式装载机，其他类型的装载机也可参照使用。

#### Earth-moving machinery—Wheeled Loader—Technical specifications

This standard specifies the terms and definitions, models, requirements, test methods, inspection rules, marks, packaging, transportation and storage of tyre loaders. This standard is applicable to tyre loaders specified in GB/T 8498. Other types of loaders can also be used as reference.



#### 16. 土方机械 履带式推土机燃油消耗量 试验方法

本标准规定了发动机额定功率 560 kW 及以下的履带式推土机燃油消耗量的术语和定义、试验项目、试验条件、测量方法、试验方法、试验记录和试验评价。

本标准适用于履带式推土机模拟动作的燃油消耗量的测量。

#### Earth-moving machinery — Fuel consumption for tractor-dozers — Test methods

This standard specifies the terms and definitions of fuel consumption of crawler bulldozers with rated engine power of 560 kW or less, test items, test conditions, measurement methods, test records and test evaluation. This standard is applicable to the measurement of fuel consumption of crawler bulldozers in simulated operation.



#### 17. 土方机械 轮胎式叉装机 技术条件

本标准规定了轮胎式叉装机的术语和定义、型号、要求、试验方法、检验规则以及标志、包装、运输和贮存。

本标准适用于额定装卸载荷不小于 8 000kg 的轮胎式叉装机。

Earth-moving machinery—forklift wheel loader—Technical specifications

This standard specifies the terms and definitions, models, requirements, test methods, inspection rules and signs, packaging, transportation and storage of the tyre fork loader. This standard is applicable to fork loader with rated loading and unloading load not less than 8 000 kg.



#### 18. 土方机械 液压挖掘机 技术条件

本标准规定了液压挖掘机的术语和定义、分类、要求、试验方法、检验规则、标志、包装、运输和贮存。本标准适用于 GB/T 8498 规定的工作质量不大于 200 000 kg 的轮胎式和履带式液压挖掘机。

Earth-moving machinery — Hydraulic excavators — Technical specifications

This standard specifies the terms and definitions, classification, requirements, test methods, inspection rules, marks, packaging, transportation and storage of hydraulic excavators. This standard is applicable to tyre and caterpillar hydraulic excavators whose working quality is not more than 200 000 kg stipulated in GB/T 8498.



#### 19. 土方机械 可持续性 第2部分：再制造

土方机械再制造国际标准能帮助再制造商建立起一种国际通用的、科学合理的、可操作和符合经济性的土方机械再制造技术规范，以提高再制造产品的质量。制定该项标准的主要目的是：为土方机械再制造提供要求和技术指导，提升再制造产品的品质要求，实现土方机械再制造产品的可持续应用。本国际标准规定了土方机械零部件再制造产品的术语和定义、标识和标记要求、工艺流程和信息资料等技术规范。

**Earth-moving machinery — Sustainability — Part 2: Remanufacturing**  
The development of International Standards on earth-moving machine remanufacturing can help remanufacturers to establish a common understanding about technical specifications for remanufacturing and thereby improve the quality of the remanufactured products. The objectives of this document are to: provide general guidance and requirements for remanufacturing earth-moving machines, enhance the quality of remanufactured products, achieve the sustainable application of remanufactured products, and promote the conservation of social resources. This ISO standard gives requirements for identification and labelling, applicable processes, and relevant information for remanufactured components for earth-moving machinery.



#### 20. 土方机械 可持续性 第3部分：二手机器

通过制定土方机械二手机器国际标准，建立起一种国际通用的、科学合理的、可操作和符合经济性的土方机械二手机器技术规范，使交易的二手机器必须符合标准规定的技术规范要求。本标准给出了要求和评估二手土方机器的相关信息。提供的方法用来评估与二手机器有关的制造商在司机手册中提供的信息，以验证二手机器的功能与制造商预期功能的一致性，本标准适用于 ISO 6165 所定义的已经使用又计划转售的土方机械。

**Earth-moving machinery — Sustainability — Part 3: Used machines**  
Developing an International Standard for used earth-moving machines can establish an international, scientific, rational, feasible, and economic specification for used earth-moving machines. Such a standard can help ensure that used machines meet established technical specifications when the machines are resold. This document gives requirements and relevant information for evaluating used earth-moving machines. It provides the means to evaluate a used machine, relative to the information provided by the manufacturer in the operator's manual, in order to verify that the used machine is functional as intended by the manufacturer. This document is applicable to earth-moving machines as defined in ISO 6165 that are used and are planned for to be resold.

# 中国汽车工业工程有限公司

## China Automobile Industry Engineering Corporation

**公司名称：中国汽车工业工程有限公司**  
**Company Name: China Automobile Industry Engineering Corporation**

中国汽车工业工程有限公司成立于 2005 年，由原机械工业第四设计研究院、原机械工业第五设计研究院合并重组成立具有崭新管理模式国际型工程公司。公司以工程设计为基础，工程 EPC 总承包及装备的系统供货为主要业务，致力于项目的精益化设计、低成本建设、低成本运行，承担着汽车、一般机械、医药、电子、民用建筑等行业的规划、设计和工程交钥匙工程，业务已经从单一的机械工厂设计转型升级为从产品选择咨询、工程建设、装备供货、生产指导、培训的全产业链业务。在工程机械、矿山机械、医药、电子、电力、民用建筑等行业的工程设计具备国内一流水平；在汽车生产线承包、工业炉承包、铸造工艺设计具有国内领先水平，随着我国的政策开放和经济全球化，我公司承担大量的合资项目设计和工程承包，通过承担欧美和日系合资项目，已掌握了发达国家机械产品生产的工艺要求，质量标准，技术要求和精益化生产的先进理念。我公司每年承担各类机械工厂设计百余项，民用建筑、监理、勘察、环保项目数百项，大型涂装项目十余项、总装项目数十项、白车身线 3—5 条、工业炉数十台套、铸造线十余条。

China Automobile Industry Engineering Corporation, founded in 2005, by merger and reorganization between SCIVIC Engineering Corporation and The Fifth Institute of Project Planning & Research of Machinery, is an international engineering company with a new management mode. Based on engineering design, with EPC contracting and equipment system supply as the main business, the company is committed to lean design, low cost construction, low running cost, to carry out planning, design and engineering turnkey project for automobile, general machinery, pharmaceutical, electronics, civil construction and other industries. Our business scope has expanded from machinery factory construction design to whole industry chain service, including product selection consultancy, engineering, construction, equipment supply, production guidance and training. Company ranks domestically first-class level in engineering design for construction machinery, mining machinery, medicine, electronics, electric power, civil construction and other industries, and has the leading position in auto production line contracting, industrial furnace contracting, and casting process design. Along with our country's opening up policy and economic globalization, our company has undertaken a large number of joint venture project design and engineering contracting. Through carrying out joint venture projects by Europe and the US and Japan, we has mastered the process requirements, quality standards, technical requirements and the advanced concept of the lean production of mechanical product manufacturing in the developed countries. Our company yearly undertakes more than one hundred various types of machinery factory design, hundreds of civil architecture, supervision, survey, environmental protection projects, more than 10 large painting projects, dozens of GA projects, 3-5 BIW projects, dozens sets of industrial furnaces, and more than 10 casting lines.

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## 标准 Standards



### 1. 《动力机器基础设计规范》GB50040-96（修订）

本规范适用于下列动力机器的基础设计：

1. 活塞式压缩机；
2. 汽轮机组和电机；
3. 透平压缩机；
4. 破碎机和磨机；
5. 冲击机器（锻锤、落锤）；
6. 热模锻压力机；
7. 金属切削机床。

本规范不适用于楼层上的动力机器基础设计。

<Code for design of dynamic machine foundation>

This code applies to the basic design of the following power machines:

1. Piston compressor;
  2. Turbine unit and motor;
  3. Turbine compressor;
  4. Crusher and mill;
  5. Impact machine (forging hammer, drop hammer);
  6. Hot forging press;
- Metal cutting machine tools.

This code does not apply to power machine foundation designs on the floors.



### 2. 《古建筑防工业振动技术规范》GB/T50452-2008

本规范适用于：

1. 工业交通基础设施等布局中古建筑结构的保护；
2. 工业振动对古建筑结构影响的评估和防治。

<Technical specifications for protection of historic buildings against man-made vibration>

This code applies to:

1. Protection of the structure of medieval buildings such as industrial transportation infrastructure;
2. Assessment and prevention of the impact of industrial vibration on the structure of ancient buildings.



3. 《隔振设计规范》GB50463—2008 (修订)

本规范适用于下列情况的隔振设计：

1. 对生产、工作及建筑物的周围环境产生有害振动影响的动力机器的主动隔振。
  2. 对周围环境振动反应敏感或受环境振动影响而不能正常使用的仪器、仪表、机器及建筑物的被动隔振和智能隔振。
- 本规范不适用于由地震、风振、海浪等自然作用引起的振动。

<Code for design of vibration isolation>

This code applies to vibration isolation design in the following situations:

1. Active vibration isolation of power machines for harmful vibrational effects on production, work and the surrounding environment of buildings.
2. Passive vibration isolation and intelligent vibration isolation of instruments, instruments, machines and buildings that are agile to the surrounding environment or are not affected by environmental vibrations.

This code does not apply to vibrations caused by natural effects such as earthquakes, wind vibrations and waves.



4. 《建筑工程容许振动标准》GB50868—2013

本标准适用于建筑工程在工业与环境振动作用下的振动控制和振动影响评价。

本标准不适用于建筑工程在地震及风振作用下的振动控制和振动影响评价，也不适用于古建筑的振动控制和振动影响评价。

<Standard for allowable vibration of building engineering>

This standard is applicable to vibration control and vibration impact assessment of construction engineering under industrial and environmental vibration.

This standard does not apply to vibration control and vibration impact assessment of construction engineering under earthquake and wind vibration, nor to vibration control and vibration impact assessment of ancient buildings.





5. 《建筑振动荷载标准》GB/T51228—2017

本标准适用于工业与民用建筑及构筑物承受人为振动作用时振动荷载的确定，不包括风振、地震等自然现象引起的振动。

<Standard for vibration load of buildings>

This standard is applicable to the determination of vibration loads when industrial and civil buildings and structures are subjected to human vibration, and does not include vibrations caused by natural phenomena such as wind vibration and earthquakes.

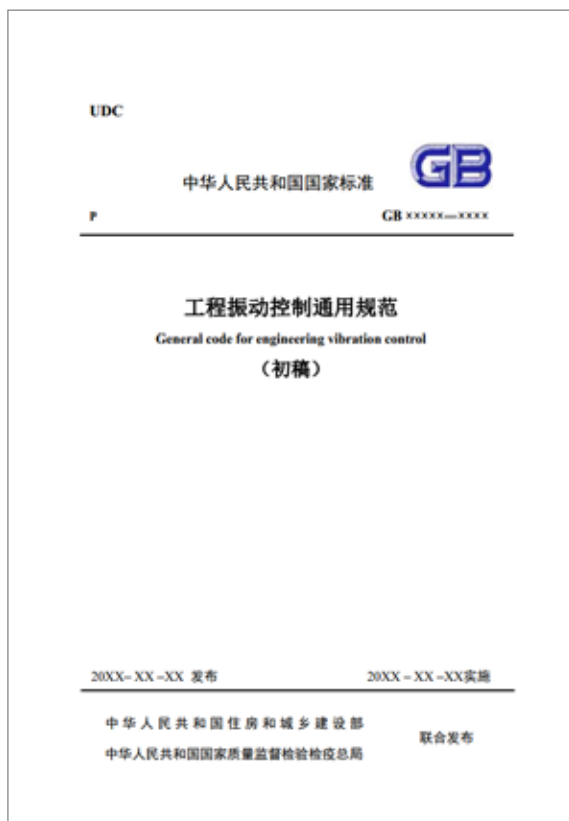


6. 《工程振动术语和符号标准》GB/T51306—2018

本标准适用于建设工程及相关领域的工程振动术语和符号的使用。

<Standard for terms and symbols of engineering vibration>

This standard applies to the use of engineering vibration terms and symbols in construction engineering and related fields.

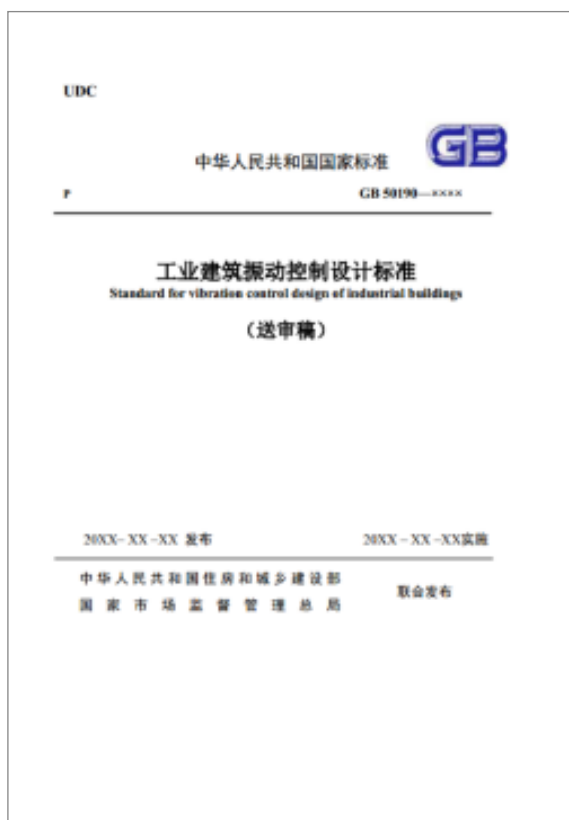


7. 《工程振动控制通用规范》GB\*\*\*-\*\*\*\* (在编)

工程振动控制的设计、施工、验收、维护及拆除等, 必须遵守本规范。

<General code for engineering vibration control>

The design, construction, acceptance, maintenance and dismantling of engineering vibration control must comply with this code.



8. 《工业建筑振动控制设计标准》GB50190-\*\*\*\*

本标准适用于动力设备作用下工业建筑结构振动控制设计。

<Standard for vibration control design of industrial buildings>

This standard is applicable to the vibration control design of industrial building structures under the action of power equipment.

UDC		
	中华人民共和国国家标准	
P		GB 50029—2014
<hr/>		
<b>压缩空气站设计规范</b> Code for design of compressed air station		
<hr/>		
2014—01—09 发布		2014—08—01 实施
<hr/>		
中华人民共和国住房和城乡建设部 中华人民共和国国家质量监督检验检疫总局 联合发布		

9. 《压缩空气站设计规范》GB50029—2014

本规范适用于装有电力驱动、工作压力小于或等于 42MPa 的活塞空气压缩机、隔膜空气压缩机、螺杆空气压缩机、离心空气压缩机的新建、改建、扩建的压缩空气站及其压缩空气管道的设计。

本规范不适用于井下、洞内等特殊场所的压缩空气站及其压缩空气管道的设计。

<Code for design of compressed air station>

This specification applies to the design of new, rebuilt and expanded compressed air stations and compressed air pipelines with piston air compressors, diaphragm air compressors, screw air compressors, and centrifugal air compressors equipped with electric drive and working pressure is less than or equal to 42MPa.

This specification does not apply to the design of compressed air stations and compressed air pipelines in special places such as underground and inside caves.

# 中国重型机械研究院股份公司

China National Heavy Machinery Research Institute Co.,Ltd.

**公司名称：中国重型机械研究院股份公司**  
**Company Name: China National Heavy Machinery Research Institute Co.,Ltd.**

中国重型机械研究院股份公司（西安重型机械研究所）创建于1956年，是我国装备工业最早建立的国家级科研院所之一。2006年在西安重型机械研究所的基础上组建了中国重型机械研究院（简称中国重院）；2012年改制为中国重型机械研究院股份公司，由中国机械工业集团公司和中国宝钢集团共同持股。具有中国建设部颁发的钢铁、建筑工程咨询甲级资质和工程总承包资质；建筑工程设计甲级资质及冶金行业、市政公用燃气工程设计乙级资质。

经过60多年的发展历程，中国重型机械研究院股份公司现已发展成为一家以钢铁冶炼、连铸、轧制、重型锻压/挤压、环保装备技术和工程总承包为主，机、电、液和基础件、工艺设计配套齐全的大型研发设计科技型企业。

中国重型机械研究院股份公司有一支以中国工程院院士为首的百余人的科技专家和数百人的创新研发团队，200余项中国第一、500多项授权专利在这里诞生；累计为国内外钢铁、有色金属行业用户提供了2000多台（套）技术先进的设备和大型成套装备。产品销往美国、韩国、俄罗斯、印度、越南、土耳其、伊朗、缅甸、墨西哥等国家。

## Brief Introduction of Sino-heavymach

Established in 1956 and headquartered in Xi'an, China National Heavy Machinery Research Institute Co., Ltd. (Sino-heavymach for short formerly called Xi'an Heavy Machinery Research Institute) is one of the large-scale, state-owned scientific and technological enterprises in China. Held by China National Machinery Industry Corporation and China Baosteel Group-- two of the global top 500 companies, Sino-heavymach has the grade A qualification of constructional engineering design issued by National Construction Ministry, grade A qualification of steel and iron industry consultation, grade A qualification of building engineering design issued by National Construction Ministry, and grade B qualification of municipal public gas engineering design.

With more than fifty years of development, Sino-heavymach owns an innovative team of almost a thousand R&D experts including member of Chinese Academy of Engineering, and is especially proficient at coking, secondary refining equipment, continuous casting equipment, sheet strip foil rolling equipment, finishing and processing equipment for sheet and strip, steel tube and rod finishing equipment, heavy forging and extrusion equipment, environment-protecting and energy-saving equipment, etc.

Having built its reputation home and abroad, Sino-heavymach provides EPC engineering and complete sets of equipment for Baosteel, Ansteel, Shousteel, WISCO, TISCO, TPCO, Pansteel, etc., as well as many overseas steel makers in South Korea, India, America, Russia, Turkey, Iran, Myanmar, Vietnam, etc., and so far has provided more than 2,000 sets of heavy equipment for iron&steel and non-ferrous metal industries in China.

Sino-heavymach has established the platform of interaction and cooperation with world leading steel enterprises; we guarantee firstclass and high quality equipment and expect win-win cooperation with you.

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## 标准 Standards



### 1. 重型机械通用技术条件 第2部分 火焰切割件 (GB/T 37400.2—2019)

GB/T 37400 的本部分规定了火焰切割件的术语和定义、切割表面质量要求、检测要求、检测方法、切割质量等级要求以及标注方法。

本部分适用于厚度为 6 mm ~ 300 mm 的低碳钢、中碳钢及普通低合金钢的火焰切割，等离子切割可参照执行。

Heavy mechanical general technical specification-Part2: Flame cutting parts

This part of GB/T 37400 specifies the terms and definitions of flame-cut parts, requirements on the quality of the cutting surface, requirements on testing, testing methods, requirements on the cutting quality rating and marking methods.

This part is applicable to the flame cutting of low carbon steel, medium carbon steel and ordinary low alloy steel with the thickness of 6 mm~300 mm. The plasma cutting can be carried out with reference to this part.



### 2. 重型机械通用技术条件 第4部分 铸铁件 (GB/T 37400.4—2019)

GB/T 37400 的本部分规定了铸铁件的技术要求、试验方法、检验规则、标志、质量证明书和包装。

本部分适用于重型机械中用砂型或导热性与砂型相仿的铸型中铸造的灰铸铁件、球墨铸铁件、耐热铸铁件和耐磨铸铁件。其他铸铁件也可参照使用。

Heavy mechanical general technical specification-Part4: Iron castings

This part of GB/T 37400 specifies the technical requirements, test methods, inspection rules, signs, quality certificates and packaging of iron castings.

This part is applicable to grey iron castings, ductile iron castings, heat-resistant iron castings and wear-resistant iron castings, all of which are cast with sand molds or other molds with thermal conductivity similar to that of sand molds. Other iron castings can be carried out with reference to this part.



### 3. 重型机械通用技术条件 第5部分：有色金属铸件（GB/T 37400.5—2019）

GB/T 37400 的本部分规定了有色金属铸件的技术要求、试验方法、检验规则、标志、质量证明书和包装。

本部分适用于重型机械用砂型、金属型、离心铸造方法生产的铜及铜合金铸件、铝合金铸件、锌合金铸件。其他有色金属铸件也可参照使用。

Heavy mechanical general technical specification-Part5: Nonferrous metal casting  
This part of GB/T 37400 specifies the technical requirements, test methods, inspection rules, signs, quality certificates and packaging of non-ferrous metal castings.  
This part is applicable to copper castings, copper alloy castings, aluminum alloy castings and zinc alloy castings with sand molds, metal molds and centrifugal casting methods for heavy machinery. Other non-ferrous metal castings can be carried out with reference to this part.



### 4. 重型机械通用技术条件 第9部分：切削加工件（GB/T 37400.9—2019）

GB/T 37400 的本部分规定了切削加工的一般要求和未注公差，对键槽、孔径和孔距、中心孔、未注表面粗糙度以及允许选用的刀具形状等提出了具体要求。

本部分适用于重型机械产品零件的切削加工。其他产品零件的切削加工也可参照执行。

Heavy mechanical general technical specification-Part9: Machining parts  
This part of GB/T 37400 specifies the general requirements and unnoted tolerances of the machining processes, and proposes specific requirements on the keyway, hole diameter, hole spacing, center hole, unnoted surface roughness and allowed optional tool shape.  
This part is applicable to the machining processes of parts of the heavy machinery. The machining processes of parts of other products can be carried out with reference to this part.



##### 5. 重型机械通用技术条件 第 12 部分: 涂装 (GB/T37400.12—2019)

GB/T 37400 的本部分规定了重型机械产品及其零部件的涂装技术要求及检测要求。

本部分适用于应用在大气、水或土壤腐蚀环境下的厚度不低于 3 mm 的碳钢和低合金钢产品表面涂装。

##### Heavy mechanical general technical specification-Part12: Painting

This part of GB/T 37400 specifies the requirements of heavy machinery products and their parts and components on coating technology, and testing.

This part is applicable to the surface coating of carbon steel and low alloy steel products with the thickness of no less than 3 mm in the atmospheric, water or corrosive soil environment.



##### 6. 重型机械通用技术条件 第 13 部分: 包装 (GB/T37400.13—2019)

GB/T 37400 的本部分规定了重型机械产品的包装件类别、包装材料、货物的防护与固定、包装要求、试验方法、包装标志以及随机文件。

本部分适用于重型机械产品的运输包装。

##### Heavy mechanical general technical specification-Part13: Packaging

This part of GB/T 37400 specifies packaging types, packaging materials, protection and fixing of goods, packaging requirements, test methods, packaging signs and accompanying documents for heavy machinery products.

This part is applicable to the transport packaging of heavy machinery products.





#### 7. 重型机械通用技术条件 第 15 部分：锻钢件无损探伤

GB/T 37400 的本部分规定了锻钢件的超声波、磁粉和渗透检测方法及其质量等级。

本部分适用于重型机械用锻钢件的无损检测。

Heavy mechanical general technical specification—  
Part 15: Nondestructive test of steel forgings

This part of GB/T 37400 specifies the testing methods of forged steel with ultrasonic waves, magnetic powder and penetration, and their quality rating.

This part is applicable to nondestructive testing (NDT) of forged steel for heavy machinery.



#### 8. 行星齿轮传动设计方法 (GB/T 33923—2017)

本标准给出了行星齿轮传动设计的符号，行星齿轮传动的类型和传动比计算、装配要求和配齿方法、系统特性及特殊要求、齿轮设计、均载、零部件设计、热功率计算和润滑等设计指南和规范。

本标准适用于工业、车辆和机床用单级或多级渐开线行星齿轮减速器和增速器的设计，齿轮可以是直齿轮，也可以是斜齿轮，行星架转速低于 1 800 r/min，齿轮的最 转速不超过 4 500 r/min，齿轮的节线速度不大于 35 m/s。

Design methods for planetary gear drives

This standard provides the design guide and specifications, including design symbols, types, transmission ratio calculation, assembling requirements, gear mating methods, system characteristics, special requirements, gear design, load balancing, part and component design, thermal power calculation and lubrication for the planetary gear transmission.

This standard is applicable to the design of single-stage or multi-stage involute planetary gear reducers and speed increasers used in the industry, including vehicles and machine tools. Both spur gears and helical gears can be used. The rotation speed of the planetary gear carrier should be less than 1,800 r/min, the maximum rotation speed of the gear should be no more than 4,500 r/min, and the pitch line speed of the gear should be no more than 35 m/s.



#### 9. 集中润滑系统 第2部分 图形符号 (JB/T 3711.2-2017)

JB/T 3711 的本部分规定了集中润滑系统的图形符号。

本部分适用于集中润滑系统。

Centralized lubrication system-part2: Graphical symbols

This part of JB/T 3711 specifies the graphical symbols of centralized lubrication systems.

This part is applicable to centralized lubrication systems.



#### 10. 带钢连续彩色涂层机组 验收规范 (JB/T 12940-2016)

本标准规定了溶剂型带钢连续彩色涂层机组在线设备的安装精度、机组控制精度和机组保证值的 验收规范。

本标准适用于带钢厚度为 0.12 mm~2.0 mm、宽度为 600 mm~1600 mm，机组速度小于 150 m/min，使用热风烘干带钢的溶剂型带钢连续彩色涂层机组。其他近似规格产品涂层机组也可参照使用。

Steel strip continuously color coating line-Acceptance criterion

This standard specifies the installation precision, the line control precision and the acceptance specification of the line guarantee value regarding the on-line equipment in the solvent-type steel strip continuous color coating line.

This standard is applicable to the solvent-type steel strip continuous color coating line with the steel strip thickness of 0.12 mm~2.0 mm, the steel strip width of 600 mm~1,600 mm, and the line speed of less than 150 m/min, of which the steel strip is dried through hot air. The coating lines of other products with similar specifications can be carried out with reference to this standard.



#### 11. 板带精整与表面处理装备 安全技术条件 (GB/T 35976—2018)

本标准规定了板带精整与处理生产线在设备设计、装配、运输、调试、运行、维护和报废期间的人员安全要求和应采取的安全措施。

本标准适用于金属板带精整与处理生产线的设备设计、装配、运输、调试、运行、维护和报废。本标准不适用于在本标准发布之前制造的板带精整与处理生产线设备。

##### Strip finishing and processing equipment-Safety requirements

This standard specifies the requirements of the strip finishing and processing line on personnel safety and safety measures to be taken during the equipment design, assembling, transportation, commissioning, operation, maintenance and retirement periods.

This standard is applicable to the equipment design, assembling, transportation, commissioning, operation, maintenance and retirement of the metal strip finishing and processing line. This standard is not applicable to the equipment in the strip finishing and processing line which was manufactured before this standard was launched.



#### 12. 电磁搅拌器通用技术条件 (GB/T 33546—2017)

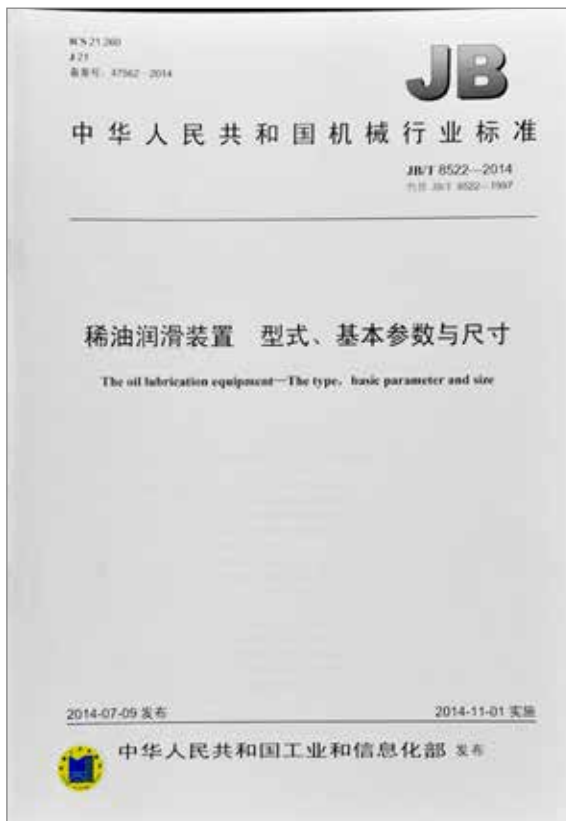
本标准规定了电磁搅拌器的术语和定义、产品型号、使用条件、技术要求、试验方法、检验规则、标志及使用说明、包装、运输和贮存。

本标准适用于各种坯形的连续铸钢（连铸）电磁搅拌器和钢、铝、铜熔炼炉电磁搅拌器，其他电磁搅拌器可参照执行。

##### General technical standard of electromagnetic stirrer

This standard specifies terms, definitions, product models, operating conditions, technical requirements, test methods, inspection rules, signs, instructions for use, packaging, transportation and storage of the electromagnetic stirrer.

This standard is applicable to electromagnetic stirrers for continuous steel castings, and steel, aluminum and copper melting furnaces. The electromagnetic stirrers for other purposes can be carried out with reference to this standard.



### 13. 稀油润滑装置 型式、基本参数与尺寸 (JB/T 8522—2014)

本标准规定了稀油润滑装置的基本参数、系统原理、主要元件与部件、控制要求、型式、尺寸与标记。

本标准适用于机械设备稀油循环润滑系统的稀油润滑装置

The oil lubrication equipment—The type, basic parameter and size

This standard specifies the basic parameters, system principles, main parts and components, control requirements, types, dimensions and signs of the thin oil lubrication device.

This standard is applicable to thin oil lubrication devices for the mechanical equipment with the thin oil circulation lubrication system.



### 14. 带钢连续热镀锌机组 验收规范 (JB/T 12941—2016)

本标准规定了带钢连续热镀锌机组的各在线单体设备、安装精度、控制精度和保证值的验收规范。

本标准适用于带钢厚度为 0.15 mm~4.0 mm、宽度为 700 mm~1600 mm，机组速度不大于 180 m/min 的带钢连续热镀锌机组。其他近似规格产品热镀锌机组也可参照使用。

Steel strip continuously hot-dip galvanizing line—Acceptance criterion

This standard specifies all the online single equipment, the installation precision, the control precision and the acceptance specification of the guarantee value regarding the steel strip continuous hot-dip galvanizing line.

This standard is applicable to the steel strip continuous hot-dip galvanizing line with the steel strip thickness of 0.15 mm~4.0 mm, the steel strip width of 700 mm~1,600 mm, and the line speed of less than 180 m/min. The hot-dip galvanizing lines of other products with similar specifications can be carried out with reference to this standard.



#### 15. 热镀锌机组用活套 (JB/T 12944—2016)

本标准规定了热镀锌机组用活套的术语和定义、型号与标记、基本参数与主要设备参数、技术要求、检验规则、防锈涂装、包装、标志、随机技术文件。

本标准适用于带材厚度为 0.15 mm~4.5 mm、宽度为 500 mm~2 080 mm，抗拉强度 $\leq 1\ 000$  MPa 的热镀锌机组用卧式活套和立式活套。

Looper for hot-dip galvanizing line

This standard specifies terms, definitions, models, marks, basic parameters, main equipment parameters, technical requirements, inspection rules, anti-rust coating, packaging, signs, and accompanying technical documents of loopers in the hot-dip galvanizing line.

This standard is applicable to the horizontal and vertical loopers in the hot-dip galvanizing line with the steel strip thickness of 0.15 mm~4.5 mm, the steel strip width of 500 mm~2,080 mm, and the tensile strength of less than or equal to 1,000 MPa.



#### 16. 液压泵直接传动双柱斜置式自由锻造液压机 (JB/T 12229—2015)

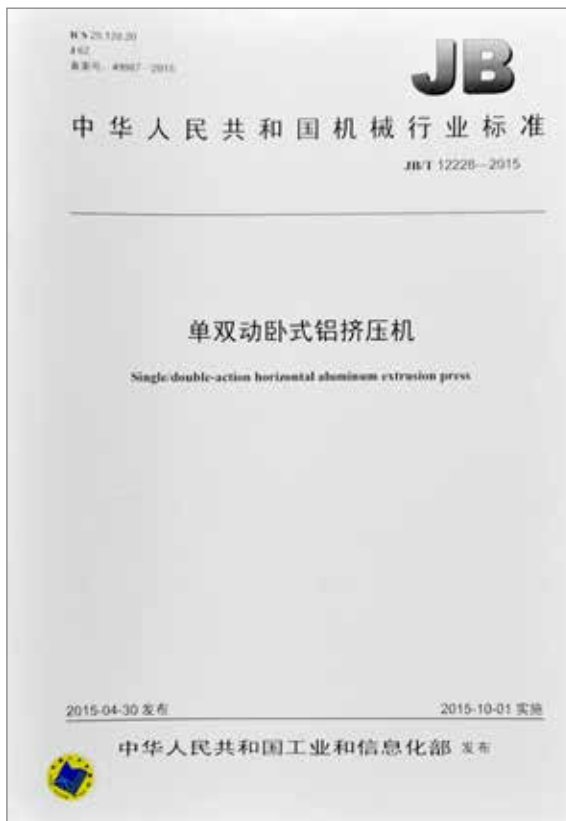
本标准规定了液压泵直接传动双柱斜置式自由锻造液压机的型式与技术参数、技术条件、试验方法、检验及验收规则、标志、包装、运输及贮存。

本标准适用于采用矿物油型液压油为工作介质的液压泵直接传动双柱斜置式自由锻造液压机。

Double-column oblique type open-die forging hydraulic press with direct drive of hydraulic pump

This standard specifies types, technical parameters, technical conditions, test methods, inspection and acceptance rules, signs, packaging, transportation and storage of the double-column oblique type open-die forging hydraulic press with direct drive of hydraulic pumps.

This standard is applicable to double-column oblique type open-die forging hydraulic presses with direct drive of hydraulic pumps adopting the hydraulic mineral oil as the working medium.



#### 17. 单双动卧式铝挤压机 (JB/T 12228—2015)

本标准规定了铝及铝合金液压泵直接传动、单双动卧式正向铝挤压机的产品型式与基本参数、技术要求、制造质量、检验、试验方法、工作精度的检验规则以及标志、包装、运输和贮存。本标准适用于在热状态下挤压铝及铝合金管、棒、型材的单双动卧式正向铝挤压机。

Single/double-action horizontal aluminum extrusion press

This standard specifies product types, basic parameters, technical requirements, production quality, inspection and test methods, inspection rules of the working precision, signs, packaging, transportation and storage of the single/double-action horizontal forward aluminum extruder with direct drive of aluminum and aluminum alloy hydraulic pumps.

This standard is applicable to the single/double-action horizontal forward aluminum extruder to extrude aluminum and aluminum alloy tubes, rods and profiles under hot conditions.



#### 18. 铝型材挤压后部精整系统 (JB/T 13122—2017)

本标准规定了铝型材挤压后部精整系统的型式与基本参数、技术要求、试验方法、检验及验收规则、标志、包装、运输和贮存。本标准适用于对卧式铝挤压机挤压生产的热态铝及铝合金管、棒、型材进行牵引、淬火、传送、冷却、矫直、锯切和自动堆垛等工艺过程的后部精整系统。同时其他行业挤压设备中使用的具有类似工艺过程的后部精整系统可参照执行。

Aluminum profile extrusion handling system

This standard specifies types, basic parameters, technical requirements, test methods, inspection and acceptance rules, signs, packaging, transportation and storage of the finishing system after the aluminum profile is extruded.

This standard is applicable to the aluminum post-extrusion finishing system after hot aluminum and aluminum alloy tubes, rods and profiles produced by horizontal aluminum extruders have undergone drawing, quenching, conveying, cooling, straightening, sawing and automatic stacking processes. Meanwhile, the aluminum post-extrusion finishing system with similar processes used by extrusion equipment in other industries can be carried out with reference to this standard.





#### 19. 铝型材辊式矫正机 (JB/T 13121—2017)

本标准规定了铝型材辊式矫正机的产品型式与基本参数、技术要求、试验方法、检验及验收规则、标志、包装、运输和贮存。本标准适用于在常温状态下进行铝型材截面矫正的辊式矫正机，其他行业中类似的矫正机可参照执行。

##### Aluminum profile straightening machine

This standard specifies product types, basic parameters, technical requirements, test methods, inspection and acceptance rules, signs, packaging, transportation and storage of the aluminum profile roller straightener.

This standard is applicable to the roller straightener to correct the cross-section of aluminum profiles under normal temperature. The similar straighteners in other industries can be carried out with reference to this standard.



#### 20. 单双动反向卧式铝挤压机 (JB/T 13114—2017)

本标准规定了液压泵直接传动的单双动反向卧式挤压机的型式与基本参数、技术要求、试验方法、检验及验收规则以及标志、包装、运输和贮存。

本标准适用于在热状态下挤压铝及铝合金管、棒、型材的单双动反向卧式挤压机。其他行业中使用的类似的挤压机可参照执行。

##### Single/double-action indirect horizontal aluminum extrusion press

This standard specifies types, basic parameters, technical requirements, test methods, inspection and acceptance rules, signs, packaging, transportation and storage of the single/double-action reverse horizontal extruder with direct drive of hydraulic pumps.

This standard is applicable to the single/double-action horizontal reverse horizontal extruder to extrude aluminum and aluminum alloy tubes, rods and profiles under hot conditions. Similar extruders in other industries can be carried out with reference to this standard.





## 21. 铝型材拉伸矫直机 (JB/T 13123-2017)

本标准规定了铝型材拉伸矫直机的型式与基本参数、技术要求、试验方法、检验及验收规则、标志、包装、运输和贮存。

本标准适用于由液压泵直接驱动、采用卧式钳口对夹式结构、在常温状态下对铝型材进行张力矫正的拉伸矫直机。

### Aluminum profile stretch and straightening machine

This standard specifies types, basic parameters, technical requirements, test methods, inspection and acceptance rules, signs, packaging, transportation and storage of the aluminum profile stretching straightener.

This standard is applicable to the stretching straightener which is directly driven by the hydraulic pump, adopts the horizontal clamp structure, and is used to correct the aluminum profile tension under normal temperature.



## 22. 冷轧管机 (JB/T 5786-2014)

本标准规定了具有往复运动特征的周期式冷轧管机的产品种类、性能与技术要求、试验方法、检验规则、标志、包装、运输和贮存。本标准适用于轧制坯料为碳钢、合金钢、不锈钢及有色金属管的周期式往复轧制的轧管机。

### Cold pipe reduced mill

This standard specifies product types, performance, technical requirements, test methods, inspection rules, signs, packaging, transportation and storage of the cold-rolling pilger mill featured with the reciprocating motion.

This standard is applicable to the cyclic reciprocating rolling pilger mill with carbon steel, alloy steel, stainless steel and non-ferrous metal pipes as rolled billets.



### 23. 多辊式冷轧管机 主参数 (JB/T 2476-2014)

本标准规定了多辊式圆断面冷轧管机的主参数。

本标准适用于冷轧各种材质精密、薄壁无缝管材的单线或多线多辊式冷轧管机。

Main specifications of multi-roll cold pipe reduced mill

This standard specifies main parameters of the multi-roller circular cross-section cold rolling mill.

This standard is applicable to single- or multi-line multi-roller cold rolling mills for cold-rolling precise, thin-walled and seamless pipes which are made of various materials.



### 24. 二辊式冷轧管机 主参数 (JB/T 2477-2014)

本标准规定了二辊式冷轧管机的主参数。

本标准适用于冷轧各种材质无缝管材的二辊式冷轧管机。

Main specifications of two-roll cold pipe reduced mill

This standard specifies the main parameters of the two-roller cold rolling mill.

This standard is applicable to the two-roller cold rolling mill for cold-rolling seamless pipes which are made of various materials.



## 25. 冷轧管机 噪声测量与限值 (JB/T 9048-2017)

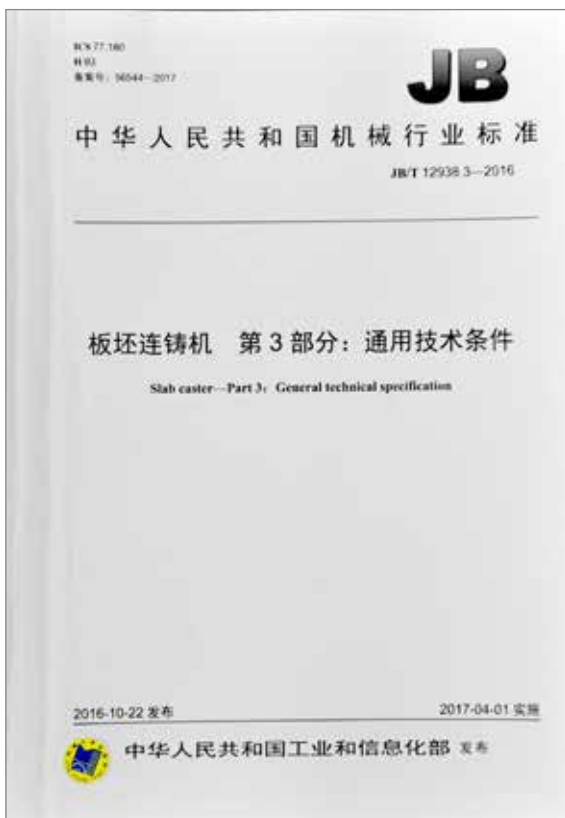
本标准规定了冷轧管机的噪声测量方法与限值。

本标准适用于各种冷轧管机在空载及  $2/3$  最高电动机转速下的噪声测量与评定。

Cold tube mill- Noise measurement and limits

This standard specifies the noise measurement methods and limits of the cold rolling mill.

This standard is applicable to the noise measurement and evaluation of all kinds of cold rolling mills under no-load and two thirds of the maximum motor rotation speed.



## 26. 板坯连铸机 第3部分：通用技术条件 (JB/T 12938.3-2016)

JB/T 12938 的本部分规定了板坯连铸机浇钢设备和本体设备的技术要求、试验方法、检验规则、标志、包装、运输和贮存。本部分适用于板坯连铸机，其他相似的结构也适用于本标准。

Slab caster-Part3: General technical specification

This part of GB/T 12938 specifies the technical requirements, test methods, inspection rules, signs, packaging, transportation and storage of the steel pouring equipment of the continuous slab caster and the continuous slab caster by itself.

This part is applicable to continuous slab casters, and other similar structures.



#### 27. 板坯连铸机 第4部分：验收规范 (JB/T 12938.4-2016)

JB/T 12938 的本部分规定了板坯连铸机设备中主要设备的出厂验收。

本部分适用于板坯连铸机设备中主要设备安装后的单机冷负荷、联动试车验收。

##### Slab caster-Part4: Acceptance standard

This part of JB/T 12938 specifies the ex-factory acceptance of the main equipment in the continuous slab caster.

This part is applicable to the stand-alone cooling load acceptance test and combined acceptance test after main equipment has been installed in the continuous slab caster.



#### 28. 六辊带材冷轧机 (JB/T 11593-2013)

本标准规定了六辊带材冷轧机的结构型式、基本参数、技术条件、试验方法、检验和包装。

本标准适用于带有厚度自动控制、中间辊横移、液压弯辊的六辊带材冷轧机。

##### Six-high strip cold rolling mill

This standard specifies structure types, basic parameters, technical conditions, test methods, inspection and packaging of the six-roller strip cold rolling mill.

This standard is applicable to the six-roller strip cold rolling mill with the automatic thickness control function, the middle roller horizontal shifting function and hydraulic bending roller.



### 29. 冷轧圆盘剪 (JB/T 11585—2013)

本标准规定了冷轧纵切圆盘剪和冷轧切边圆盘剪的型号、规格、基本参数、技术要求、检验规则、检验（试验）方法、标志、包装、运输和贮存。

本标准适用于厚度为 0.18 mm~3.0 mm，抗拉强度  $\leq 1\,000$  MPa 的冷轧带材纵切圆盘剪和切边圆盘剪。

Disc shears for cold rolling strip

This standard specifies types, specifications, basic parameters, technical requirements, inspection rules, inspection (test) methods, signs, packaging, transportation and storage of the cold rolling vertical cutting disc shear and the cold rolling trimming disc shear.

This standard is applicable to the cold rolling strip vertical cutting disc shear and trimming disc shear with the thickness of 0.18 mm~3.0 mm, and the tensile strength of less than or equal to 1,000 MPa.



### 30. 冷轧金属板带精整剪切成套设备 重卷生产线 (JB/T 11591—2013)

本标准规定了金属带材重卷、切边、检验、分卷生产线成套装备的基本参数、技术要求、设备组成与功能、检验规则、检验（试验）方法、包装、标志、运输和贮存。

本标准适用于生产线中心线作为板带运行基准，带厚 0.18 mm~3.0 mm、抗拉强度  $\leq 1\,000$  MPa 的金属带材重卷生产线成套装备，其他规格产品也可参照使用。

Finishing-shearing equipment set for cold rolling strip \_The recoiling line

This standard specifies the basic parameters, technical requirements, equipment compositions and functions, inspection rules, inspection (test) methods, packaging, signs, transportation and storage of the complete set of equipment in the metal strip rewinding, trimming and dividing production lines.

This standard is applicable to the complete set of equipment in the metal strip rewinding production line with the centerline of the production line as the benchmark for the strip operation, the strip thickness of 0.18 mm~3.0 mm and the tensile strength of less than or equal to 1,000 MPa, and products with other specifications can be carried out with reference to this standard.



### 31. 冷轧金属板带精整剪切成套装备 纵切生产线 (JB/T 11592-2013)

本标准规定了金 带材纵切分条、检 、卷取生产线成套装备的基本参数、技术要求、设备组成与功能、检验规则、检验（试验）方法、包装、标志、运输和贮存。

本标准适用于生产线中心线作为板带运行基准，带厚 0.18 mm~3.0 mm、抗拉强度 $\leq 1\ 000$  MPa 的金属带材纵切生产线成套装备，其他规格产品也可参照使用。

Finishing-shearing equipment set for cold rolling strip \_The slitting line

This standard specifies the basic parameters, technical requirements, equipment compositions and functions, inspection rules, inspection (test) methods, packaging, signs, transportation and storage of the complete set of equipment in the metal strip vertical cutting and dividing, inspection and coiling production lines.

This standard is applicable to the complete set of equipment in the metal strip vertical cutting production line with the centerline of the production line as the benchmark for the strip operation, the strip thickness of 0.18 mm~3.0 mm and the tensile strength of less than or equal to 1,000 MPa, and products with other specifications can be carried out with reference to this standard.



### 32. 冷轧金属板带精整剪切成套装备 横切生产线 (JB/T 11590-2013)

本标准规定了金属板带横切、切边、检 、分选、堆垛生产线成套装备的基本参数、技术要求、设备组成与功能、检验规 、检验（试验）方法、包装、标志、运输和贮存。

本标准适用于生产线中心线作为板带运行基准，带厚 0.18 mm~3.0 mm，抗拉强度 $\leq 1\ 000$  MPa 的金属板带横切生产线成套装备，其他规格产品也可参照使用。

Finishing-shearing equipment set for cold rolling strip \_The cut-to-length line

This standard specifies the basic parameters, technical requirements, equipment compositions and functions, inspection rules, inspection (test) methods, packaging, signs, transportation and storage of the complete set of equipment in the metal strip horizontal cutting, trimming, sorting and stacking production lines.

This standard is applicable to the complete set of equipment in the metal strip horizontal cutting production line with the centerline of the production line as the benchmark for the strip operation, the strip thickness of 0.18 mm~3.0 mm and the tensile strength of less than or equal to 1,000 MPa, and products with other specifications can be carried out with reference to this standard.



### 33. 轧制设备 术语 (GB/T 33223—2016)

本标准界定了钢和有色金属压力加工用各种轧机及其辅助设备、轧材深加工设备的基本和常用术语。

本标准适用于一般工艺术语、加热炉、轧机名称、工作机座及其轧辊传动、轧机主要零部件、剪切设备、矫直设备、输送和导卫设备、热处理精整设备、表面加工设备、轧材收集和捆包设备、轧材深加工设备、冷却和润滑设备、检测、控制与自动化系统等方面的术语及其定义和 / 或释义。

#### Rolling equipment-Terminology

This standard defines the basic and common terms for various rolling mills and their auxiliary equipment, and rolled material deep processing equipment.

This standard is applicable to general process terms, and specific terms and definitions and/or explanations regarding heating furnace and rolling mill names, working stands, roller driving systems, rolling mill's main parts and components, shears, straighteners, conveying and guiding equipment, heat treatment finishing equipment, surface processing equipment, rolled material collection and bundling equipment, rolled material deep processing equipment, cooling and lubrication equipment, testing, control and automation systems.



### 34. 高精度四辊带材液压轧机 (JB/T 5788—2013)

本标准规定了 精度四辊带材液压轧机的结构型式、基本参数、技术条件、试验方法、检验和包装。

本标准适用于带有厚度自动控制的中小型精密四 带材冷轧机。无厚度自动控制的中小型精密四辊带材冷轧机亦可参照执行。

#### High accuracy four-high strip hydraulic mill

This standard specifies structure types, basic parameters, technical conditions, test methods, inspection and packaging of the four-roller strip hydraulic rolling mill.

This standard is applicable to the small and medium precision four-roller strip cold rolling mill with the automatic thickness control function (hereinafter referred to as the four-roller hydraulic rolling mill). Small and medium precision four-roller strip cold rolling mills without the automatic thickness control function can be carried out with reference to this standard.





### 35. 二十辊带材冷轧机 (JB/T 5787—2013)

本标准规定了二十辊带材冷轧机的结构型式、基本参数、技术条件、试验方法、检验和包装。

本标准适用于轧机机架为整体封闭式、带有厚度自动控制的二十辊带材冷轧机。

#### Twenty-high strip cold rolling mill

This standard specifies structure types, basic parameters, technical conditions, test methods, inspection and packaging of the twenty-roller strip cold rolling mill.

This standard is applicable to the twenty-roller strip cold rolling mill with the automatic thickness control function and the closed rolling mill rack.



### 36. 废边卷取机 (JB/T 11598—2013)

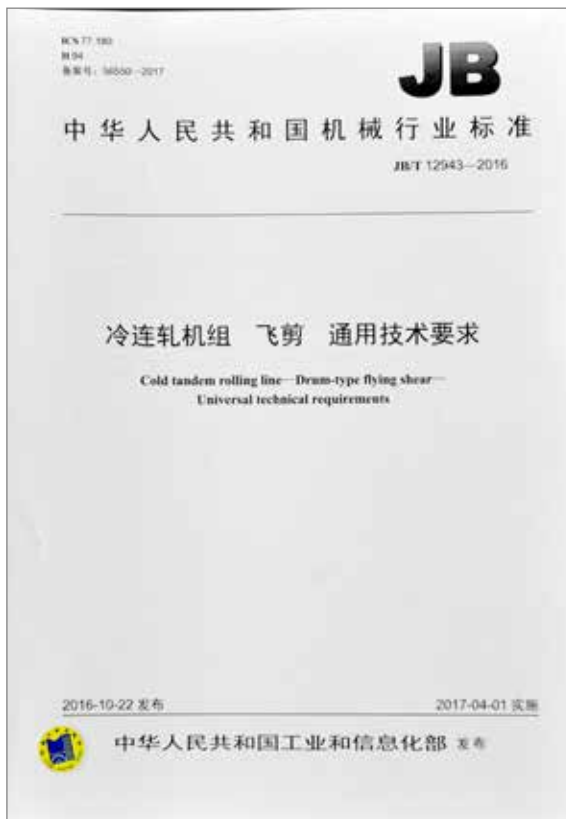
本标准规定了废边卷取机的技术要求、试验方法、检验规则及标志、包装、运输和贮存。

本标准适用于冶金设备移动卷轴式和推笼式废边卷取机。

#### Scrap baller—Technical requirements

This standard specifies technical requirements, test methods, inspection rules, signs, packaging, transportation and storage of the trimming coiler.

This standard is applicable to the movable reel-winding trimming coiler and the cage-pushing trimming coiler for metallurgical equipment.



### 37. 冷连轧机组 飞剪 通用技术要求 (JB/T 12943—2016)

本标准规定了冷连轧机组飞剪的技术要求和检验规则。

本标准适用于冶金设备螺旋刃冷连轧机组飞剪。

Cold tandem rolling line—Drum-type-flying shear—Universal technical requirements

This standard specifies the technical requirements and inspection rules of the flying shear in the continuous cold rolling mill line.

This standard is applicable to the flying shear in the spiral blade cold rolling mill line for metallurgical equipment.



### 38. 带材拉伸弯曲矫直机 (JB/T 12939—2016)

本标准规定了金属带材拉伸弯曲矫直机的基本参数、技术要求、设备组成与功能、检验规则、检验（试验）方法、包装、标志、运输和贮存等。

本标准适用于以生产线中心线作为板带运行基准，带厚 0.15 mm~3.0 mm，抗拉强度 ≤ 800 MPa 的连续金属带材拉伸弯曲矫直机成套装备，其他规格产品也可参照使用。

Tension leveller for strip

This standard specifies the basic parameters, technical requirements, equipment compositions and functions, inspection rules, inspection (test) methods, packaging, signs, transportation and storage of the metal strip stretch-bending straightener.

This standard is applicable to the complete set of equipment in the metal strip stretch-bending straightener with the centerline of the production line as the benchmark for the strip operation, the strip thickness of 0.15 mm~3.0 mm and the tensile strength of less than or equal to 800 MPa, and products with other specifications can be carried out with reference to this standard.



#### 39. 冷轧带材精整与处理生产线 开卷机、卷取机 (JB/T 6995—2016)

本标准规定了用于冷轧钢带材精整与处理生产线的开卷机与卷取机的术语和定义、型号与标记、基本参数与主要设备参数、技术要求、检验规则、防锈涂装、标志、包装、随机技术文件。本标准适用于厚度为 0.18 mm ~ 3.0 mm、宽度为 450 mm ~ 1 850 mm、抗拉强度 $\leq 1\ 000$  MPa 的冷轧钢带材的五机架冷连轧、双机架冷连轧、单机架轧机、单机架平整机后精整与处理生产线的开卷机与卷取机。

Strip finishing and processing department line uncoil, coiling machine  
This standard specifies terms, definitions, models, marks, basic parameters, main equipment parameters, technical requirements, inspection rules, anti-rust coating, packaging, signs, packaging and accompanying technical documents of the uncoiler and coiler to finish and process cold-rolled steel strips in the production line. This standard is applicable to uncoilers and coilers in the finishing and processing production lines after the cold-rolled steel strips with the thickness of 0.18 mm~3.0 mm, the width of 450 mm~1 850 mm and the tensile strength of less than or equal to 1,000 Mpa were processed by the five-stand continuous cold rolling mill, the two-stand continuous cold rolling mill, the single-stand temper mill.

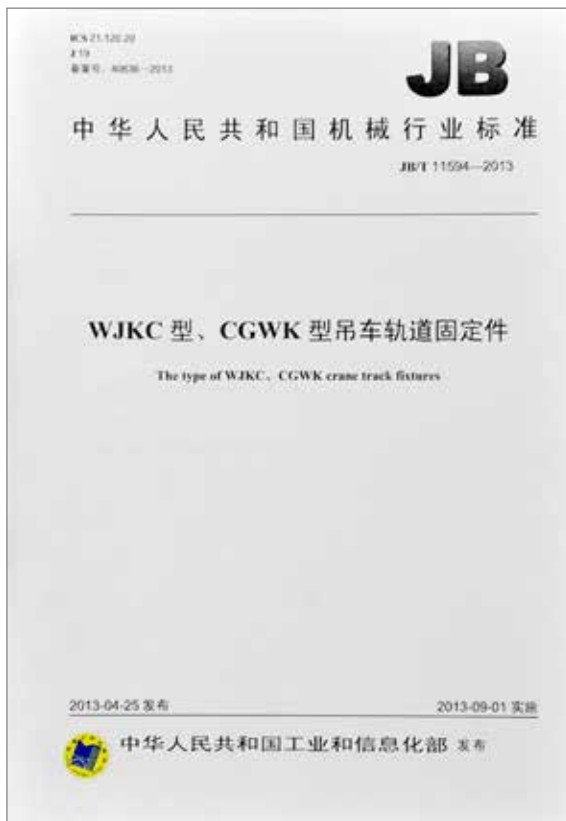


#### 40. 卧式双动黑色金属挤压机 (JB/T 12470—2015)

本标准规定了卧式双动黑色金属挤压机的型式与基本参数、技术要求、试验方法、检验及验收规则，以及标志、包装、运输和贮存。

本标准适用于热态下挤压碳素钢、低合金钢、不锈钢、高温合金、难熔金属及难变形金属的管、棒、型材的卧式双动黑色金属挤压机；适用于四柱式 应力框架结构型式，以及主要采用矿物油型液压油为工作介质的液压泵直接传动或液压泵—蓄势器传动方式，而介质压力在 25 MPa ~ 31.5 MPa 的卧式双动黑色金属挤压机。

Double-action horizontal heavy metal extrusion press  
This standard specifies types, basic parameters, technical requirements, test methods, inspection and acceptance rules, signs, packaging, transportation and storage of the horizontal double-action black metal extruder. This standard is applicable to horizontal double-action black metal extruders to extrude tubes, rods and profiles made of carbon steel, low alloy steel, stainless steel, high-temperature alloy, refractory metal and hardly deformable metal in the hot status, and horizontal double-action black metal extruders with the four-column prestressed frame structure, and the direct drive of hydraulic pumps adopting hydraulic mineral oil as the working medium with the medium pressure of 25 MPa~31.5 MPa or the hydraulic pump-accumulator transmission method.



#### 41. WJKC 型、CGWK 型吊车轨道固定件 (JB/T 11594—2013)

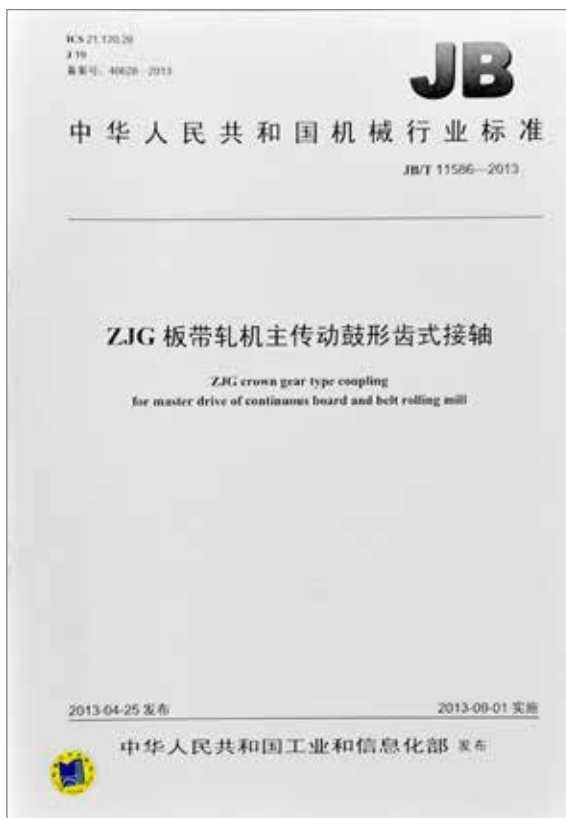
本标准规定了 WJKC 型、CGWK 型轨道固定件的结构、尺寸、标识、技术要求以及包装和贮存。

本标准适用于大吨位软钩起重机及带水平导向轮起重机轨道的固定件。

The type of WJKC, CGWK crane track fixtures

This standard specifies structures, dimensions, identifications, technical requirements, packaging and storage of WJKC and CGWK-type rail fixings.

This standard is applicable to rail fixings of large soft-hook cranes and cranes with horizontal guide wheels.



#### 42. ZJG 板带轧机主传动鼓形齿式接轴 (JB/T 11586—2013)

本标准规定了 ZJG 板带轧机主传动鼓形齿式接轴（以下简称接轴）的结构形式、基本参数和主要尺寸、标记、技术要求、试验方法、检验规则、标志、包装和贮存。

本标准适用于连接板带轧机轧辊与齿轮机座输出轴两个传动轴系的接轴。

ZJG crown gear type coupling for master drive of continuous board and belt rolling mill

This standard specifies structure types, basic parameters, main dimensions, marks, technical requirements, test methods, inspection rules, signs, packaging and storage of the drum-shaped teeth-shaft (hereinafter referred to as the shaft) of the main drive of the ZJG strip rolling mill.

This standard is applicable to shafts connecting rollers of the strip rolling mill to two transmission shafts on the output shaft of the gear stand.



#### 43. 电梯钢丝绳在线预张拉管式成绳机 (JB/T 12047—2014)

本标准规定了捻制电梯钢丝绳在线预张拉管式成绳机的型式与技术参数、技术要求、试验方法、检验及验收规则，标志、包装、运输及贮存和制造保证。

本标准适用于捻制直径 22 mm 以下在线预张拉电梯钢丝绳管式成绳机。

Tubular closer with pre-stretching online for elevator steel wire ropes

This standard specifies types, technical parameters, technical requirements, test methods, inspection and acceptance rules, signs, packaging, transportation, storage and production warranties of the online pretension tubular rope making machine for lifts' wire ropes.

This standard is applicable to online pretension tubular rope making machines to produce wire ropes with the diameter of less than 22 mm for lifts.



#### 44. 冶金烧结厂用圆筒造粒混料机 (JB/T 12049—2014)

本标准规定了冶金烧结厂用圆筒造粒混料机的结构型式、标记、基本参数、技术要求、试验方法、检验规则、标志和使用说明书、包装、运输和贮存等。

本标准适用于钢铁冶金烧结原料混合及制粒、有色金属浸取工艺专用的混料机。

Cylinder pellet mixer for metallurgical sintering plant

This standard specifies structure types, marks, basic parameters, technical requirements, test methods, inspection rules, signs, instructions for use, packaging, transportation and storage of the cylinder granulation mixer for metallurgical sintering plants.

This standard is applicable to mixers which are used for mixing iron and steel metallurgy sintered raw materials, granulation and non-ferrous metal leaching process.



#### 45. 铜冷却壁 (GB/T 31048—2014)

本标准规定了铜冷却壁的技术要求、试验方法、检验规则及标志、包装、运输、贮存等内容。

本标准适用于以热轧制或锻压加工的紫铜板坯为铜冷却壁本体材料，采用钻孔和焊接等加工方法形成完整水流通道的高炉用铜冷却壁。

##### Copper stave

This standard specifies technical requirements, test methods, inspection rules, signs, packaging, transportation and storage of the copper stave.

This standard is applicable to copper staves for blast furnaces which are processed as follows: hot rolled or forged copper slabs serve as the body material of the copper stave, and then the copper slabs are processed with drilling and welding methods to produce the copper stave with a complete water channel.



#### 46. 锥齿轮圆柱齿轮减速器 (JB/T 8853—2015)

本标准规定了锥齿轮圆柱齿轮减速器的型号、标记与尺寸、基本参数、技术要求、承载能力与选用方法等。

本标准适用于环境温度为  $-20^{\circ}\text{C}$  ~  $45^{\circ}\text{C}$  的减速器。

##### Bevel cylindrical gear units

This standard specifies types, marks, dimensions, basic parameters, technical requirements, carrying capacity and selection methods of the bevel cylindrical gear reducer.

This standard is applicable to reducers under the ambient temperature of  $-20^{\circ}\text{C}$ ~ $45^{\circ}\text{C}$ .



#### 47. 机械无级变速器分类及型号编制方法 (JB/T 7683-2015)

本标准规定了机械无级变速器的分类和型号编制方法。

本标准适用于机械无级变速器

**Mechanical continuously variable transmission classifications and mode method**  
This standard specifies classifications and model preparation methods of the mechanical continuously variable transmission.  
This standard applies to the mechanical continuously variable transmission.



#### 48. 圆弧圆柱蜗杆减速器 (JB/T 7935-2015)

本标准规定了圆弧圆柱蜗杆减速器的型式、基本参数与尺寸、技术要求、润滑、试验方法与检验规则、标志、包装运输和贮存。本标准规定的减速器适用于机械设备的减速传动。

**ZC<sub>1</sub> worm gear units**

This standard specifies types, basic parameters, dimensions, technical requirements, lubrication, test methods, inspection rules, signs, packaging, transportation and storage of the arc cylindrical worm reducer.

The reducers specified in this standard are applicable to the reduction drive of mechanical equipment.





#### 49. CGEK 型、CGGK 型轨道固定件 (JB/T 12472-2015)

本标准规定了 CGEK 型及 CGGK 型轨道固定件的结构型式与基本参数、标记、技术要求、验收规则、试验方法、标志、包装和贮存。本标准适用于冶金、矿山、有色、港口机械等行业的钢轨固定：适用于轻轨 22、24、30，铁路钢轨 38、43、50、60，起重机钢轨 QU70、QU80、QU100、QU120 用的 CGEK 型、CGGK 型轨道固定件。

The type of CGEK, CGGK track fixtures

This standard specifies structure types, basic parameters, marks, technical requirements, inspection rules, test methods, signs, packaging and storage of CGEK and CGGK-type rail fixings.

This standard is applicable to the rail fixing in metallurgical, mining, nonferrous metal and port machinery industries: CGEK and CGGK-type rail fixings for 22kg, 24kg and 30kg light rails, 38kg, 43kg, 50kg and 60kg railway rails, as well as QU70, QU80, QU100 and QU120 crane rails.



#### 50. 减（增）速器试验方法 (JB/T 5558-2015)

本标准规定了减（增）速器试验方法和数据处理方法。

本标准适用于高速轴转速不超过 3 000 r/min 的圆柱齿轮减（增）速器、锥齿轮减（增）速器、行星齿轮减（增）速器、蜗轮蜗杆减（增）速器以及各类组合式减（增）速器。

Test method of reduction (increaser) gear units

This standard specifies test methods and data processing methods of the reducer (speed increaser).

This standard is applicable to cylindrical gear reducers (speed increasers), bevel gear reducers (speed increasers), planetary gear reducers (speed increasers), worm gear and worm reducers (speed increasers), and various combined reducers (speed increasers).



#### 51. 锥面包络圆柱蜗杆减速器 (JB/T 5559—2015)

本标准规定了锥面包络圆柱蜗杆减速器的型式、基本参数与尺寸、技术要求、润滑、试验方法与检验规则、承载能力与选用方法等。

本标准适用于机械设备的减速传动的减速器。

#### Milled helicoid worm gear units

This standard specifies types, basic parameters, dimensions, technical requirements, lubrication, test methods, inspection rules, carrying capacity and selection methods of the cone enveloping cylindrical worm reducer.

This standard is applicable to reducers in the reduction drive system of mechanical equipment.



#### 52. 圆柱齿轮减速器 第1部分：通用技术条件 (JB/T 9050.1—2015)

JB/T 9050 的本部分规定了圆柱齿轮减速器的技术要求、试验、检验和标志、包装、运输。

本部分适用于低速级中心距  $\alpha \leq 1\,000\text{ mm}$  的单级、两级、三级和四级圆柱齿轮减速器，也适用于低速级行星架半径  $R \leq 300\text{ mm}$  单级、两级、三级行星齿轮减速器。

#### Cylindrical reduction gear units -Part1: General technical requirement

This part of GB/T 9050 specifies technical requirements, tests, inspection, signs, packaging and transportation of the cylindrical gear reducer.

This part is applicable to single-stage, two-stage, three-stage and four-stage cylindrical gear reducers with the low-speed center distance of  $\alpha \leq 1,000\text{ mm}$ , and single-stage, two-stage, three-stage and four-stage planetary gear reducers with the low-speed planetary frame radius of  $R \leq 300\text{ mm}$ .



#### 53. JP 型行星齿轮减速器 (JB/T 12231—2015)

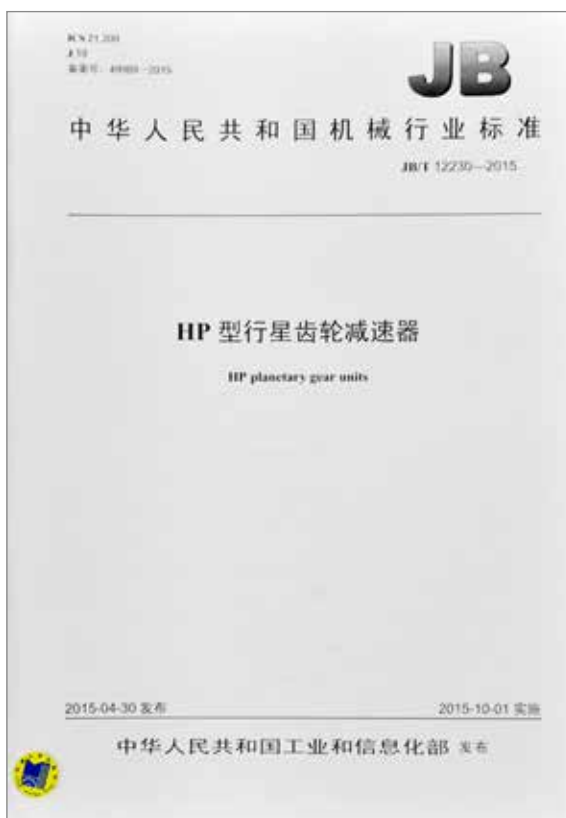
本标准规定了 JP 型行星齿轮减速器的型号、标记与尺寸、基本参数、技术要求、检验规则、标志、包装、运输、贮存、承载能力与选用方法等。

本标准适用于机械设备中使用的卷扬行星齿轮减速器，其他种类机械设备中使用的卷扬行星齿轮减速器可参照执行。

##### JP planetary gear unit

This standard specifies types, marks, dimensions, basic parameters, technical requirements, inspection rules, signs, packaging, transportation, storage and carrying capacity of the JP-type planetary gear reducer.

This standard is applicable to hoisting planetary gear reducers used in mechanical equipment. The hoisting planetary gear reducers used in other types of mechanical equipment can be carried out with reference to this standard.



#### 54. HP 型行星齿轮减速器 (JB/T 12230—2015)

本标准规定了 HP 型行星齿轮减速器的型号、标记与尺寸、基本参数、技术要求、检验规则、标志、包装、运输、贮存、承载能力与选用方法等。

本标准适用于机械设备中使用的回转行星齿轮减速器，其他种类机械设备中使用的回转行星齿轮减速器可参照执行。

##### HP planetary gear units

This standard specifies types, marks, dimensions, basic parameters, technical requirements, inspection rules, signs, packaging, transportation, storage and carrying capacity of the HP-type planetary gear reducer.

This standard is applicable to rotary planetary gear reducers in mechanical equipment. The rotary planetary gear reducers in other types of mechanical equipment can be carried out with reference to this standard.



#### 55. NGW 行星齿轮减速器 (JB/T 6502—1993)

本标准规定了 NGW 行星齿轮减速器的型式、基本参数与尺寸、润滑、技术要求、试验方法与检验规则、承载能力与选用方法等。本标准规定的减速器适用于机械设备的减速传动。

#### NGW planetary gear units

This standard specifies types, basic parameters, dimensions, lubrication, technical requirements, test methods, inspection rules, carrying capacity and selection methods of the NGW-type planetary gear reducer.

The reducers specified in this standard are applicable to the reduction drive of mechanical equipment.



#### 56. XP 型行星齿轮减速器 (GB/T 32798—2016)

本标准规定了 XP 型行星齿轮减速器的基本参数、型式、尺寸、技术要求、承载能力与选用方法。

本标准减速器适用于高速、高精度、要求体积小及承载能力大等工况下的传动，尤其适用于轮式、履带式车辆和轨道车辆的轮边传动。

#### XP planetary gear units

This standard specifies basic parameters, types, dimensions, technical requirements, carrying capacity and selection methods of the XP-type planetary gear reducer.

The reducers specified by this standard are only applicable to the transmission under the high speed, high precision, small volume and large carrying capacity, especially wheel-side transmission of wheeled, tracked and rail vehicles.



#### 57. 冷轧机组主传动十字轴式万向联轴器 (GB/T 33507—2017)

本标准规定了冷轧机组主传动十字轴式万向联轴器的结构型式、基本参数和主要尺寸、产品标记、技术要求、检验规则、标志、包装、运输和贮存。

本标准适用于联接齿轮机座或电机输出轴与冷轧轧机、平整机轧辊的主传动轴系的万向联轴器。传递公称转矩为  $60\text{ kN} \cdot \text{m} \sim 1\,150\text{ kN} \cdot \text{m}$ ，回转直径  $\phi 225\text{ mm} \sim \phi 550\text{ mm}$ ，最大轴线折角为  $5^\circ$ ，无伸缩结构，工作环境温度  $-20^\circ\text{C} \sim +80^\circ\text{C}$ 。

#### Main drive universal coupling for cold rolling mill units

This standard specifies structure types, basic parameters, main dimensions, product marks, technical requirements, inspection rules, signs, packaging, transportation and storage of the cross shaft universal coupling for the main drive of the cold rolling mill line.

This standard is applicable to the universal coupling between the gear stand or the output shaft of the motor and the main drive shaft of temper mill's rollers. The nominal transmission torque is  $60\text{ kN} \cdot \text{m} \sim 1,150\text{ kN} \cdot \text{m}$ , the turning diameter is  $\phi 225\text{ mm} \sim \phi 550\text{ mm}$ , the maximum axis bending angle is  $5^\circ$ , no telescopic structure is available, the working temperature is  $-20^\circ\text{C} \sim +80^\circ\text{C}$ .



#### 58. 冷轧机组主传动鼓形齿式联轴器 (GB/T 33506—2017)

本标准规定了冷轧机组主传动鼓形齿式联轴器的结构型式、基本参数和主要尺寸、型号标记、技术要求、试验方法与检验规则、标志、包装、运输和贮存。

本标准适用于联接齿轮减速器输出轴或电机输出轴与冷轧板带轧机、平整机轧辊两个传动轴系的联轴器。传递公称转矩为  $50\text{ kN} \cdot \text{m} \sim 1\,270\text{ kN} \cdot \text{m}$ ，轧辊端回转直径  $\phi 225\text{ mm} \sim \phi 550\text{ mm}$ ，工作负荷时轴线最大折角为  $1.5^\circ$ ，无工作负荷时轴线最大折角为  $2^\circ$ ，工作温度为  $-20^\circ\text{C} \sim 80^\circ\text{C}$ 。

#### Main drive curved tooth coupling for cold rolling mill units

This standard specifies structure types, basic parameters, main dimensions, model marks, technical requirements, test methods, inspection rules, signs, packaging, transportation and storage of the drum-shaped gear coupling for the main drive of the cold rolling mill line.

This standard is applicable to the coupling between the output shaft of the gear reducer or the motor and two drive shafts of the strip cold rolling mill and temper mill's rollers. The nominal transmission torque is  $50\text{ kN} \cdot \text{m} \sim 1,270\text{ kN} \cdot \text{m}$ , the turning diameter at the roller end is  $\phi 225\text{ mm} \sim \phi 550\text{ mm}$ , the maximum axis bending angle with the workload is  $1.5^\circ$ , the maximum axis bending angle without the workload is  $2^\circ$ , and the working temperature is  $-20^\circ\text{C} \sim 80^\circ\text{C}$ .



#### 59. 重型起重运输轨道用固定联结件 (JB/T 13125—2017)

本标准规定了 LHFC、LHTZ 及 LHSTK 型轨道用固定联结件的结构型式与基本尺寸、标记示例、技术要求、收规则、试验方法、标志、包装和贮存。

本标准适用于重型起重运输机械的钢轨固定联结件。

Rail fastener for heavy lifting and transporting

This standard specifies structure types, basic dimensions, mark samples, technical requirements, acceptance rules, test methods, signs, packaging and storage of LHFC, LHTZ and LHSTK-type rail fixed couplings.

This standard is applicable to fixed couplings of steel rails for heavy lifting and transporting machinery.



#### 60. 冶金设备 焊接吊耳 技术规范 (GB/T 35981—2018)

本标准规定了冶金设备用焊接吊耳的结构形式、技术要求、试验方法、检验规则、验收及管理要求、标识、使用要求。

本标准适用于冶金设备用焊接吊耳制作，包括设备运输吊耳、设备安装吊耳和设备制造中工艺过程起吊吊耳。

Metallurgical equipment—Welding lug—Technical specifications

This standard specifies structure types, technical requirements, test methods, inspection rules, acceptance and management requirements, identification and use requirements of the welding lifting lug for metallurgical equipment.

This standard is applicable to the production of welding lifting lugs for metallurgical equipment, including lifting lugs for equipment transportation, lifting lugs for equipment installation, and lifting lugs for the process of equipment production.



#### 61. 钢球式限扭矩联轴器 (JB/T 13115—2017)

本标准规定了钢球式限扭矩联轴器的型式与结构、技术要求、试验方法、检验规则、标志、包装和贮存。

本标准适用于连接两个同轴线的传动轴系，轴孔直径为 30 mm ~ 260 mm，传递转矩为 2 000 N·m ~ 200 000 N·m，轴线折角为 1° 的钢球式限扭矩联轴器。

#### Steel ball type torque limited coupling

This standard specifies types, structures, technical requirements, test methods, inspection rules, signs, packaging and storage of the steel ball torque-limiting coupling.

This standard is applicable to steel ball torque-limiting couplings connecting two transmission shafts in the same axis with the diameter of the shaft hole of 30 mm~260 mm, the transmission torque of 2,000 N·m~200,000 N·m, and the axis bending angle of 1°.



#### 62. 冶炼设备 术语 (GB/T 32818—2016)

本标准界定了黑色金属冶炼设备的基本和常用术语，包括：炼焦设备、造块设备、炼铁设备、炼钢设备、连铸设备、检测、控制与智能化设备专业的术语及其定义或释义。

本标准适用于科研、工程设计文件、科技文献、信息等出版物中冶炼设备的称谓。

#### Metallurgical equipment-Terminology

This standard defines the basic and common terms for black metal smelting equipment, including terms, definitions or explanations of coking equipment, agglomeration equipment, iron making equipment, steel making equipment, continuous casting equipment, testing, and control and intelligent equipment.

This standard is applicable to names of smelting equipment in scientific research, engineering design documents, scientific literature, information and other publications.





63. 板坯连铸机 第1部分：术语 (JB/T 12938.1—2016)

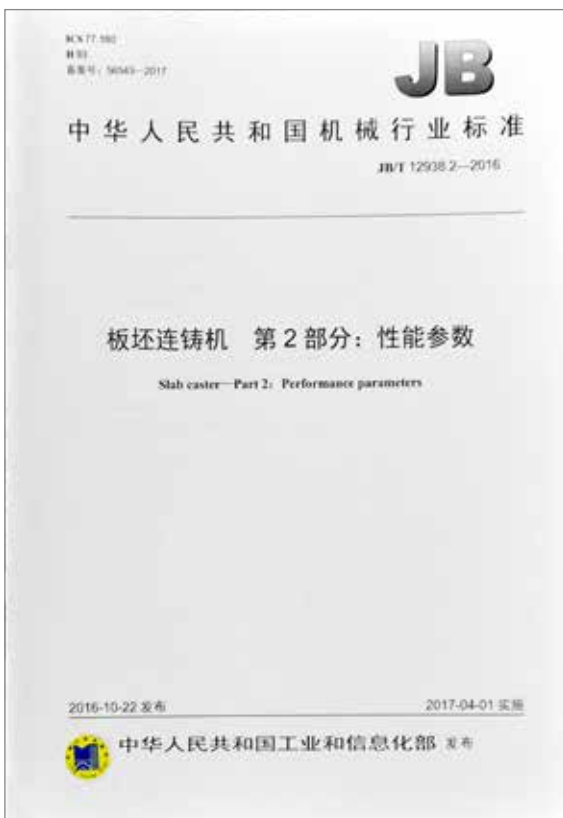
JB/T 12938 的本部分规定了板坯连铸机的基本和常用术语及其定义或释义，同时给出了英文译名。

本部分适用于板坯连铸机设备。

Slab caster-Part1 Terminology

This part of JB/T 12938 specifies basics and common terms, definitions or explanations of the continuous slab caster, and provides their English names.

This part is applicable to continuous slab casters.



64. 板坯连铸机 第2部分：性能参数 (JB/T 12938.2—2016)

JB/T 12938 的本部分规定了板坯连铸机的型式、性能参数。

本部分适用于连续铸造的各种板坯连铸机。

Slab caster-Part2: Performance parameters

This part of JB/T 12938 specifies types and performance parameters of the continuous slab caster.

This part is applicable to various continuous slab casters for continuous casting.

## 二重（德阳）重型装备有限公司

Erzhong (Deyang) Heavy Equipment Co., Ltd.

公司名称：二重（德阳）重型装备有限公司

Company Name: Erzhong (Deyang) Heavy Equipment Co., Ltd.

二重（德阳）重型装备有限公司（简称二重装备）隶属于国机重型装备集团股份有限公司。中国第二重型机械集团公司始建于1958年，2013年，经国务院批准，中国二重与中国机械工业集团有限公司实施联合重组，中国二重成为国机集团全资子公司。国机集团打造了以二重集团（德阳）重型装备股份有限公司为平台，整合中国重型机械研究院股份有限公司、中国重型机械有限公司，集“科、工、贸”为一体的高端装备集成服务商——国机重型装备集团股份有限公司。2018年2月5日，二重（德阳）重型装备有限公司成立，二重装备承继了原二重重装的主要业务及资产、资质、体系、人员等全部资源，是国机重装的核心制造板块，是国机重装的全资子公司。

二重装备将依托国机集团28所国家级研究院所和70多家海外服务机构以及国机重装“科、工、贸”旗舰平台，遍布140多个国家的国际市场营销网络，成为一流高端装备研发制造企业。

二重装备具有强大的产品研发、设计和制造能力，旗下有国家级技术中心、工程实验室和博士后工作站，有以当今世界最大的160MN自由锻压机为代表的生产设备6600余台，具备一次性冶炼900t钢水、浇注700t钢锭、产出550t成品铸件及400t成品锻件的能力，可按国际、国内标准及不同等级、规格和用户需求提供大型成套设备、核电、水电、火电成套铸锻件、核电设备、石化装备、大型传动设备等各类重大技术装备制造服务。

六十多年来，二重装备先后为冶金、矿山、能源、交通、汽车、石油化工、航空航天等国民经济各部门和国防建设提供了近三百万吨重大技术装备，积淀了深厚的技术实力和服务经验，在国家重大技术装备国产化的进程中发挥了不可替代的重要作用。

二重装备将认真贯彻落实党的十九大和十九届二中、三中全会精神，坚定不移以习近平新时代中国特色社会主义思想为指导，在继承和发扬企业优良传统和文化基因的基础上，认真贯彻国机重装总体发展战略，牢固树立创新、

Erzhong (Deyang) Heavy Equipment Co., Ltd. (abbreviated as EHEC hereinafter) is a subsidiary of Sinomach Heavy Equipment Group Co., Ltd. China National Erzhong Group Co. was established in 1958. In 2013, upon the approval of the State Council, reorganized with China National Machinery Industry Corporation, CNEG became a wholly-owned subsidiary of SINOMACH. Based on EHEC as the platform and with the integration of China National Heavy Machinery Research Institute Co., Ltd. and China National Heavy Machinery Corporation, SINOMACH has built a high-end equipment integration service provider-Sinomach Heavy Equipment Group Co., Ltd. combining the "science, industry and trade". On February 5, 2018, EHEC was established. EHEC has inherited the main business, assets, qualifications, systems, personnel and other resources of the former China National Erzhong Group Co. Ltd. It is the core manufacturing division of SINOMACH-HE, and the wholly-owned subsidiary of SINOMACH-HE.

After reorganization, EHEC will be availed to the support of SINOMACH which has 28 national class research institutions, over 70 overseas service agencies and relying on the "science, industry and trade" flagship platform of SINOMACH as well as an international sales and marketing network covering more than 140 countries. Thus, EHEC will inevitably develop into a first-class high-end equipment R & D and manufacturing enterprise.

As for its capacity of product research, design and manufacturing, EHEC has a national-recognized technical center, an engineering laboratory and a post-doctoral station. It is equipped with over 6600 facilities with 160MN open-die forging press as the most representative equipment. With these advanced and sophisticated facilities, EHEC is able to yield 900 tons of molten steel, 700 tons of steel ingots, 550 tons of castings and 400 tons of forgings in one production cycle. It is also capable of providing complete equipment for metallurgical industry, complete sets of castings and forgings for nuclear power, hydropower and thermal power industries, as well as nuclear power vessels, petrochemical equipment, heavy transmission parts and key technical equipment manufacturing services according to domestic, international and customized standards, levels and specifications.

For over 60 years, EHEC has provided nearly 3 million tons of major technical equipment for industries relating to national economy and defense, such as metallurgy, mining, energy, transportation, automobile, petrochemistry, aviation and aerospace. In this way, it has greatly enhanced its strength in technical research and accumulated rich experiences in service. Moreover, it has been playing a significant and irreplaceable role in the course of localizing the major technical equipment in China.

EHEC will conscientiously implement the spirit of the 19th National Congress of the Communist Party of China, the Second and Third Plenary Sessions of its 19th Central Committee, and unswervingly follow the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era. On the basis of the inheritance and promotion of the fine tradition and cultural gene of the enterprise, it will earnestly implement the overall development strategy of

协调、绿色、开放、共享的发展理念，以推进供给侧结构性改革为主线，以促进可持续高质量发展为中心任务，内涵式发展与外延式发展相结合，集约式管控与专业化板块运营相结合，加快实现建设成为一流大型装备制造企业的发展目标。

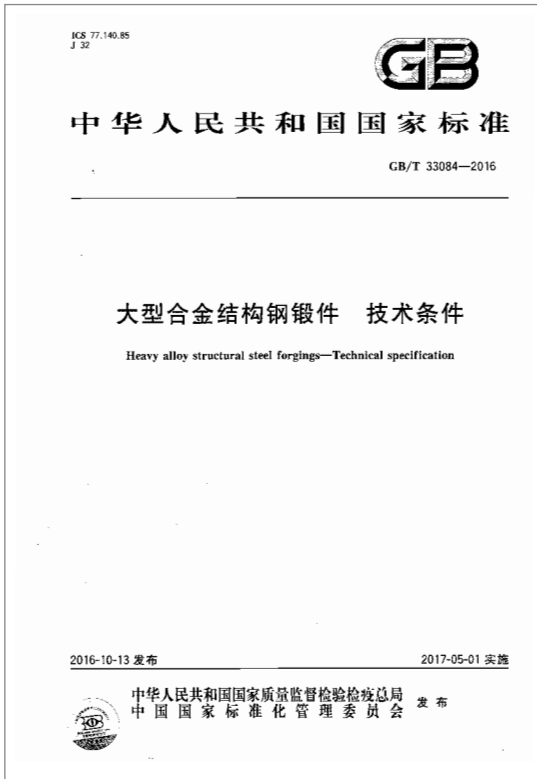
SINOMACH, and firmly establish the innovative, coordinated, green, opening and shared development concepts. It will focus on advancing supply-side reform of structure and promote sustainable and high-quality development as the central task to accelerate the achievement of development goal of the first-class large-scale equipment manufacturing enterprise in combination of connotative development and extensive development, as well as intensive control and specialized plate operation.

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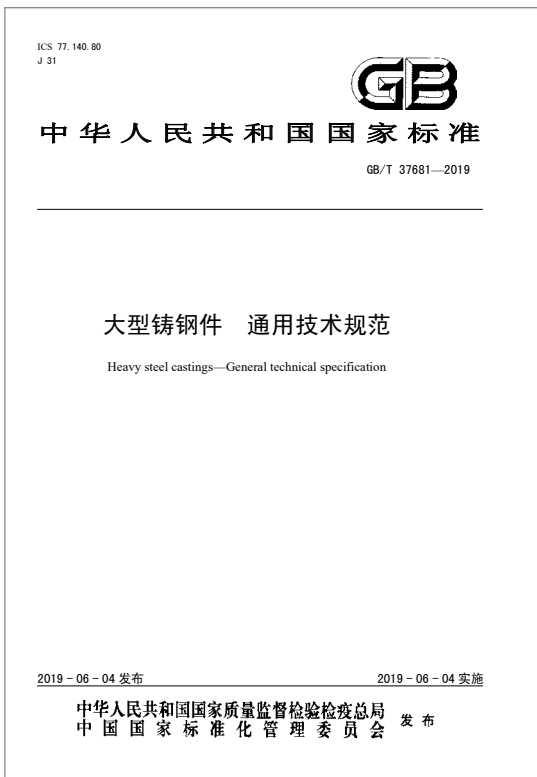
## 标准 Standards



### 1. GB/T 33084—2016 《大型合金结构钢锻件 技术条件》

本标准包含 60 种机械设备大型构件用合金结构钢锻件材料，适用于大型合金结构钢锻件的订货、制造和检验。

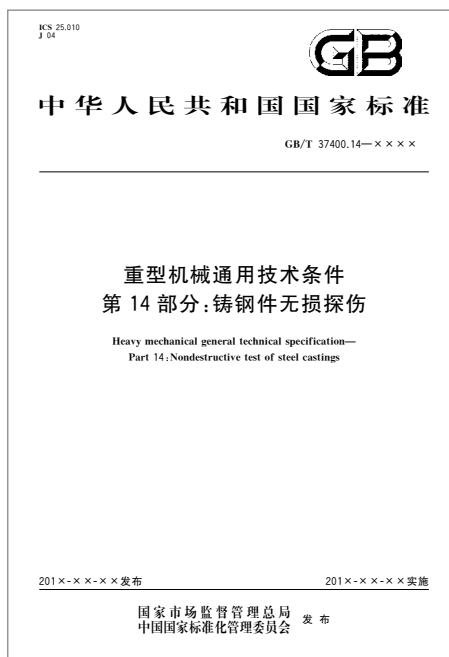
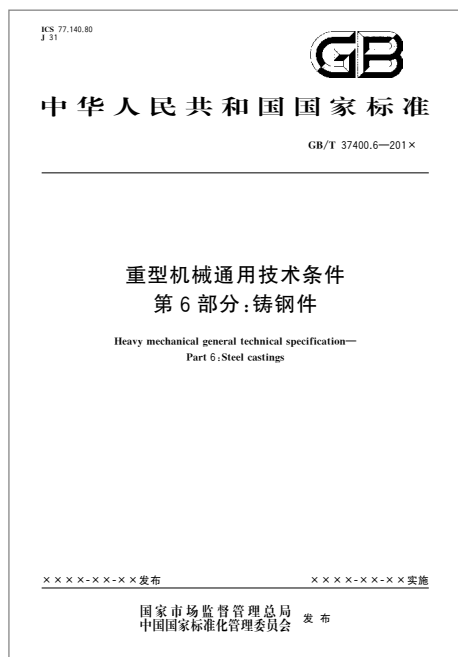
GB/T 33084—2016 Heavy alloy structural steel forgings—Technical specification  
This standard includes the materials used for alloy structural steel forging of large components for 60 kinds of mechanical equipment, which is applicable to ordering, manufacturing and inspection of heavy alloy structural steel forgings.



### 2. GB/T 37681—2019 《大型铸钢件 通用技术规范》

本标准包含大型铸钢件的订货、制造工艺、技术要求、检验规则和试验方法、验收和发货等通用技术规范，适用于采用砂型或导热性与砂型相当的铸型铸造的大型铸钢件。

GB/T 37681—2019 Heavy steel castings—General technical specification  
This standard involves the general technical specifications such as ordering, manufacturing process, technical requirements, inspection rules, testing methods, acceptance and shipment, which is applicable to heavy steel castings made by means of sand mould or casting mould with thermal conductivity equivalent to that of the sand mould.

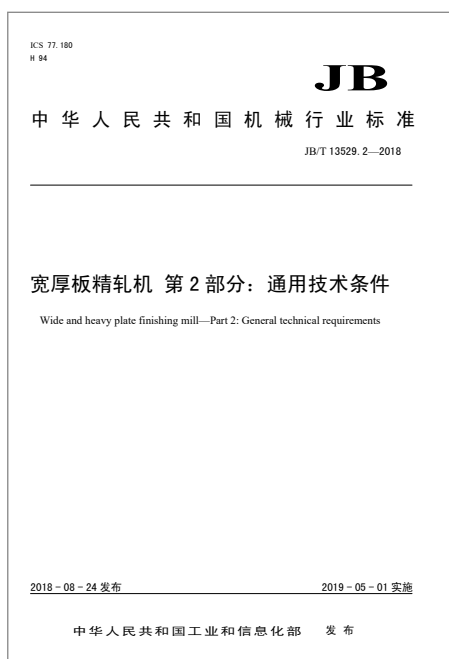
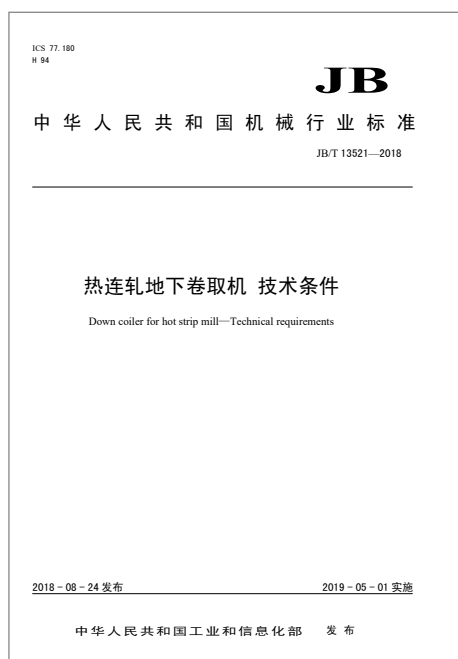


### 3. GB/T 37400—2019《重型机械通用技术规范》系列标准

本系列标准包含冶金、锻压、矿山等重型机械用材料、制造工艺和检测等技术内容，适用于重型机械关键构件的订货、制造和检验。

GB/T 37400—2019 Series standards of Heavy mechanical general technical specification

This series of standards includes technical contents of materials, manufacturing process and inspection for heavy machinery used in metallurgy, forging and stamping and mine, which is applicable to ordering, manufacturing and inspection of key components of heavy machinery.



4. JB/T 13521—2018《热连轧地下卷取机 技术条件》、JB/T 13529.2—2018《宽厚板精轧机 第2部分:通用技术条件》等适用于冶金设备热连轧机、宽厚板轧机整机及关键核心设备的设计、订货、制造。

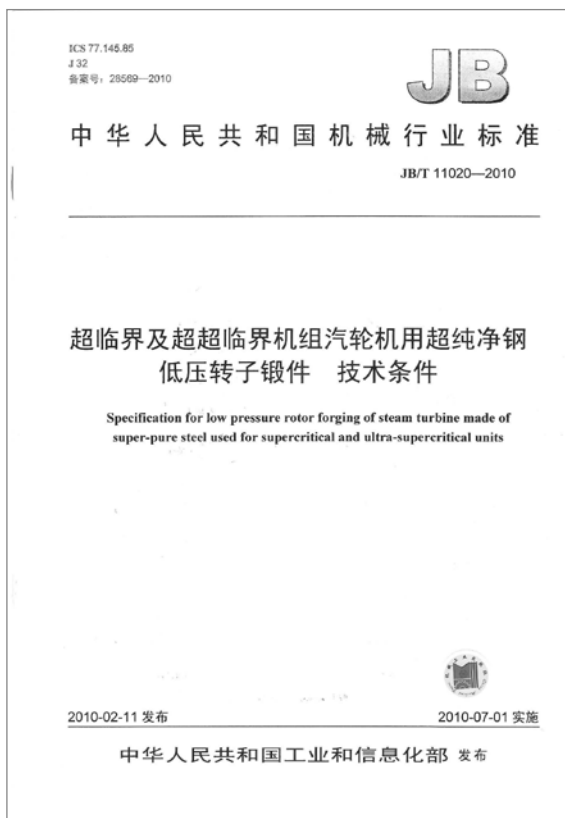
JB/T 13521—2018 Down coiler for hot strip mill—Technical requirements, JB/T 13529.2—2018 Wide and heavy plate Finishing mill—Part 2: General technical requirements, etc.

It is applicable to designing, ordering and manufacturing of hot strip mill, complete machine of wide and thick plate mill and core equipment of metallurgical equipment.



5. GB/T 26103—2010《鼓形齿式联轴器》系列标准、GB/T 26660—2011《SWC 大型整体叉头十字轴式万向联轴器》等适用于冶金、矿山、水工设备等联轴器。

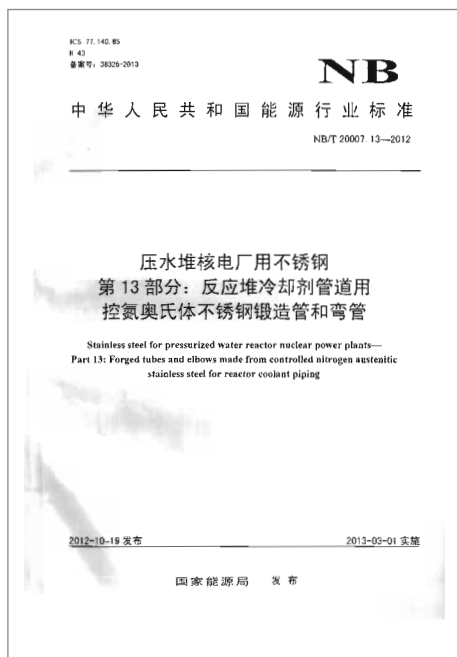
GB/T 26103—2010 Series standards of Curved tooth coupling, GB/T 26660—2011 Large SWC universal coupling with whole fork, etc. It is applicable to shaft coupling used in metallurgy, mine and hydraulic equipment.



6. JB/T 11020—2010《超临界及超超临界机组汽轮机用超纯净钢低压转子锻件 技术条件》

本标准适用于超临界及超超临界汽轮机用超纯净钢低压转子锻件的订货、制造与检验，涉及产品在全世界仅少数几家企业可以实现稳定制造。

JB/T 11020—2010 Specification for low-pressure rotor forgings of steam turbine made of super-pure steel used for supercritical and ultra-supercritical turbine units  
This standard is applicable to ordering, manufacturing and inspection of low-pressure rotor forgings made of low-pressure rotor forgings of steam turbine made of super-pure steel used for supercritical and ultra-supercritical turbine units, and the products involved can be manufactured by only a few enterprises throughout the world.



7. NB/T 20007.13—2012《压水堆核电厂用不锈钢 第13部分：反应堆冷却剂管道用控氮奥氏体不锈钢锻造管和弯管》、NB/T 20007.44—2016《压水堆核电厂用不锈钢 第44部分：反应堆冷却剂波动管用015Cr17Ni12Mo2N奥氏体不锈钢管》标准适用于核电主管道、波动管的订货、制造和检验。

NB/T 20007.13—2012 Stainless steel for pressurized water reactor nuclear power plants-Part 13: Forged tubes and elbows made from controlled nitrogen austenitic stainless steel for reactor coolant piping

NB/T 20007.44—2016 Stainless steel for pressurized water reactor nuclear power plants-Part 44: 015Cr17Ni12Mo2N austenitic stainless steel pipes for surge line pipe spool pieces

This standard is applicable to ordering, manufacturing and inspection of main pipe and surging line pipe spool pieces of nuclear power plant.



8. JB/T 11021—2010《大型高铬锻钢支承辊 技术条件》

本标准适用于黑色金属和有色金属板带材各类冷、热轧机和中厚板轧机使用的，Cr含量不低于3%—5.5%、辊身直径大于或等于Φ1000mm的大型高铬整锻式或镶套式的合金钢支承辊的订货、制造及检验和验收。

JB/T 11021—2010 Specification of high chromium steel forging for large back-up rolls  
This standard is applicable to ordering, manufacturing, inspection and acceptance of large-scale high-chrome whole forging type or bushing type alloy steel back-up rolls used for all kinds of cold mill, hot mill and thick and medium plate mill for the ferrous and non-ferrous metal plate and strip, the Cr content of which is no less than 3%-5.5% and roll diameter is equal to or more than Φ1000mm.



# 中国一拖集团有限公司

## YTO Group Corporation

公司名称：中国一拖集团有限公司  
Company Name: YTO Group Corporation

中国一拖集团有限公司（简称“中国一拖”）坐落于中国历史文化名城、十三朝古都——洛阳。前身为第一拖拉机制造厂，目前是中国机械工业集团有限公司的控股子公司。中国一拖始建于1955年，是我国“一五”时期156个重点建设项目之一，新中国第一台拖拉机、第一辆军用越野载重汽车在这里诞生。经过60余年发展，中国一拖已经成为以农业装备为核心，并创新发展特专车辆、制造服务业务的大型装备制造企业，拥有拖拉机、收获机械、机具，以及柴油机、传动系、驾驶室等核心零部件构成的完整的农业装备产业链体系。

作为中国农机工业重点骨干企业，自创建以来，中国一拖始终坚持服务“三农”。“东方红”是首批“中国驰名商标”，在中国广大农民用户中享有盛誉，大中型拖拉机保持技术领先和市场领先，柴油机在非道路机械领域具有明显配套优势；“YTO”是中国一拖在海外市场的注册商标，产品已出口到全球100多个国家。

第一拖拉机股份有限公司是中国一拖集团有限公司最大的控股子公司，分别在上海证交所和香港联交所上市，是中国唯一拥有“A+H”上市平台的农机企业。

面对未来，中国一拖不忘初心、牢记使命，正不断加快提质增效、转型升级步伐，着力打造先进农业装备制造基地，建设智能农机与智慧农业技术创新平台、农业装备成套集成与产业资源开放合作平台、农业与农村工程综合服务平台，致力于为用户提供最有价值的农业装备成套解决方案，成为卓越的全球农业装备制造服务商。

YTO Group Corporation is located in Luoyang, a famous historical and cultural city of China and an ancient capital of thirteen dynasties. Its predecessor is the First Tractor Manufactory and now it is a holding subsidiary of China National Machinery Industry Corporation (SINOMACH). Founded in 1955, the company was one of China's 156 key construction projects during the "First Five-Year Plan" period. The first tractor and the first military off-road truck were born here. After more than 60 years of development, YTO Group Corporation has become a large-scale agricultural equipment manufacturer with agricultural equipment as its core business and innovative development of special vehicles and manufacturing services. It has a complete industrial chain system of agricultural equipment consisting of tractors, harvesting machinery, implement, diesel engines, transmission systems, cabs and other core components.

As one of the backbone enterprises of China's agricultural machinery industry, YTO Group Corporation has always insisted on serving "agriculture, countryside and farmers" since its establishment. "Dongfanghong" is one of the first batch of "China's well-known trademarks" and enjoys a high reputation among the vast number of farmers in China. The company's large and medium-sized tractors keep ahead of technology & market and diesel engines have a strong adaptability and are widely used in various non-road mobile machinery; "YTO" is the registered trademark of YTO Group Corporation in overseas markets and YTO products have been exported to more than 100 countries and regions all over the world.

First Tractor Company Limited is the largest holding subsidiary of YTO Group Corporation. It is listed on Shanghai Stock Exchange and Hong Kong Stock Exchange respectively and it is the only agricultural machinery enterprise in China with "A+H" listing platform.

Facing the future, YTO Group Corporation will remain true to its original aspiration and keep its mission firmly in mind. It is constantly speeding up the steps of improving quality and efficiency, transforming and upgrading, focusing on building an advanced agricultural equipment manufacturing base, building an intelligent agricultural machinery and intelligent agricultural technology innovation platform, agricultural equipment integration and industrial resources open cooperation platform, and a comprehensive service platform for agriculture and rural projects, and dedicated to providing customers with the most valuable agricultural equipment solutions and becoming an outstanding global agricultural equipment manufacturing service provider.

### 联系人及联系方式

#### Contact Person and Information

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Contact person:

电话：

Phone:

标准  
Standards

序号	标准编号	标准名称	应用范围
1	GB 18447.1—2008	拖拉机 安全要求 第 1 部分：轮式拖拉机 Safety requirements for tractors-Part 1:Wheeled tractors	轮式拖拉机 Wheeled tractors
2	GB 18447.2—2008	拖拉机 安全要求 第 2 部分：手扶拖拉机 Safety requirements for tractors-Part 2: Walking tractors	手扶拖拉机 Walking tractors
3	GB 18447.3—2008	拖拉机 安全要求 第 3 部分：履带拖拉机 Safety requirements for tractors-Part 3:Crawler tractors	履带拖拉机 Crawler tractor
4	GB 18447.4—2008	拖拉机 安全要求 第 4 部分：皮带传动轮式拖拉机 Safety requirements for tractors-Part 4:Belt-drive wheeled tractors	皮带传动轮式拖拉机 Belt-drive wheeled tractors
5	GB/T 15370.1—2012	农业拖拉机 通用技术条件 第 1 部分：50kW 以下轮式拖拉机 General requirement of agricultural tractors-Part 1:under 50 kW wheeled tractors	50kW 以下农业轮式拖拉机 Agricultural wheeled tractors with power under 50kW
6	GB/T 15370.2—2009	农业拖拉机 通用技术条件 第 2 部分：50kW ~ 130kW 轮式拖拉机 General requirement of agricultural tractors-Part 2:50kW ~ 130 kW wheeled tractors	50kW ~ 130kW 农业轮式拖拉机 Agricultural wheeled tractors with power between 50kW ~ 130kW
7	GB/T 15370.3—2012	农业拖拉机 通用技术条件 第 3 部分：130kW 以上轮式拖拉机 General requirement of agricultural tractors-Part 3:Over 130 kW wheeled tractors	130kW 以上农业轮式拖拉机 Agricultural wheeled tractors with power over 130kW
8	GB/T 15370.4—2012	农业拖拉机 通用技术条件 第 4 部分：履带拖拉机 General requirement of agricultural tractors-Part 4:Crawler tractors	农业履带拖拉机 Agricultural crawler tractors
9	GB/T 15370.5—2012	农业拖拉机 通用技术条件 第 5 部分：皮带传动轮式拖拉机 General requirement of agricultural tractors-Part 5:Belt-drive wheeled tractors	农业皮带传动轮式拖拉机 Agricultural belt-drive wheeled tractors
10	GB/T 10916.2—2015	农业轮式拖拉机 前置装置 第 2 部分：固定设备的连接 Agricultural wheeled tractors-Front-mounted equipment-Part 2:Stationary equipment connection	农业轮式拖拉机前置装置 The Front-mounted equipment of agricultural wheeled tractors
11	GB/T 3871.20—2015	农业拖拉机 试验规程 第 20 部分：颠簸试验 Agricultural tractors-Test procedures-Part 20:Test methods of tractor bumpiness	轮式和手扶拖拉机 Agricultural walking tractors
12	GB/T 3871.21—2015	农业拖拉机 试验规程 第 21 部分：稳定性 Agricultural tractors-Test procedures-Part 21:Stability	农业拖拉机 Agricultural tractors
13	GB/T 32248—2015	超高强度合金钢锻件 通用技术条件 Superstrength alloy steel forgings-General specifications	超高强度合金钢锻件 Superstrength alloy steel forgings
14	GB/T 14226—2015	草坪和园艺拖拉机 三点悬挂装置 Lawn and garden tractors-Three-point hitch	草坪和园艺拖拉机三点悬挂装置 The three-point linkages of lawn and garden tractors
15	GB/T 21956.1—2015	农林用窄轮距轮式拖拉机防护装置强度 试验方法和验收条件 第 1 部分：前置式静态试验方法 Protective structure strength on narrow-track wheeled agricultural andforestry tractors-Testing method and acceptance condition-Part 1:Static testing method of front mounted ROPS	农林用窄轮距轮式拖拉机防护装置 The protective structures on narrow-track wheeled agricultural and forestry tractors
16	GB/T 21956.2—2015	农林用窄轮距轮式拖拉机防护装置强度 试验方法和验收条件 第 2 部分：前置式动态试验方法 Protective structure strength on narrow-track wheeled agricultural andforestry tractors-Testing method and acceptance condition-Part 2:Dynamic testing method of front mounted ROPS	农林用窄轮距轮式拖拉机防护装置 The protective structures on narrow-track wheeled agricultural and forestry tractors
17	GB/T 21956.3—2015	农林用窄轮距轮式拖拉机防护装置强度 试验方法和验收条件 第 3 部分：后置式静态试验方法 Protective structure strength on narrow-track wheeled agricultural andforestry tractors-Testing method and acceptance condition-Part 3:Static testing method of rear mounted ROPS	农林用窄轮距轮式拖拉机防护装置 The protective structures on narrow-track wheeled agricultural and forestry tractors
18	GB/T 1593—2015	农业轮式拖拉机后置式三点悬挂装置 0、1N、1、2N、2、3N、3、4N 和 4 类 Agricultural wheeled tractor-Rear-mounted three-point linkage-Categories 0、1N、1、2N、2、3N、3、4N and 4	农业轮式拖拉机后置式三点悬挂装置 The three-point linkages for the attachment of implements or equipment to the rear of agricultural wheeled tractors
19	GB/T 13875—2015	手扶拖拉机 通用技术条件 Walking tractors -General requirement	手扶拖拉机 Walking tractors
20	JB/T 8930—2015	冲压工艺质量控制规范 Specification of quality control for stamping process	冲压工艺质量控制 Quality control for stamping process

21	JB/T 5673—2015	农林拖拉机及机具涂漆 通用技术条件 Agriculture and forestry tractors and machinery — General requirements of painting	农林拖拉机及机具涂漆 Painting coatings of agriculture and forestry tractors and machinery
22	GB/T 1592.1—2016	农业拖拉机 后置动力输出轴 1、2、3 和 4 型 第 1 部分：通用要求、安全要求、防护罩尺寸和空隙范围 Agricultural tractors-Rear-mounted power take-off types 1,2,3 and 4-Part 1:General specifications,safety requirements,dimensions for master shield and clearance zone	农业拖拉机后置动力输出轴 Rear PTO of agricultural tractors
23	GB/T 1592.2—2016	农业拖拉机 后置动力输出轴 1、2、3 和 4 型 第 2 部分：窄轮距拖拉机防护罩尺寸和空隙范围 Agricultural tractors-Rear-mounted power take-off types 1,2,3 and 4-Part 2:Narrow-track tractors,dimensions for master shield and clearance zone	农业拖拉机后置动力输出轴 Rear PTO of agricultural tractors
24	GB/T 1592.3—2016	农业拖拉机 后置动力输出轴 1、2、3 和 4 型 第 3 部分：动力输出轴尺寸和花键尺寸、动力输出轴位置 Agricultural tractors-Rear-mounted power take-off types 1,2,3 and 4-Part 3:Main PTO dimensions and spline dimensions,location of PTO	农业拖拉机后置动力输出轴 Rear PTO of agricultural tractors
25	GB/T 19040—2016	农业拖拉机 转向要求 Agricultural tractors-Requirements for steering	农业拖拉机 Agricultural tractors
26	GB/T 20343—2016	农业拖拉机和机械 三点悬挂机具的连接装置 机具周围的间隙范围 Agricultural tractors and machinery-Connection of implements via three-point linkage-Clearance zone around implement	农业拖拉机和机械三点悬挂机具的连接装置 The connection of implements via three-point linkage of agricultural tractors and machinery
27	JB/T 4394—2016	稀土镁硅合金 稀土总量、硅、总镁和氧化镁的化学分析方法 Rare earth magnesium silicon alloys-Chemical analysis methods of total rare earth,silicon,total magnesium and magnesia	稀土镁硅合金 Rare earth magnesium silicon alloys
28	JB/T 6712—2016	拖拉机外观质量要求 Appearance quality requirements of tractors	拖拉机外观 Tractor appearance
29	JB/T 7282—2016	拖拉机用润滑油品种、规格的选用 Type and specifications of lubricants for tractors	拖拉机用润滑油 Lubricants for tractors
30	JB/T 9844—2016	拖拉机及内燃机用永磁交流发电机 Magneto-generator for motor tractors and internal-combustion engine	拖拉机及内燃机用永磁交流发电机 Magneto-generator for motor tractors and internal-combustion engine
31	JB/T 10637—2016	农林拖拉机和机具 高温低压输油胶管 Agriculture and forest tractor and machinery-Rubberized oil tube of hi-temperature and low pressure	农林拖拉机及机具用高温低压输油胶管 Machinery-Rubberized oil tube of hi-temperature and low pressure for agricultural and forestry tractors and machinery
32	JB/T 11979—2016	拖拉机及内燃机用交流发电机整流器 技术条件 Rectifier of alternator applied to motor tractors and internal-combustion engine-Specifications	拖拉机及内燃机用交流发电机整流器 Rectifier of alternator for tractors and internal-combustion engine
33	JB/T 11982—2016	拖拉机及内燃机用发电机 球轴承 技术条件 Motor tractors and internal combustions-alternator-Ball bearing-Specifications	拖拉机及内燃机用发电机 Generator for motor tractors and internal-combustion engine
34	JB/T 12673—2016	轻型履带拖拉机 通用技术条件 Light crawler tractor-General requirement	轻型履带拖拉机 Light crawler tractors
35	JB/T 12674—2016	拖拉机前位灯、后位灯和制动灯 Tractors front lamp,rear lamp and braking lamp	拖拉机前位灯、后位灯和制动灯 Tractors front lamp,rear lamp and braking lamp
36	JB/T 12675—2016	拖拉机液压系统清洁度限值及测量方法 Tractor hydraulic systems Limit values for cleanliness and measuring method	拖拉机液压系统 Tractor hydraulic systems
37	JB/T 12676—2016	拖拉机用燃油传感器 Fuel sensor for tractor	拖拉机用燃油传感器 Fuel sensor for tractor
38	JB/T 12678—2016	拖拉机转向信号灯 Tractors steering signal	拖拉机转向信号灯 Steering signal for Tractors
39	JB/T 12846—2016	手扶拖拉机照明及灯光信号装置 Walking tractors lighting and light-signalling devices	手扶拖拉机照明及灯光信号装置 Tighting and light-signalling devices of walking tractors
40	JB/T 12847—2016	拖拉机冷却系热平衡 试验方法 Thermal equilibrium of cooling system for tractors-Test procedures	拖拉机冷却系热平衡 Thermal equilibrium of cooling system for tractors
41	JB/T 12848—2016	拖拉机性能试验用跑道要求 Requirements of runway for tractor tests	拖拉机性能试验用跑道 Runway for tractor tests
42	JB/T 12916—2016	拖拉机用压力报警器 Pressure alarms for tractors	拖拉机用压力报警器 Pressure alarms for tractors
43	GB/T 15370.7—2017	农业拖拉机 通用技术条件第 7 部分：三轮船式拖拉机 Agricultural tractors-General requirement-Part 7:Three-wheel boat tractors	农业三轮船式拖拉机 Agricultural three-wheel boat tractors

44	GB/T 19498—2017	农林拖拉机防护装置 静态试验方法和验收条件 Protective structures on agricultural and forestry tractors-Static testing method and accepting condition	农林拖拉机防护装置 The protective structures on Agricultural and forestry tractors
45	GB/T 34372—2017	手扶拖拉机 牵引装置尺寸及动力输出装置型式 Walking tractor-Drawbar dimensions and power take-off types	手扶拖拉机牵引装置和动力输出装置 Drawbar and power take-off of walking tractors
46	GB/T 33641.1—2017	农林拖拉机和机械 安全带 第 1 部分：固定装置位置要求 Tractors and machinery for agriculture and forestry-Seat belts-Part 1:Anchorage location requirement	农林拖拉机和机械安全带 Tractors and machinery for agriculture and forestry-Seat belts
47	GB/T 33641.2—2017	农业拖拉机和机械 安全带 第 2 部分：固定装置强度要求 Tractors and machinery for agriculture and forestry-Seat belts-Part 2:Anchorage strength requirements	农林拖拉机和机械安全带 Tractors and machinery for agriculture and forestry-Seat belts
48	GB/T 33641.3—2017	农林拖拉机和机械 安全带 第 3 部分：总成要求 Tractors and machinery for agriculture and forestry-Seat belts-Part 3:Requirements for assemblies	农林拖拉机和机械安全带 Tractors and machinery for agriculture and forestry-Seat belts
49	GB/T 33642—2017	农林拖拉机轮胎 快速耐磨试验方法 Tractor tires for agriculture and forestry-Test procedures of quick abrasion resistance	农林拖拉机轮胎 Tractor tires for agriculture and forestry
50	GB/T 34360-2017	冲压件材料消耗工艺定额编制要求 Compiling requirement of technological norm for stamping part material consumption	冲压件 Stamping part
51	GB/T 35381.4—2017	农林拖拉机和机械 串行控制和通信数据网络 第 4 部分：网络层 Tractors and machinery for agriculture and forestry-Serial control and communications data network-Part 4:Network layer	农林拖拉机和机械串行控制和通信数据网络 Serial control and communication data network of tractors and machinery for agriculture and forestry
52	GB/T 35381.5—2017	农林拖拉机和机械 串行控制和通信数据网络 第 5 部分：网络管理 Tractors and machinery for agriculture and forestry-Serial control and communications data network-Part 5:Network management	农林拖拉机和机械串行控制和通信数据网络 Serial control and communication data network of tractors and machinery for agriculture and forestry
53	GB/T 35381.6—2017	农林拖拉机和机械 串行控制和通信数据网络 第 6 部分：虚拟终端 Tractors and machinery for agricultural and forestry-Serial control and communications data network-Part 6:Virtual terminal	农林拖拉机和机械串行控制和通信数据网络 Serial control and communication data network of tractors and machinery for agriculture and forestry
54	GB/T 35381.8—2017	农林拖拉机和机械 串行控制和通信数据网络 第 8 部分：动力传动系消息 Tractors and machinery for agricultural and forestry-Serial control and communications data network-Part 8:Power train messages	农林拖拉机和机械串行控制和通信数据网络 Serial control and communication data network of tractors and machinery for agriculture and forestry
55	GB/T 35381.9—2017	农林拖拉机和机械 串行控制和通信数据网络 第 9 部分：拖拉机 ECU Tractors and machinery for agriculture and forestry-Serial control and communications data network-Part 9:Tractor ECU	农林拖拉机和机械串行控制和通信数据网络 Serial control and communication data network of tractors and machinery for agriculture and forestry
56	GB/T 35381.11—2017	农林拖拉机和机械 串行控制和通信数据网络 第 11 部分：数据源词典 Tractors and machinery for agricultural and forestry-Serial control and communications data network-Part 11:Mobile data element dictionary	农林拖拉机和机械串行控制和通信数据网络 Serial control and communication data network of tractors and machinery for agriculture and forestry
57	JB/T 2428—2017	拖拉机用转速工作小时表 Speed & hour meters for tractor	拖拉机用转速工作小时表 Speed & hour meters for tractors
58	JB/T 9221—2017	铸造用湿型砂有效膨润土及有效煤粉试验方法 Test method for effective bentonite and effective seacoal content in green molding sand	铸造用湿型砂 Green sand molding for casting
59	JB/T 13141—2017	拖拉机 转向液压缸 Tractor-Steering cylinder	拖拉机转向液压缸 Steering cylinder for tractors
60	JB/T 13290—2017	拖拉机液压系统滤清器 技术条件 Filters for hydraulic system of tractor-Specifications	拖拉机液压系统滤清器 Filters for hydraulic system of tractors
61	GB/T 35218—2017	拖拉机可靠性 台架试验方法 Tractor reliability-Bench test procedures	拖拉机可靠性台架试验 Tractor reliability-Bench test
62	GB/T 35350-2017	拖拉机与被牵引车辆之间机械连接装置 要求和试验方法 Mechanical couplings between tractor and towed vehicle-Requirement and testing method	拖拉机与被牵引车辆之间机械连接装置 Mechanical couplings between tractor and towed vehicle
63	GB/T 12214—2019	熔模铸造用硅砂、粉 Silica sand and flour for investment casting	熔模铸造用硅砂、粉 Silica sand and flour for investment casting
64	GB/T 12215—2019	熔模铸造用铝矾土砂、粉 Bauxite sand and flour for investment casting	熔模铸造用铝矾土砂、粉 Bauxite sand and flour for investment casting



1.GB 18447.1—2008 拖拉机 安全要求 第1部分：轮式拖拉机  
Safety requirements for tractors-Part 1:Wheeled tractors



2.GB 18447.2—2008 拖拉机 安全要求 第2部分：手扶拖拉机  
Safety requirements for tractors-Part 2: Walking tractors



3.GB 18447.3—2008 拖拉机 安全要求  
第3部分：履带拖拉机  
Safety requirements for tractors-Part 3:Crawler tractors

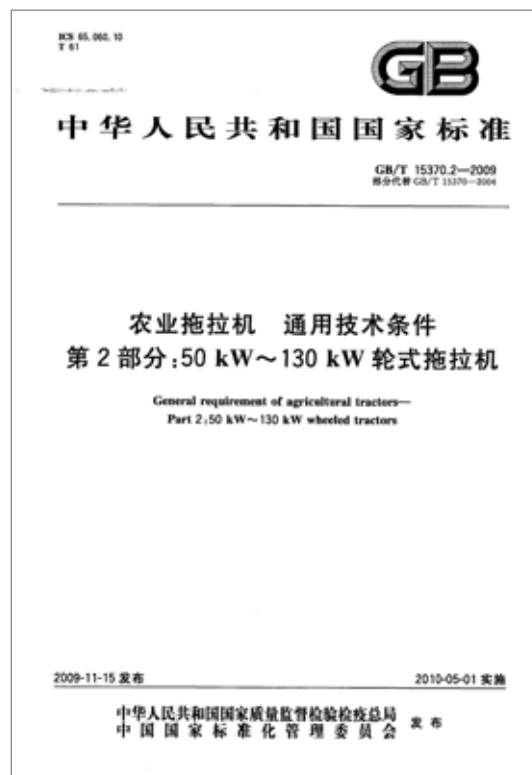


4.GB 18447.4—2008 拖拉机 安全要求  
第4部分：皮带传动轮式拖拉机  
Safety requirements for tractors-Part 4:Belt-drive wheeled tractors





5.GB/T 15370.1—2012 农业拖拉机 通用技术条件  
第1部分：50kW 以下轮式拖拉机  
General requirement of agricultural tractors-Part 1:under 50 kW wheeled tractors



6.GB/T 15370.2—2009 农业拖拉机 通用技术条件  
第2部分：50kW ~ 130kW 轮式拖拉机  
General requirement of agricultural tractors-Part 2:50kW ~ 130 kW wheeled tractors



7.GB/T 15370.3—2012 农业拖拉机 通用技术条件  
第3部分：130kW 以上轮式拖拉机  
General requirement of agricultural tractors-Part 3:Over 130 kW wheeled tractors



8.GB/T 15370.4—2012 农业拖拉机 通用技术条件  
第4部分：履带拖拉机  
General requirement of agricultural tractors-Part 4:Crawler tractors



9.GB/T 15370.5—2012 农业拖拉机 通用技术条件  
第5部分:皮带传动轮式拖拉机  
General requirement of agricultural tractors-Part 5:Belt-drive wheeled tractors



10.GB/T 10916.2—2015 农业轮式拖拉机 前置装置  
第2部分:固定设备的连接  
Agricultural wheeled tractors-Front-mounted equipment-Part 2:Stationary equipment connection



11.GB/T 3871.20—2015 农业拖拉机 试验规程 第20部分:颠簸试验  
Agricultural tractors-Test procedures-Part 20:Test methods of tractor bumpiness



12.GB/T 3871.21—2015 农业拖拉机 试验规程 第21部分:稳定性  
Agricultural tractors-Test procedures-Part 21:Stability





13.GB/T 32248—2015 超高强度合金钢锻件 通用技术条件  
Superstrength alloy steel forgings-General specifications



14.GB/T 14226—2015 草坪和园艺拖拉机 三点悬挂装置  
Lawn and garden tractors-Three-point hitch



15.GB/T 21956.1—2015 农林用窄轮距轮式拖拉机防护装置强度 试验方法和验收条件 第1部分：前置式静态试验方法  
Protective structure strength on narrow-track wheeled agricultural and forestry tractors-Testing method and acceptance condition-Part 1: Static testing method of front mounted ROPS



16.GB/T 21956.2—2015 农林用窄轮距轮式拖拉机防护装置强度 试验方法和验收条件 第2部分：前置式动态试验方法  
Protective structure strength on narrow-track wheeled agricultural and forestry tractors-Testing method and acceptance condition-Part 2: Dynamic testing method of front mounted ROPS



17.GB/T 21956.3—2015 农林用窄轮距轮式拖拉机防护装置强度 试验方法和验收条件 第3部分: 后置式静态试验方法  
Protective structure strength on narrow-track wheeled agricultural and forestry tractors—Testing method and acceptance condition—Part 3: Static testing method of rear mounted ROPS



18.GB/T 1593—2015 农业轮式拖拉机后置式三点悬挂装置 0、1N、1、2N、2、3N、3、4N 和 4 类  
Agricultural wheeled tractor—Rear-mounted three-point linkage—Categories 0, 1N, 1, 2N, 2, 3N, 3, 4N and 4



19.GB/T 13875—2015 手扶拖拉机 通用技术条件  
Walking tractors - General requirement



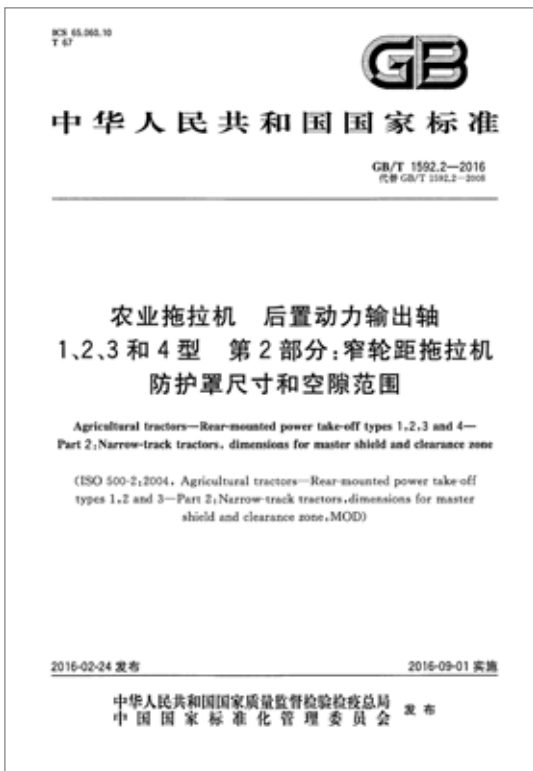
20.JB/T 8930—2015 冲压工艺质量控制规范  
Specification of quality control for stamping process



21.JB/T 5673—2015 农林拖拉机及机具涂漆 通用技术条件  
Agriculture and forestry tractors and machinery — General requirements of painting



22.GB/T 1592.1—2016 农业拖拉机 后置动力输出轴 1、2、3 和 4 型  
第 1 部分:通用要求、安全要求、防护罩尺寸和空隙范围  
Agricultural tractors-Rear-mounted power take-off types 1,2,3 and 4-Part 1:General specifications,safety requirements,dimensions for master shield and clearance zone



23.GB/T 1592.2—2016 农业拖拉机 后置动力输出轴 1、2、3 和 4 型  
第 2 部分:窄轮距拖拉机防护罩尺寸和空隙范围  
Agricultural tractors-Rear-mounted power take-off types 1,2,3 and 4-Part 2:Narrow-track tractors,dimensions for master shield and clearance zone



24.GB/T 1592.3—2016 农业拖拉机 后置动力输出轴 1、2、3 和 4 型  
第 3 部分:动力输出轴尺寸和花键尺寸、动力输出轴位置  
Agricultural tractors-Rear-mounted power take-off types 1,2,3 and 4-Part 3:Main PTO dimensions and spline dimensions,location of PTO



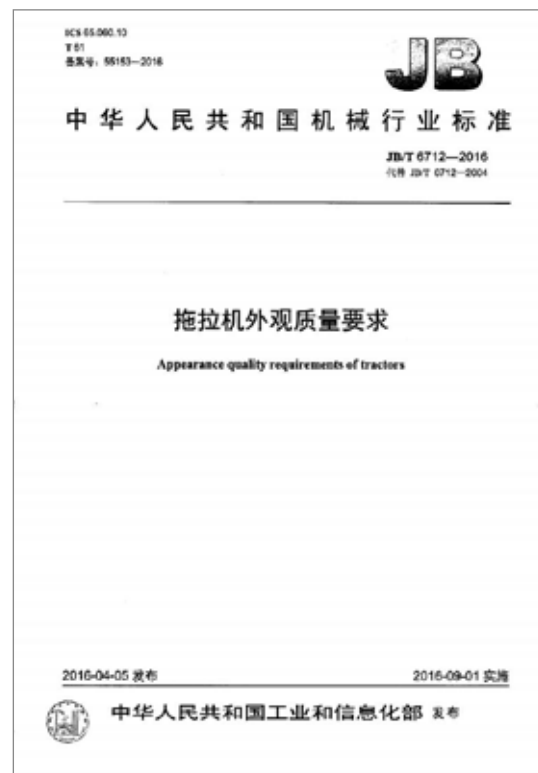
25.GB/T 19040—2016 农业拖拉机 转向要求  
Agricultural tractors—Requirements for steering



26.GB/T 20343—2016 农业拖拉机和机械 三点悬挂机具的连接装置  
机具周围的间隙范围  
Agricultural tractors and machinery—Connection of implements via three-point linkage—Clearance zone around implement



27.JB/T 4394—2016 稀土镁硅合金 稀土总量、硅、总镁和氧化镁  
的化学分析方法  
Rare earth magnesium silicon alloys—Chemical analysis methods of total rare earth, silicon, total magnesium and magnesium



28.JB/T 6712—2016 拖拉机外观质量要求  
Appearance quality requirements of tractors



29.JB/T 7282—2016 拖拉机用润滑油品种、规格的选用  
Type and specifications of lubricants for tractors



30.JB/T 9844—2016 拖拉机及内燃机用永磁交流发电机  
Magneto-generator for motor tractors and internal-combustion engine



31.JB/T 10637—2016 农林拖拉机和机具 高温低压输油胶管  
Agriculture and forest tractor and machinery—Rubberized oil tube of hi-temperature and low pressure



32.JB/T 11979—2016 拖拉机及内燃机用交流发电机整流器 技术条件  
Rectifier of alternator applied to motor tractors and internal-combustion engine—Specifications



33.JB/T 11982—2016 拖拉机及内燃机用发电机 球轴承 技术条件  
Motor tractors and internal combustions-alternator-Ball bearing-Specifications



34.JB/T 12673—2016 轻型履带拖拉机 通用技术条件  
Light crawler tractor-General requirement



35.JB/T 12674—2016 拖拉机前位灯、后位灯和制动灯  
Tractors front lamp, rear lamp and braking lamp



36.JB/T 12675—2016 拖拉机液压系统清洁度限值及测量方法  
Tractor hydraulic systems Limit values for cleanliness and measuring method



37.JB/T 12676—2016 拖拉机用燃油传感器  
Fuel sensor for tractor



38.JB/T 12678—2016 拖拉机转向信号灯  
Tractors steering signal



39.JB/T 12846—2016 手扶拖拉机照明及灯光信号装置  
Walking tractors lighting and light-signalling devices



40.JB/T 12847—2016 拖拉机冷却系热平衡 试验方法  
Thermal equilibrium of cooling system for tractors-Test procedures





41.JB/T 12848—2016 拖拉机性能试验用跑道要求  
Requirements of runway for tractor tests



42.JB/T 12916—2016 拖拉机用压力报警器  
Pressure alarms for tractors



43.GB/T 15370.7—2017 农业拖拉机 通用技术条件  
第7部分：三轮船式拖拉机  
Agricultural tractors-General requirement-Part 7:Three-wheel boat tractors



44.GB/T 19498—2017 农林拖拉机防护装置 静态试验方法和验收条件  
Protective structures on agricultural and forestry tractors-Static testing method  
and accepting condition



45.GB/T 34372—2017 手扶拖拉机 牵引装置尺寸及动力输出装置型式  
Walking tractor—Drawbar dimensions and power take-off types



46.GB/T 33641.1—2017 农林拖拉机和机械 安全带  
第1部分：固定装置位置要求  
Tractors and machinery for agriculture and forestry—Seat belts—Part 1: Anchorage location requirement



47.GB/T 33641.2—2017 农业拖拉机和机械 安全带  
第2部分：固定装置强度要求  
Tractors and machinery for agriculture and forestry—Seat belts—Part 2: Anchorage strength requirements



48.GB/T 33641.3—2017 农林拖拉机和机械 安全带  
第3部分：总成要求  
Tractors and machinery for agriculture and forestry—Seat belts—Part 3: Requirements for assemblies



49.GB/T 33642—2017 农林拖拉机轮胎 快速耐磨试验方法  
Tractor tires for agriculture and forestry—Test procedures of quick abrasion resistance



50.GB/T 34360-2017 冲压件材料消耗工艺定额编制要求  
Compiling requirement of technological norm for stamping part material consumption



51.GB/T 35381.4—2017 农林拖拉机和机械 串行控制和通信数据网络 第4部分：网络层  
Tractors and machinery for agriculture and forestry—Serial control and communications data network—Part 4: Network layer



52.GB/T 35381.5—2017 农林拖拉机和机械 串行控制和通信数据网络 第5部分：网络管理  
Tractors and machinery for agriculture and forestry—Serial control and communications data network—Part 5: Network management



53.GB/T 35381.6—2017 农林拖拉机和机械 串行控制和通信数据网络  
第6部分:虚拟终端  
Tractors and machinery for agricultural and forestry—Serial control and  
communications data network—Part 6:Virtual terminal



54.GB/T 35381.8—2017 农林拖拉机和机械 串行控制和通信数据网络  
第8部分:动力传动系消息  
Tractors and machinery for agricultural and forestry—Serial control and  
communications data network—Part 8:Power train messages



55.GB/T 35381.9—2017 农林拖拉机和机械 串行控制和通信数据网络  
第9部分:拖拉机 ECU  
Tractors and machinery for agriculture and forestry—Serial control and  
communications data network—Part 9:Tractor ECU



56.GB/T 35381.11—2017 农林拖拉机和机械 串行控制和通信数据网  
络 第11部分:数据源词典  
Tractors and machinery for agricultural and forestry—Serial control and  
communications data network—Part 11:Mobile data element dictionary



57.JB/T 2428—2017 拖拉机用转速工作小时表  
Speed & hour meters for tractor



58.JB/T 9221—2017 铸造用湿型砂有效膨润土及有效煤粉试验方法  
Test method for effective bentonite and effective seacoal content in green  
molding sand



59.JB/T 13141—2017 拖拉机 转向液压缸  
Tractor-Steering cylinder



60.JB/T 13290—2017 拖拉机液压系统滤清器 技术条件  
Filters for hydraulic system of tractor-Specifications



61.GB/T 35218—2017 拖拉机可靠性 台架试验方法  
Tractor reliability-Bench test procedures



62.GB/T 35350-2017 拖拉机与被牵引车辆之间机械连接装置 要求和  
试验方法  
Mechanical couplings between tractor and towed vehicle-Requirement and  
testing method



63. GB/T 12214—2019 熔模铸造用硅砂、粉  
Silica sand and flour for investment casting



64.GB/T 12215—2019 熔模铸造用铝矾土砂、粉  
Bauxite sand and flour for investment casting

# 中国浦发机械工业股份有限公司

China Perfect Machinery Industry Co., Ltd.

公司名称：中国浦发机械工业股份有限公司

Company Name: YTO Group Corporation

所属企业

中国能源工程集团有限公司

中国空分工程有限公司

中机联合投资发展有限公司

China Energy Engineering Group Co., Ltd.

China National Air Separation Engineering CO., LTD.

China Machinery United Investment Co., Ltd.

1992年10月，原机械电子工业部响应中央号召，与上海市在“部市共建，开发浦东”的大背景下，全国各省市机械工业厅局及企业共200余家共同出资组建成立了中国浦发机械工业股份有限公司（以下简称中国浦发）。1997年中央部委体制改革以后，中国浦发隶属于国机集团，国机集团所占股比54.15%。中国浦发依托上海的区位优势，充分发挥在机械行业中的影响，经过二十多年的辛勤耕耘，现已拥有17家控股子公司，职工总人数近2000人，其中工程技术人员占比超过60%，实现了总公司、子公司同步协调发展的混合所有制结构模式。公司主营业务涉及电力、化工、环境保护、基础设施建设等国内外工程设计及总承包，大宗商品及机电成套设备进出口贸易，以及商业地产和工业园区资产运营，年营业收入超过百亿元。中国浦发将秉持包容创新、开拓共赢的精神，以做强做优国有企业为使命，继续努力打造以资产经营为统领、以工程建设为主线、以贸易和金融服务为协同的平台化资产经营公司，成为国内一流的综合服务企业，为同行者创造价值。

In October 1992, in response to the central call, the former Ministry of Mechanical and Electronic Industry and Shanghai jointly established Pufa Machinery Industry Co., Ltd. (hereinafter referred to as Pufa China) under the background of "co-construction of ministries and municipalities and development of Pudong". After the reform of the central ministries and commissions in 1997, China perfect belongs to the State Machinery Group, which accounts for 54.15% of the shares. Relying on Shanghai's location advantages, China perfect has fully exerted its influence in the machinery industry. After more than 20 years of hard work, it has 17 holding subsidiaries and nearly 2000 employees. Among them, more than 60% are engineers and technicians. It has realized the mixed ownership structure of synchronous and coordinated development of headquarters and subsidiaries. Pattern. The company's main business involves engineering design and general contracting of power, chemical industry, environmental protection and infrastructure construction at home and abroad, import and export trade of bulk commodities and mechanical and electrical equipment, as well as assets operation of commercial real estate and industrial parks, with annual operating revenue exceeding 10 billion yuan. China perfect will uphold the spirit of inclusive innovation, pioneering and win-win development, with the mission of strengthening and excelling state-owned enterprises as its mission, continue to strive to build a platform asset management company with asset management as its leadership, project construction as its main line, and trade and financial services as its synergy. China perfect will become a first-class comprehensive service enterprise in China and create for its peers. Value.

## 联系人及联系方式

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标准  
Standards

## 1. 溶解乙炔设备

注：本标准是中国浦发所属中国空分工程有限公司主编修订的行业标准，属于产品标准。

本标准规定了溶解乙炔设备的术语和定义、压力分等与产品分类、技术要求、试验方法、检验规则和标志、包装、运输及贮存。本标准适用于以电石为原料生产溶解乙炔，其产量大于或等于20m<sup>3</sup>/h的溶解乙炔设备。管道输送乙炔的乙炔设备可参照执行。本标准不适用于国防、铁路和航运系统的专用乙炔设备。

## Dissolving acetylene equipment

This standard specifies the terms and definitions of dissolving acetylene equipment, pressure grading and product classification, technical requirements, test methods, inspection rules and signs, packaging, transportation and storage. This standard is suitable for the production of dissolved acetylene with calcium carbide as raw material. Its output is greater than or equal to 20 m<sup>3</sup>/h. The acetylene equipment for pipeline transportation of acetylene can be executed with reference. This standard is not applicable to special acetylene equipment for national defense, railway and shipping systems.



## 2. 空冷式热交换器

注：本标准是中国浦发所属蓝科高新主编修订的行业标准，属于产品标准。

本标准规定了鼓风和引风空冷式热交换器设计、材料、制造、检验和验收要求以及其能效评价方法。

## Air-cooled heat exchange

This standard specifies the design, material, manufacture, inspection and acceptance requirements of air-cooled heat exchangers with blast and induced air as well as their energy efficiency evaluation methods.

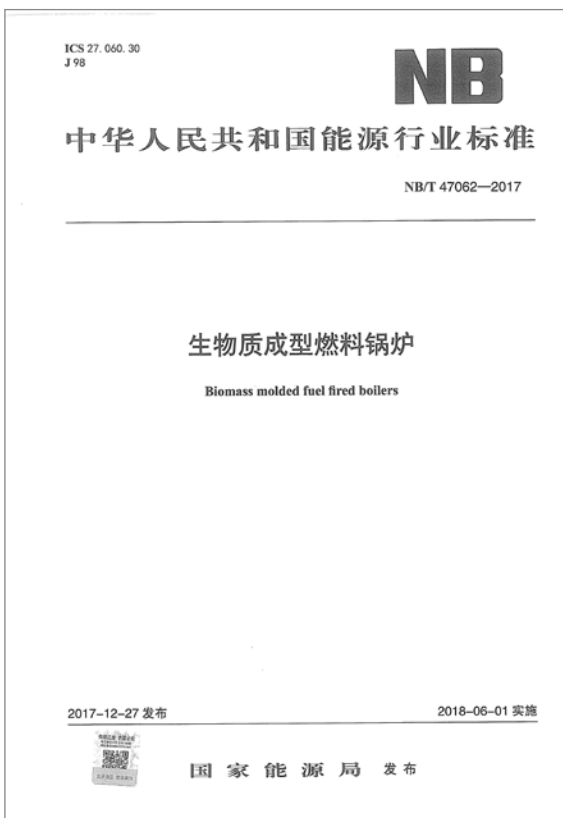


### 3. 板式热交换器 第 1 部分：可拆卸板式热交换器

注：本标准是中国浦发所属蓝科高新主编修订的行业标准，属于产品标准。

NB/T 47004.1—2017《板式热交换器》分为 2 个部分：第 1 部分：可拆卸板式热交换器；第 2 部分：焊接板式热交换器。

Plate heat exchangers Part 1: Removable plate heat exchangers  
NB/T 47004.1-2017 "Plate Heat Exchanger" is divided into two parts: Part 1: Removable Plate Heat Exchanger; Part 2: Welded Plate Heat Exchanger.



### 4. 生物质成型燃料锅炉

注：本标准是中国浦发所属蓝科高新主编制定的行业标准，属于产品标准。

标准按 GB/T 1.1—2009《标准化工作导则 第 1 部分：标准的结构和编写》给出的规则起草。

Biomass briquette boiler  
Standards are drafted in accordance with the rules given in GB/T 1.1-2009 "Guidelines for Standardization Work Part 1: Structure and Compilation of Standards"



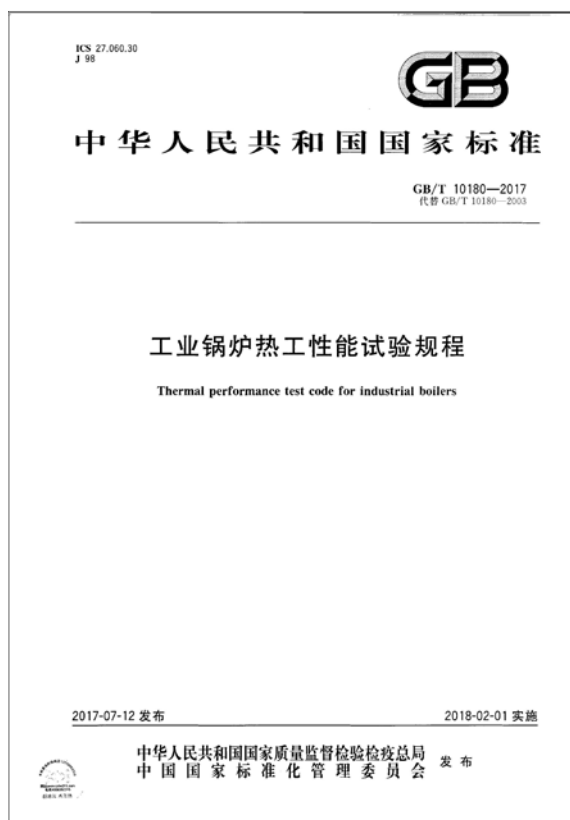
### 5. 蓄能压力容器

注：本标准是中国浦发所属蓝科高新主编制的国家标准，属于产品标准。

本标准规定了蓄能压力容器的材料、设计、制造、性能和试验、检验规则、标志、包装、运输和安全使用等要求。

Energy storage pressure vessel

This standard stipulates the material, design, manufacture, performance and test, inspection rules, marks, packaging, transportation and safe use of energy storage pressure vessels.



### 6. 工业锅炉热工性能试验规程

注：本标准是中国浦发所属蓝科高新主编制的国家标准，属于产品标准。

本标准代替 GB/T10180—2003 《工业锅炉热工性能试验规程》。

Test Rules for Thermal Performance of Industrial Boilers

This standard replaces GB/T10180-2003 "Test Rules for Thermal Performance of Industrial Boilers".



## 7. 螺旋板式热交换器

注：本标准是中国浦发所属蓝科高新主编修订的行业标准，属于产品标准。

标准规定了螺旋板式热交换器的材料、设计、制造、检验和验收要求。标准适用于可拆和不可拆螺旋板式热交换器。I 型螺旋板式热交换器为不可拆螺旋板式热交换器；II 型（封堵型）和 III 型（贯通型）螺旋板式热交换器为可拆螺旋板式热交换器。标准适用于碳素钢、低合金钢、奥氏体不锈钢、奥氏体—铁素体双相不锈钢以及钛（钛合金）制螺旋板式热交换器。

### Spiral plate heat exchanger

The standard stipulates the material, design, manufacture, inspection and acceptance requirements of spiral plate heat exchanger. The standard is suitable for removable and non-removable spiral plate heat exchangers. Type I spiral plate heat exchanger is non-removable spiral plate heat exchanger; Type II (plugging type) and Type III (through type) spiral plate heat exchanger is removable spiral plate heat exchanger. The standard is suitable for spiral plate heat exchangers made of carbon steel, low alloy steel, austenitic stainless steel, austenitic-ferritic duplex stainless steel and titanium (titanium alloy).



## 8. 深冷容器用材料与气体的相容性判定导则

注：本标准是中国浦发所属蓝科高新主编制定的国家标准，属于产品标准。

本标准规定了深冷容器用材料与气体的相容性要求，但不包括在低温工况下的机械性能要求。本标准规定了材料与气体相容性判定的一般原则、材料与纯氧或富氧环境相容性的具体要求以及深冷容器及其附属设备用金属和非金属材料与氧相容性的试验方法。本标准主要适用于冷冻液化气体介质环境中以及可能与冷冻液化气体接触的材料。

### Guidelines for determining the compatibility of materials and gases for cryogenic vessels

This standard specifies the compatibility requirements of materials and gases for cryogenic vessels, but excludes the mechanical performance requirements under low temperature conditions. This standard specifies the general principles for judging the compatibility of materials with gases, the specific requirements for the compatibility of materials with pure oxygen or oxygen-enriched environment, and the test methods for the compatibility of metal and non-metal materials with oxygen for cryogenic vessels and their ancillary equipment. This standard is mainly applicable to refrigerated liquefied gas medium environment and materials that may be in contact with refrigerated liquefied gas.



#### 9. 深冷容器用高真空多层绝热材料

注：本标准是中国浦发所属蓝科高新主编制定的国家标准，属于产品标准。

本标准规定了深冷容器常用的高真空多层绝热材料的产品类型和型号、原材料、技术要求、试验方法、检验规则、标志、产品出厂资料及包装、运输和储存等要求。本标准适用于采用高真空多层绝热方式的深冷容器中，由间隔材料和反射屏交替组合而成的绝热材料。本标准首次以附录的形式解释了高真空多层绝热材料绝热性能、真空性能的测试方法。

Guidelines for determining the compatibility of materials and gases for cryogenic vessels

This standard specifies the product types and models, raw materials, technical requirements, test methods, inspection rules, labels, factory data, packaging, transportation and storage requirements of high vacuum multi-layer insulation materials commonly used in cryogenic containers. This standard is suitable for cryogenic vessels with high vacuum and multi-layer insulation. It is composed of spacer material and reflecting screen alternately. This standard explains for the first time in the form of appendix the test methods of insulation and vacuum properties of high vacuum multilayer insulation materials.

# 甘肃蓝科石化高新装备股份有限公司

Lanpec Technologies Limited

公司名称：甘肃蓝科石化高新装备股份有限公司

Company Name: Lanpec Technologies Limited

蓝科高新主要从事石油钻采机械、炼油化工设备、海洋与沙漠石油设备和工程、中小型炼油化工和天然气处理及液体回收工程、轻工与食品机械的研究、设计、开发、制造及石油钻采机械和炼油化工设备的性能测试与评定、石油和石油化工及其装备的先进计算机软件引进与开发、技术咨询及相关工程设计、工程总承包与施工、制造的监理、监造等工作。

蓝科高新拥有国家主管部门颁发的 A1、A2、A3、SAD 级特种设备（压力容器）设计许可证和 A1、A2、A3 特种设备（压力容器）制造许可证、GB/GC 类特种设备（压力管道）设计许可证、ASME 制造许可证、乙级工程设计和工程总承包资格证书、“三位一体”管理体系（质量、环境、职业健康安全）认证证书、进出口企业资格证书、对外经济合作经营资格证书、出口产品质量体系认证证书、海洋开发工程专项设计资格证书等重要资格证书 27 项。

蓝科高新长期为国家编制有关石油机械工业的发展规划，从“六五”到“十二五”时期为国家编制重大规划 42 项。由蓝科高新主持和组织编制的经国家批准的石油化工设备国家和行业标准 80 余类 400 余项。

LANPEC's mainly engaged in the petroleum drilling machinery; the refining and petrochemical engineering equipment; the offshore and desert petroleum equipment and engineering; the project of petroleum refining and chemical engineering, natural gases treatment and liquid recovery; the research, development, design and manufacture of light industry and food machinery; the performance test and assessment on the petroleum drilling machinery and the refining chemical equipment; the related computer software introduction, development and technology consultation for purpose of the petroleum and petrochemical engineering and the attached equipment; and the relevant engineering design and general contracting, construction, manufacture supervision, construction surveying, etc.

LANPEC owns 27 major qualification certificates issued by the State competent departments, such as the classes A1, A2, A3 and SAD Design certificates and Manufacturer certificates of Special Equipment (pressure vessel), the GB/GC Class Design Permit of Special Equipment (pressure piping), the ASME Manufacturer certificate, the U Certificate, the Class II Engineering Design and Engineering Consulting Certificate, the Management System (Quality, Environment and Occupational Health and Safety) Authentication Certificate, Import and export enterprises qualification certificates, foreign economic cooperation qualification certificates, export product quality system certification, offshore development project engineering qualification certificates etc.,.

LANPEC prepares the long-term development plan for the national petroleum machinery industry. During 6th to 12th Five-Year Plan, LANPEC prepared 42 major national plans. There are over 400 national and industry standards in petroleum chemical equipment were organized & issued by Lanpec Technologies Limited.

## 联系人及联系方式

Contact Person and Information

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Contact person: Zhang Yufu

Phone: 13919159702

**标准**  
Standards

序号	标准编号	标准名称	英文名称	起草单位
1	GB/T 151-2014	热交换器	Heat exchangers	甘肃蓝科石化高新装备股份有限公司
2	GB/T 12337-2014	钢制球形储罐	Steel spherical tanks	甘肃蓝科石化高新装备股份有限公司
3	GB/T 17261-2011	钢制球形储罐型式与基本参数	Steel spherical tanks type and dimension data base	甘肃蓝科石化高新装备股份有限公司
4	GB/T 20663-2017	蓄能压力容器	Accumulators	上海蓝滨石化设备有限责任公司
5	GB/T 27698.1-2011	热交换器及传热元件性能测试方法 第1部分：通用要求	Test method for the performance of heat exchangers and heat exchange element. Part 1:General requirements	甘肃蓝科石化高新装备股份有限公司 (兰州石油机械研究所)
6	GB/T 27698.2-2011	热交换器及传热元件性能测试方法 第2部分：管壳式热交换器	Test method for the performance of heat exchangers and heat exchange element. Part 2:Tubular heat exchanger	甘肃蓝科石化高新装备股份有限公司 (兰州石油机械研究所)
7	GB/T 27698.3-2011	热交换器及传热元件性能测试方法 第3部分：板式热交换器	Test method for the performance of heat exchangers and heat exchange element. Part 3:Plate heat exchanger	甘肃蓝科石化高新装备股份有限公司 (兰州石油机械研究所)
8	GB/T 27698.4-2011	热交换器及传热元件性能测试方法 第4部分：螺旋板式热交换器	Test method for the performance of heat exchangers and heat exchange element. Part 4:Spiral heat exchanger	甘肃蓝科石化高新装备股份有限公司 (兰州石油机械研究所)
9	GB/T 27698.5-2011	热交换器及传热元件性能测试方法 第5部分：管壳式热交换器用换热管	Test method for the performance of heat exchangers and heat exchange element. Part 5:Heat transfer tube for tubular heat exchangers	甘肃蓝科石化高新装备股份有限公司 (兰州石油机械研究所)
10	GB/T 27698.6-2011	热交换器及传热元件性能测试方法 第6部分：空冷器用翅片管	Test method for the performance of heat exchangers and heat exchange element. Part 6:Fing tube for air-cooled heat exchangers	甘肃蓝科石化高新装备股份有限公司 (兰州石油机械研究所)
11	GB/T 27698.7-2011	热交换器及传热元件性能测试方法 第7部分：空冷器噪声测定	Test method for the performance of heat exchangers and heat exchange element. Part 7:Measurement of noise from air-cooled heat exchangers	甘肃蓝科石化高新装备股份有限公司 (兰州石油机械研究所)
12	GB/T 27698.8-2011	热交换器及传热元件性能测试方法 第8部分：热交换器工业标定	Test method for the performance of heat exchangers and heat exchange element. Part 8:Determination of industrial locale for heat exchangers	甘肃蓝科石化高新装备股份有限公司 (兰州石油机械研究所)
13	GB/T 28712.1-2012	热交换器型式与基本参数 第1部分：浮头式热交换器	Types and basic parameters of heat exchangers. Part 1:floating heat exchangers	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
14	GB/T 28712.3-2012	热交换器型式与基本参数 第3部分：U形管式热交换器	Types and basic parameters of heat exchangers. Part 3:U-tube heat exchangers	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
15	GB/T 28712.6-2012	热交换器型式与基本参数 第6部分：空冷式热交换器	Type and basic parameters of heat exchanger. Part 6:air cooled heat exchanger	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
16	GB/T 28713.1-2012	管壳式热交换器用强化传热元件 第1部分：螺纹管	Enhanced heat transfer elements used in tube-shell heat exchangers. Part 1: Threaded tubes	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
17	GB/T 28713.2-2012	管壳式热交换器用强化传热元件 第2部分：不锈钢波纹管	Enhanced heat transfer elements used in tube-shell heat exchangers. Part 2:Stainless steel corrugated tubes	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
18	GB/T 28713.3-2012	管壳式热交换器用强化传热元件 第3部分：波节管	Enhanced heat transfer elements used in tube-shell heat exchangers. Part 3:Wavy tubes	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
19	GB/T 29463.1-2012	管壳式热交换器用垫片 第1部分：金属包垫片	Gaskets used in tube-shell heat exchangers. Part 1:Metallic jacketed gaskets	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
20	GB/T 29463.2-2012	管壳式热交换器用垫片 第2部分：缠绕式垫片	Gaskets used in tube-shell heat exchangers. Part 2:Spiral wound gasket	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
21	GB/T 29463.3-2012	管壳式热交换器用垫片 第3部分：非金属软垫片	Gaskests used in tube-shell heat exchangers. Part 3:Nonmetallic gaskets	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
22	GB/T 29464-2012	两相流喷射式热交换器	Steam-driven jet heat exchanger	甘肃蓝科石化高新装备股份有限公司



23	GB/T 29465-2012	浮头式热交换器用外头盖侧法兰	Shell flange-rear head end of floating heat exchangers	甘肃蓝科石化高新装备股份有限公司、上海蓝滨石化设备有限责任公司
24	GB/T 29466-2012	板式热交换器机组	Plate heat exchanger unit	甘肃蓝科石化高新装备股份有限公司
25	NB/T 47001 — 2009 (JB/T 4713-2009)	钢制液化石油气卧式储罐型式与基本参数	Steel liquidified petroleum gas horizontal tanks type and data base	甘肃蓝科石化高新装备股份有限公司
26	NB/T 47003.1 — 2009 (JB/T 4735.1-2009)	钢制焊接常压容器	Steel welded atmospheric pressure vessels	甘肃蓝科石化高新装备股份有限公司
27	NB/T 47003.2 — 2009 (JB/T 4735.2-2009)	固体料仓	Silos for solid materials	甘肃蓝科石化高新装备股份有限公司
28	NB/T 47004.1 — 2017	板式热交换器 第1部分：可拆卸板式热交换器	Plate heat exchangers. Part 1: Plate-and-frame heat exchangers	上海蓝滨石化设备有限责任公司
29	NB/T 47005 — 2009 (JB/T 4753-2009)	板式蒸发装置	Plate evaporator device	甘肃蓝科石化高新装备股份有限公司
30	NB/T 47006 — 2009 (JB/T 4757-2009)	铝制板翅式热交换器	Aluminum plate-fin heat exchanger	杭州制氧机集团有限公司、兰州石油机械研究所
31	NB/T 47007 — 2018	空冷式热交换器	Air-cooled heat exchangers	上海蓝滨石化设备有限责任公司
32	NB/T 47019.1 — 2011	锅炉、热交换器用管订货技术条件 第1部分：通则	Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 1:General Requirements	中国特种设备检测研究院、甘肃蓝科石化高新装备股份有限公司
33	NB/T 47019.2 — 2011	锅炉、热交换器用管订货技术条件 第2部分：规定室温性能的非合金钢和合金钢	Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 2:Non-alloy and alloy steel with room temperature properties	甘肃蓝科石化高新装备股份有限公司
34	NB/T 47019.4 — 2011	锅炉、热交换器用管订货技术条件 第4部分：低温用低合金钢	Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 4:Low alloy steel for low-temperature service	上海蓝滨石化设备有限责任公司
35	NB/T 47019.5 — 2011	锅炉、热交换器用管订货技术条件 第5部分：不锈钢	Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 5:Stainless steel	常州博尼特种钢管有限公司、甘肃蓝科石化高新装备股份有限公司
36	NB/T 47019.6 — 2011	锅炉、热交换器用管订货技术条件 第6部分：铁素体 / 奥氏体型双相不锈钢	Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 6:Ferrite/austenite duplex steel	江苏武进不锈钢管厂集团有限公司、甘肃蓝科石化高新装备股份有限公司
37	NB/T 47019.7 — 2011	锅炉、热交换器用管订货技术条件 第7部分：有色金属 铜和铜合金	Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 7:Copper and copper alloy/tube	甘肃蓝科石化高新装备股份有限公司
38	NB/T 47019.8 — 2011	锅炉、热交换器用管订货技术条件 第8部分：有色金属 钛和钛合金	Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 8:Titanium and titanium/alloy	甘肃蓝科石化高新装备股份有限公司
39	NB/T 47041-2014 (JB 4710-2014)	塔式容器	Vertical vessels supported by skirt	甘肃蓝科石化高新装备股份有限公司
40	NB/T 47042-2014	卧式容器	Horizontal vessels on saddle supports	甘肃蓝科石化高新装备股份有限公司参与
41	NB/T 47045-2015	钎焊板式热交换器	Brazed plate heat exchangers	上海蓝滨石化设备有限责任公司
42	NB/T 47048-2015	螺旋板式热交换器	Spiral plate heat exchanger	合肥通用机械研究所、甘肃蓝科石化高新装备股份有限公司
43	NB/T 47013.2-2015	承压设备无损检测 第2部分：射线检测	Nondestructive testing of pressure equipments-Part2: Radiographic testing	中国特种设备检测研究院、甘肃蓝科石化高新装备股份有限公司
44	JB/T 1118-2001	F1 型浮阀	F1-valve	兰州石油机械研究所
45	JB/T 1119-1999	卡子	Holding-down clip	兰州石油机械研究所
46	JB/T 1120-1999	双面可拆连接件	Double-sided dismountable fastenings	兰州石油机械研究所
47	JB/T 1205-2001	塔盘技术条件	Tray-technical requirements	兰州石油机械研究所
48	JB/T 1212-1999	圆泡帽	Round bubble cap	兰州石油机械研究所
49	JB/T 2878.1-1999	X1 型楔卡	X1-type wedge holding-down clip	兰州石油机械研究所
50	JB/T 2878.2-1999	X2 型楔卡	X2-type wedge holding-down clip	兰州石油机械研究所
51	JB/T 3166-1999	S 型双面可卸卡子	S-type double-sided dismountable holding down clip	兰州石油机械研究所
52	TSG R0010-2019	热交换器能效测试与评价规则	Energy Efficiency Test and Evaluation Regulation for Heat Exchanger	甘肃蓝科石化高新装备股份有限公司

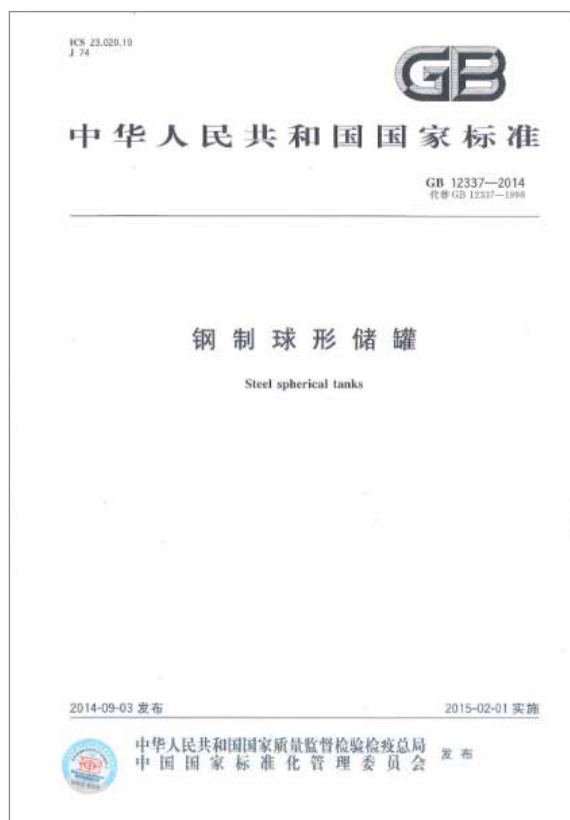


### 1. GB/T 151—2014 热交换器

本标准规定了金属制热交换器的通用要求，并规定了管壳式热交换器材料、设计、制造、检验、验收及其安装、使用的要求。

#### Heat exchangers

This standard specifies the general requirements of metal heat exchangers and the requirements for material, design, manufacture, testing and inspection, acceptance, installation and use of tubular heat exchangers.



### 2. GB/T 12337—2014 钢制球形储罐

本标准规定了钢制球形储罐的设计（包括规则设计和分析设计）、制造、组焊、检验与验收的要求。

#### Steel spherical tanks

This standard specifies the requirements for design (including rule design and analysis design), manufacture, welding, testing and inspection and acceptance of steel spherical tanks.



### 3. GB/T 17261—2011 钢制球形储罐型式与基本参数

本标准适用于石油、化工、冶金、城镇燃气等工业用储存气体和液体物料的以赤道正切柱式支撑的球罐。

Steel spherical tanks type and dimension data base

This standard is applicable to spherical tanks supported by equatorial tangential columns for storing gases and liquid materials for petroleum, chemical, metallurgical and urban gas industries.



### 4. GB/T 20663—2017 蓄能压力容器

本标准规定了蓄能压力容器（除明确专指某类型蓄能器之外，以下均简称“蓄能器”）的材料、设计、制造、性能和试验、检验规则、标志、包装、运输和安全使用等要求。

Accumulators

This standard specifies the material, design, manufacture, performance and testing, inspection rules, marks, packaging, transport and safe use of energy storage pressure vessels (In addition to specifically referring to a certain type of accumulator, hereinafter referred to as "accumulator").



#### 5. GB/T 27698.1—2011 热交换器及传热元件性能测试方法 第1部分：通用要求

本部分规定了管壳式热交换器、板式热交换器、螺旋板式热交换器以及管壳式热交换器用传热管的液—液无相变、汽—液冷凝有相变、汽—液蒸发有相变测试工况的性能测试通用方法。

Test method for the performance of heat exchangers and heat exchange element. Part 1: General requirements

In this section, a general method for performance testing of tubular heat exchangers, plate heat exchangers, spiral plate heat exchangers and heat transfer tubes for tubular heat exchangers is provided, including liquid-liquid phase-free, vapor-liquid condensation phase-change and vapor-liquid evaporation phase-change test conditions.



#### 6. GB/T 27698.2—2011 热交换器及传热元件性能测试方法 第2部分：管壳式热交换器

本部分规定了管壳式热交换器液—液无相变、汽—液冷凝有相变、汽—液蒸发有相变测试工况的传热和流体阻力性能测试方法。

Test method for the performance of heat exchangers and heat exchange element. Part 2: Tubular heat exchanger

This section specifies the test methods for heat transfer and fluid resistance performance of tubular heat exchangers under the test conditions of liquid-liquid phase-free, vapor-liquid condensation phase-change and vapor-liquid evaporation phase-change.



7. GB/T 27698.3—2011 热交换器及传热元件性能测试方法 第3部分：板式热交换器

本部分规定了板式热交换器液—液无相变、汽—液冷凝有相变、汽—液蒸发有相变测试工况（包括半焊板式热交换器、全焊板式热交换器）的传热和流体阻力性能测试方法。

Test method for the performance of heat exchangers and heat exchange element.  
Part 3: Plate heat exchanger

This section specifies the test methods for heat transfer and fluid resistance performance of plate heat exchangers (including semi-welded plate heat exchanger and full-welded plate heat exchanger) under the test conditions of liquid-liquid phase-free, vapor-liquid condensation phase-change and vapor-liquid evaporation phase-change.



8. GB/T 27698.4—2011 热交换器及传热元件性能测试方法 第4部分：螺旋板式热交换器

本部分规定了螺旋板式热交换器液—液无相变、汽—液冷凝有相变、汽—液蒸发有相变测试工况的传热和流体阻力性能测试方法。

Test method for the performance of heat exchangers and heat exchange element.  
Part 4: Spiral heat exchanger

This section specifies the test methods for heat transfer and fluid resistance performance of spiral plate heat exchangers under the test conditions of liquid-liquid phase-free, vapor-liquid condensation phase-change and vapor-liquid evaporation phase-change.



#### 9. GB/T 27698.5-2011 热交换器及传热元件性能测试方法 第5部分:管壳式热交换器用换热管

本部分规定了管壳式热交换器用换热管液-液无相变、汽-液有相变冷凝、流动沸腾蒸发有相变和池沸腾蒸发有相变测试工况的传热和流体阻力性能测试方法。

Test method for the performance of heat exchangers and heat exchange element. Part 5: Heat transfer tube for tubular heat exchangers

This section specifies the test methods for heat transfer and fluid resistance performance of tubular heat exchanger tubes under the test conditions of liquid-liquid phase-free, vapor-liquid phase-change, flow boiling evaporation phase-change and pool boiling evaporation phase-change.



#### 10. GB/T 27698.6-2011 热交换器及传热元件性能测试方法 第6部分:空冷器用翅片管

本部分规定了空冷器用翅片管的单管传热性能测试方法, 本部分适用的测试流体, 管内一般为蒸汽, 管外为空气; 适用于各种型式和材质的空冷器用翅片管的传热性能测试。

Test method for the performance of heat exchangers and heat exchange element. Part 6: Fing tube for air-cooled heat exchangers

The section specifies the performance testing method of fing tube for air-cooled heat exchangers. This section is suitable for the test fluid, which is generally steam in the tube and air outside the tube. It is suitable for the test of fing tube for air-cooled heat exchangers of various types and materials.



11. GB/T 27698.7—2011 热交换器及传热元件性能测试方法 第7部分：空冷器噪声测定

本部分规定了空冷器噪声 A 声级、倍频程声压级和声功率级的测定方法。

Test method for the performance of heat exchangers and heat exchange element. Part 7: Measurement of noise from air-cooled heat exchangers

This section specifies the measurement of A level noise from air-cooled heat exchangers, octave sound pressure level and sound power level.



12. GB/T 27698.8—2011 热交换器及传热元件性能测试方法 第8部分：热交换器工业标定

本部分规定了热交换器工业现场的标定方法。本部分适用于工业现场在用的管壳式热交换器、螺旋板式热交换器、板式热交换器液—液无相变换热、汽—液有相变热工况的工业现场标定。本部分适用于工业现场在用的空冷式热交换器气—液无相变换热、气—液有相变换热工况的工业现场标定。

Test method for the performance of heat exchangers and heat exchange element. Part 8: Determination of industrial locale for heat exchangers

This section defines the calibration method of heat exchanger industrial site. This part is suitable for industrial calibration of tubular heat exchangers, spiral plate heat exchangers, plate heat exchangers in liquid-liquid phase-free heat transfer and vapor-liquid phase-change heat transfer conditions. This part is suitable for industrial calibration of gas-liquid phase-free heat transfer and gas-liquid phase-change heat transfer of air-cooled heat exchanger in use.





13. GB/T 28712.1—2012 热交换器型式与基本参数 第 1 部分 :  
浮头式热交换器

本部分规定了浮头式换热器和浮头式冷凝器的型式、公称压力、  
公称直径、计算换热面积等基本参数。

Types and basic parameters of heat exchangers. Part 1: floating heat exchangers  
This section defines the basic parameters of floating heat exchanger and floating  
condenser, such as type, nominal pressure, nominal diameter, calculation of heat  
exchange area, etc.



14. GB/T 28712.3—2012 热交换器型式与基本参数 第 3 部分 :U  
形管式热交换器

本部分规定了 U 形管式热交换器的型式、公称压力、公称直径、  
计算换热面积等基本参数。

Types and basic parameters of heat exchangers. Part 3: U-tube heat exchangers  
This section defines the basic parameters of U-tube heat exchanger, such as type,  
nominal pressure, nominal diameter, calculation of heat exchange area, etc.



15.GB/T 28712.6—2012 热交换器型式与基本参数 第6部分：空冷式热交换器

本部分规定了鼓风式、引风式空冷式热交换器的型式与管束、构架、风机、百叶窗等部件的公称尺寸和基本参数。

Type and basic parameters of heat exchanger. Part 6: air cooled heat exchanger  
This section defines the nominal dimensions and basic parameters of the tube bundles, frames, fans, shutters and other components of air-cooled and induced air-cooled heat exchangers.



16.GB/T 28713.1—2012 管壳式热交换器用强化传热元件 第1部分：螺纹管

本部分规定了管壳式热交换器用螺纹管的基本参数和技术要求。

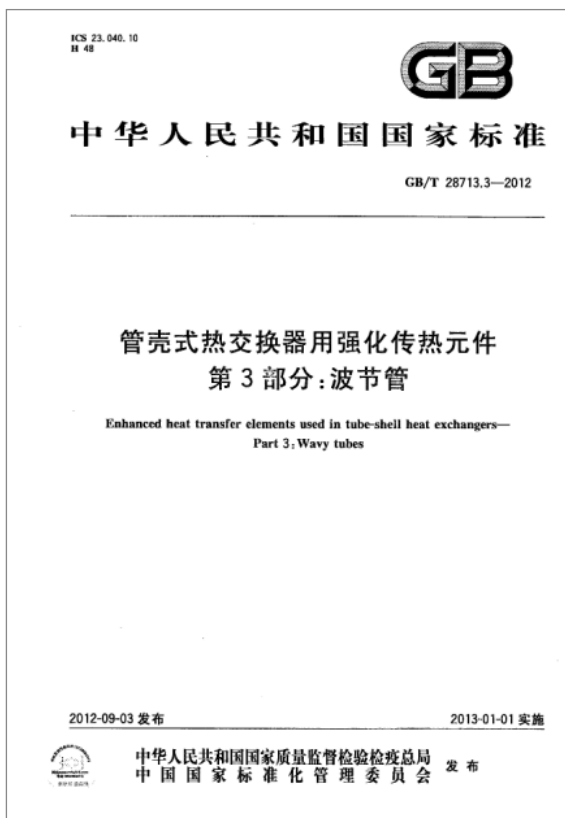
Enhanced heat transfer elements used in tube-shell heat exchangers. Part 1: Threaded tubes  
This section specifies the basic parameters and technical requirements of threaded tubes for tubular heat exchangers.



17. GB/T 28713.2—2012 管壳式热交换器用强化传热元件 第2部分：不锈钢波纹管

本部分规定了管壳式热交换器用奥氏体不锈钢波纹管的基本参数及技术要求。

Enhanced heat transfer elements used in tube-shell heat exchangers. Part 2: Stainless steel corrugated tubes  
This section specifies the basic parameters and technical requirements of austenitic stainless steel corrugated tubes for tubular heat exchangers.



18. GB/T 28713.3—2012 管壳式热交换器用强化传热元件 第3部分：波节管

本部分规定了管壳式热交换器用波节管的基本参数及技术要求。

Enhanced heat transfer elements used in tube-shell heat exchangers. Part 3: Wavy tubes  
This section specifies the basic parameters and technical requirements of tubular heat exchangers wavy tubes.



19. GB/T 29463.1-2012 管壳式热交换器用垫片 第1部分:金属包垫片

本部分规定了管壳式热交换器用金属包垫片的结构型式与尺寸。

Gaskets used in tube-shell heat exchangers. Part 1: Metallic jacketed gaskets  
This section specifies the structure style and size of metallic jacketed gaskets for tubular heat exchangers.



20. GB/T 29463.2-2012 管壳式热交换器用垫片 第2部分:缠绕式垫片

本部分规定了缠绕式垫片的结构型式与尺寸。

Gaskets used in tube-shell heat exchangers. Part 2: Spiral wound gasket  
This section specifies the structure style and size of spiral wound gasket for tubular heat exchangers.



21. GB/T 29463.3—2012 管壳式热交换器用垫片 第3部分：非金属软垫片

本部分规定了非金属软垫片的结构型式与尺寸。

Gaskets used in tube-shell heat exchangers. Part 3: Nonmetallic gaskets  
This section specifies the structure style and size of nonmetallic gasket for tubular heat exchangers.



22. GB/T 29464—2012 两相流喷射式热交换器

本标准规定了两相流喷射式热交换器（以下简称喷射器）的材料、设计、制造、检验、验收及安装使用等技术要求。

Steam-driven jet heat exchanger

This standard specifies the material, design, manufacture, testing and inspection, acceptance, installation and use of steam-driven jet heat exchanger (hereinafter referred to as ejector).



23. GB/T 29465—2012 浮头式热交换器用外头盖侧法兰

本标准规定了浮头式热交换器（含换热器和冷凝器）用外头盖侧法兰的结构型式与系列尺寸。

Shell flange-rear head end of floating heat exchangers

This standard specifies the structural type and series size of shell flange-rear head end of floating heat exchangers (including heat exchangers and condenser).



24. GB/T 29466—2012 板式热交换器机组

本标准规定了板式热交换器机组（以下简称机组）的设计、制造、试验方法、检验规则、运输、贮存及使用要求。本标准适用于供热、空调及生活热水等热交换系统中所使用的板式热交换器机组。其他系统的板式热交换器机组可参照使用。

Plate heat exchanger unit

This standard specifies the design, manufacture, testing method, inspection rules, transportation, storage and operation requirements of plate heat exchanger units (hereinafter referred to as units). This standard is applicable to plate heat exchanger units used in heat exchange systems such as heating, air conditioning and domestic hot water. Plate heat exchanger units of other systems can be used as reference.

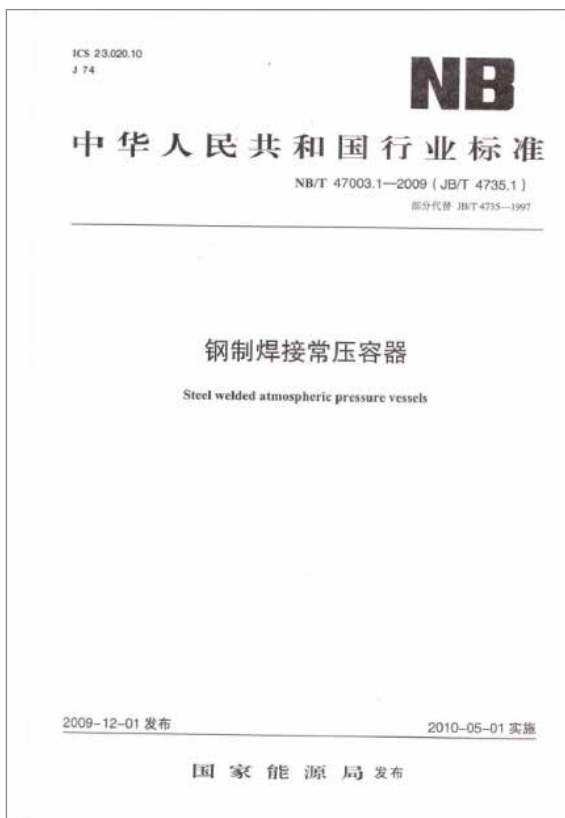


## 25.NB/T 47001 — 2009 (JB/T 4713—2009) 钢制液化石油气卧式储罐型式与基本参数

本标准规定了钢制液化石油气卧式储罐的型式与公称压力、公称容积、公称直径、筒体长度、筒体厚度、封头厚度、安装尺寸、管口名称、管口尺寸及卧罐质量等基本参数。本标准适用于储存液化石油气且无保温设施的卧罐。

Steel liquefied petroleum gas horizontal tanks type and data base

This standard specifies the basic parameters of horizontal steel LPG tanks, such as type and nominal pressure, nominal volume, nominal diameter, cylinder length, cylinder thickness, head thickness, installation size, nozzle name, nozzle size and horizontal tank quality. This standard is applicable to horizontal tanks without thermal insulation facilities for storing liquefied petroleum gas.



## 26.NB/T 47003.1 — 2009 (JB/T 4735.1—2009) 钢制焊接常压容器

本部分规定了钢制焊接常压容器的设计、制造、检验与验收的要求。

Steel welded atmospheric pressure vessels

This section specifies the requirements of design, manufacture, testing inspection and acceptance of steel welded atmospheric pressure vessels.





27.NB/T 47003.2 — 2009 (JB/T 4735.2—2009) 固体料仓  
本部分规定了固体料仓的设计、制造、检验与验收的要求。

Silos for solid materials

This section specifies the requirements of design, manufacture, inspection and acceptance of silos for solid materials.



28.NB/T 47004.1 — 2017 板式热交换器 第1部分：可拆卸板式热交换器

本部分规定了可拆卸板式热交换器（简称板式热交换器）的材料、设计、制造、检验与性能测定及能效评价要求。本部分适用于垫片式、半焊式可拆卸板式热交换器。

Plate heat exchangers. Part 1: Plate-and-frame heat exchangers

This section specifies the material, design, manufacture, inspection, performance measurement and energy efficiency evaluation requirements of plate-and-frame heat exchangers. This section is suitable for gasket type and semi-welded plate-and-frame heat exchangers.



29.NB/T 47005 — 2009 ( JB/T 4753—2009 ) 板式蒸发装置  
本标准适用于蒸发生产过程中使用的板式蒸发装置。

Plate evaporator device  
This standard is applicable to plate evaporator device used in evaporation production process.



30.NB/T 47006 — 2009 ( JB/T 4757—2009 ) 铝制板翅式热交换器

本标准规定了铝制板翅式热交换器的设计、制造、检验、验收、安装、使用及维护等要求。

Aluminum plate-fin heat exchanger  
This standard specifies the design, manufacture, decompression, acceptance, installation, use and maintenance of aluminum plate-fin heat exchangers.

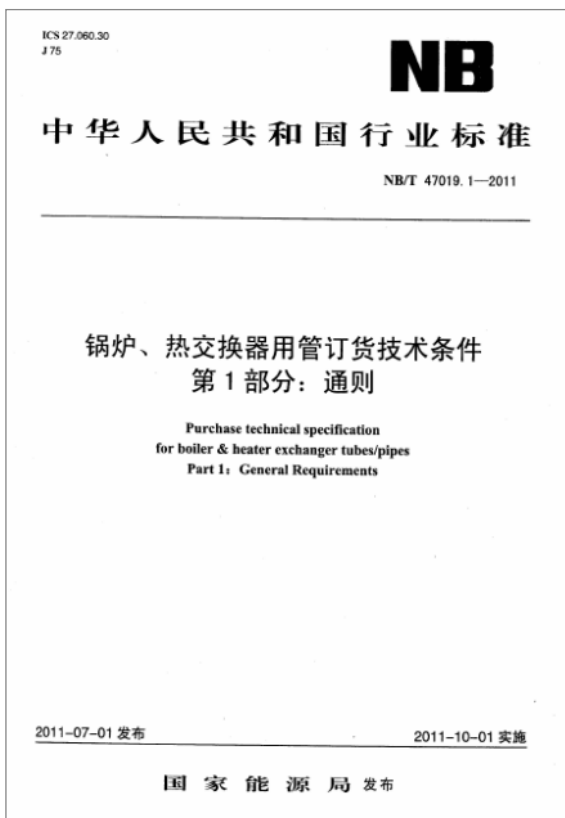


### 31. NB/T 47007 — 2018 空冷式热交换器

本标准规定了鼓风和引风空冷式热交换器（以下简称“空冷器”）设计、材料、制造、检验和验收要求以及其能效评价方法。

#### Air-cooled heat exchangers

This standard specifies the design, material, manufacture, inspection and acceptance requirements of blast and induced air-cooled heat exchangers (hereinafter referred to as "air coolers") and method of energy efficiency evaluation.



### 32. NB/T 47019.1 — 2011 锅炉、热交换器用管订货技术条件 第1部分：通则

2.1 本部分规定了管子的尺寸、外形、重量、技术要求、检验试验规则、质量证明书等订货技术要求，并给出了相关各方的职责、权力和义务。

2.2 本部分适用于锅炉、热交换器等承压设备用的碳素钢、合金钢、不锈钢、低温用钢钢管，以及有色金属管。

2.3 流体输送用管可参照使用本标准的要求。

#### Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 1: General Requirements

2.1 This section specifies the size, shape, weight, technical requirements, inspection and test rules, quality certificates and other ordering technical requirements of tubes/pipes, and gives the responsibilities, powers and obligations of all parties concerned.

2.2 This part is suitable for carbon steel, alloy steel, stainless steel, low temperature steel pipe and non-ferrous metal pipe for pressure equipment of boilers and heat exchangers.

2.3 Pipes for fluid delivery may refer to the requirements of this standard.



### 33.NB/T 47019.2 — 2011 锅炉、热交换器用管订货技术条件 第2部分：规定室温性能的非合金钢和合金钢

本部分规定了满足室温性能要求的、由非合金和合金钢制造的、用于低压、中压锅炉和热交换器等承压设备的无缝钢管的订货技术要求。

Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 2: Non-alloy and alloy steel with room temperature properties

This section specifies the ordering technical requirements of seamless steel tubes/pipes for pressure equipment that could meet room temperature performance requirements, be made of non-alloy and alloy steels and used for low and medium pressure boilers and heat exchangers, etc.



### 34.NB/T 47019.4 — 2011 锅炉、热交换器用管订货技术条件 第4部分：低温用低合金钢

本部分规定了低温用低合金钢钢管的分类和标记、技术要求、试验方法、检验规则、包装、标志和质量证明书的要求。

Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 4: Low alloy steel for low-temperature service

This section specifies the classification and marking, technical requirements, experimental methods, inspection rules, packaging, marking and quality certificate requirements of low-alloy steel pipes for cryogenic use.



35.NB/T 47019.5 — 2011 锅炉、热交换器用管订货技术条件  
第 5 部分：不锈钢

本部分规定了不锈钢无缝和焊接钢管的分类和标记、技术要求、试验方法、检验规则、包装、标志和质量证明书的要求。本部分适用于锅炉和热交换器用不锈钢无缝和焊接钢管。

Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 5: Stainless steel

This section specifies the classification and marking, technical requirements, experimental methods, inspection rules, packaging, marking and quality certificate requirements of stainless steel seamless and welded steel pipes. This section is suitable for seamless stainless steel and welded steel pipes for boilers and heat exchangers.



36.NB/T 47019.6 — 2011 锅炉、热交换器用管订货技术条件  
第 6 部分：铁素体 / 奥氏体型双相不锈钢

2.1 本部分规定了热交换器用铁素体 / 奥氏体双相不锈钢无缝钢管的牌号、技术要求、试验方法、检验规则、包装、标志及质量证明书的要求。

2.2 本部分适用于耐一般腐蚀和抗应力腐蚀的冷拔（轧）铁素体 / 奥氏体双相不锈钢无缝钢管。

Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 6: Ferrite/austenite duplex steel

2.1 This section specifies the grades, technical requirements, experimental methods, inspection rules, packaging, marking and quality certificate requirements of ferrite/austenitic duplex steel seamless steel tubes for heat exchangers.

2.2 This section is suitable for cold-drawn (rolled) ferrite/austenite duplex steel seamless steel tubes with general corrosion resistance and stress corrosion resistance.



### 37.NB/T 47019.7 — 2011 锅炉、热交换器用管订货技术条件 第7部分：有色金属 铜和铜合金

本部分规定了热交换器用铜及铜合金管的尺寸和外形、技术要求、试验方法、检验规则、包装、运输、储存、标志和质量证明书的要求。本部分适用于铜及铜合金无缝圆形管子。

Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 7: Copper and copper alloy/tube

This section specifies the size and shape, technical requirements, test methods, inspection rules, packaging, transportation, storage, marking and quality certificate requirements of copper and copper alloy tubes for heat exchangers. This section is suitable for copper and copper alloy seamless circular tubes.

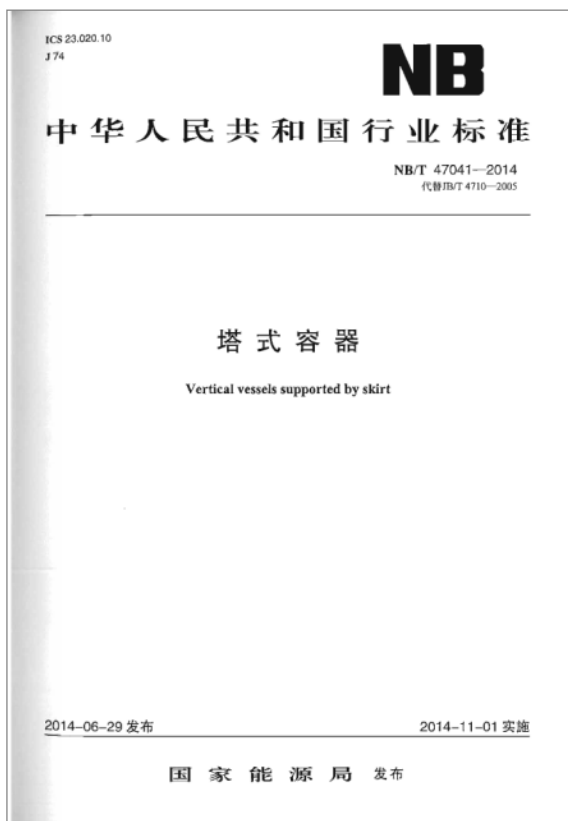


### 38.NB/T 47019.8 — 2011 锅炉、热交换器用管订货技术条件 第8部分：有色金属 钛和钛合金

本部分规定了钛和钛合金无缝管、焊接和焊接—轧制管的尺寸和外形、技术要求、试验方法、检验规则、包装、运输、储存、标志和质量证明书的要求。

Purchase technical specification for boiler & heater exchanger tubes/pipes. Part 8: Titanium and titanium/alloy

This section specifies the size and shape, technical requirements, test methods, inspection rules, packaging, transportation, storage, marking and quality certificate requirements of titanium and titanium alloy seamless tubes, welded and welded-rolled tubes.



39. NB/T 47041 — 2014 (JB/T 4710—2014) 塔式容器

本标准规定了金属制塔式容器的设计、制造、检验与验收等要求。

Vertical vessels supported by skirt

This standard specifies the requirements of the design, manufacture, inspection and acceptance of metal vertical vessels supported by skirt.



40. NB/T 47042 — 2014 卧式容器

本标准规定了金属制卧式容器的设计、制造、检验和验收等要求。

Horizontal vessels on saddle supports

This standard specifies the requirements of design, manufacture, inspection and acceptance of metal horizontal vessels on saddle supports.





41. NB/T 47045 — 2015 钎焊板式热交换器

本标准规定了钎焊板式热交换器的设计、材料、制造、检验、验收、标志和包装等技术要求。

Brazed plate heat exchangers

This standard specifies the technical requirements for the design, material, manufacture, inspection, acceptance, marking and packaging of brazed plate heat exchangers.

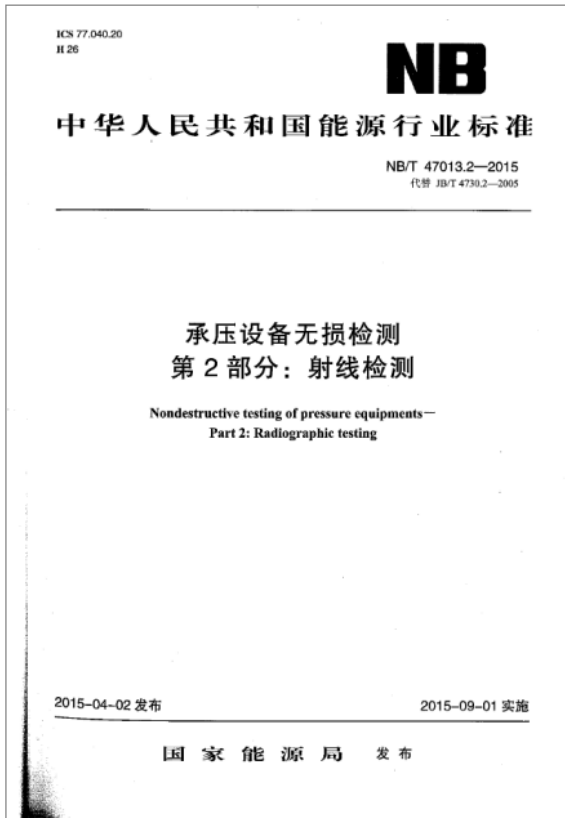


42. NB/T 47048 — 2015 螺旋板式热交换器

本标准规定了螺旋板式热交换器的材料、设计、制造、检验和验收要求。

Spiral plate heat exchanger

This standard specifies the material, design, manufacture, inspection and acceptance requirements of spiral plate heat exchangers.



43. NB/T 47013.2—2015 承压设备无损检测 第2部分：射线检测

本部分规定了承压设备金属熔化焊焊接接头 X 射线和 γ 射线检测技术和质量分级要求。

Nondestructive testing of pressure equipments-Part2: Radiographic testing  
This section specifies X-ray and γ-ray inspection technology and quality classification requirements for metal melt welded joints of pressure equipment.



44. JB/T 1118—2001 F1 型浮阀

本标准规定了 F1 型浮阀的品种规格、技术要求和标志、包装。  
本标准适用于化学、石油工业中的浮阀塔设备。

F1-valve  
This standard specifies the variety specifications, technical requirements, marks and packaging of F1 -valve. This standard is applicable to floating valve tower equipment in chemical and petroleum industries.



#### 45. JB/T 1119—1999 卡子

本标准规定了卡子的品种规格、技术要求和标志、包装。本标准适用于化学、石油工业中板式塔设备中塔盘板与支持圈、降液板与支持板的连接所用的卡子。

##### Holding-down clip

This standard specifies the variety specifications, technical requirements, marks and packaging of holding-down clips. This standard is applicable to clips used in connection of tray plate and support ring, descending plate and support plate in plate tower equipment of chemical and petroleum industries.

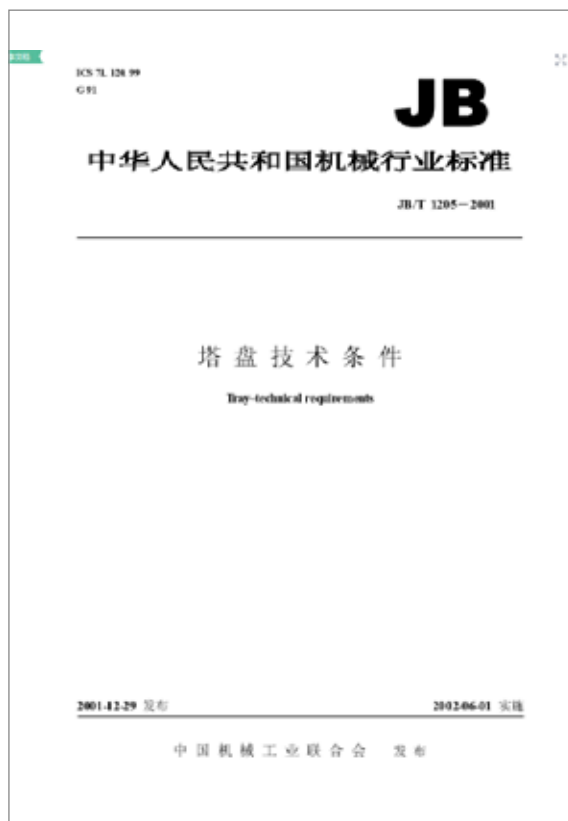


#### 46. JB/T 1120—1999 双面可拆连接件

本标准规定了双面可拆连接件的品种规格、技术要求和标志、包装。本标准适用于化学、石油工业中板式塔设备的塔盘板与塔盘板之间的连接。

##### Double-sided dismantlable fastenings

This standard specifies the varieties, specifications, technical requirements, marks and packaging of double-sided dismantlable fastenings. This standard is applicable to the connection between tray plates and tray plates of plate tower equipment in chemical and petroleum industries.



#### 47. JB/T 1205—2001 塔盘技术条件

本标准适用于石油、化学工业用塔器的钢制筛板塔盘、F1 型浮阀塔盘、固定舌形塔盘、浮动舌形塔盘和圆泡帽塔盘。

##### Tray-technical requirements

This standard is applicable to steel sieve tray, F1 valve tray, fixed tongue tray, floating tongue tray and bubble cap tray of tower used in petroleum and chemical industry.

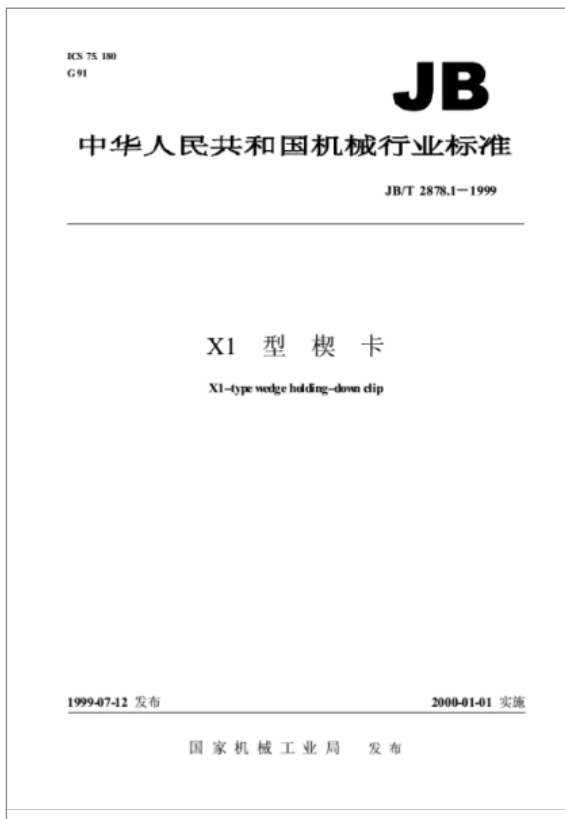


#### 48. JB/T 1212—1999 圆泡帽

本标准规定了圆泡帽的型式、尺寸和材料及技术要求。本标准适用于化学、石油工业用塔器的圆泡帽。

##### Round bubble cap

This standard specifies the type, size, material and technical requirements of the round bubble cap. This standard is applicable to the round bubble caps of towers used in chemical and petroleum industries.



## 49. JB/T 2878.1—1999 X1 型楔卡

本标准规定了 X1 型楔卡的品种规格、技术要求和标志、包装。  
本标准适用于化学、石油工业中不需做充水试漏的浮阀、浮舌、筛板等板式塔设备中塔盘板与支持圈，降液板与支持板的连接所用楔卡。

## X1-type wedge holding-down clip

This standard specifies the specifications, technical requirements, signs and packaging of X1-type wedge holding-down clip. This standard is applicable to wedge holding-down clips which used in connection of tray plate and support ring, descending plate and support plate in floating valves, tongues and sieve plates without water filling test plate tower equipment of chemical and petroleum industries.

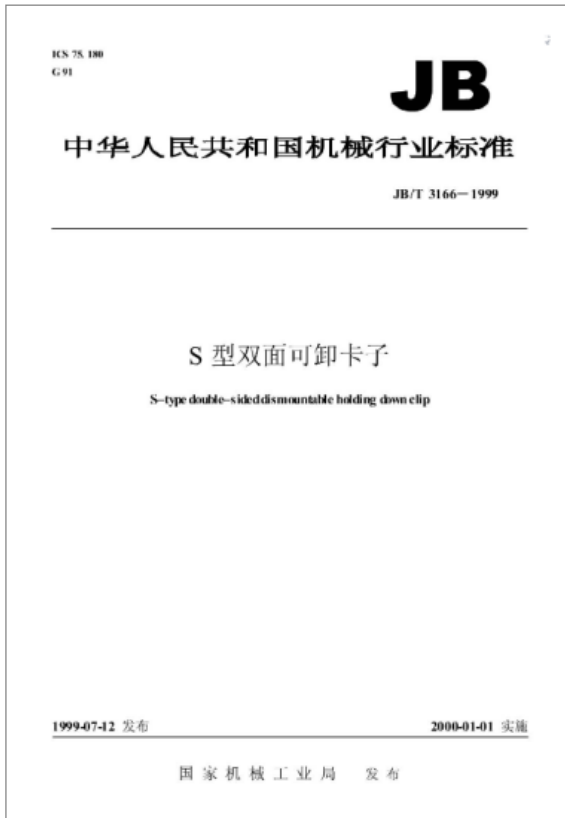


## 50. JB/T 2878.2—1999 X2 型楔卡

本标准规定了 X2 型楔卡的品种规格、技术要求和标志、包装。  
本标准适用于化学、石油工业中不需做充水试漏的浮阀、浮舌、筛板等板式塔设备中塔盘板之间、降液板之间、塔盘板与支持梁的连接所用楔卡。

## X2-type wedge holding-down clip

This standard specifies the specifications, technical requirements, signs and packaging of X2-type wedge holding-down clip. This standard is applicable to wedge holding-down clips which used in connection of tray plate and support ring, descending plate and support plate in floating valves, tongues and sieve plates without water filling test plate tower equipment of chemical and petroleum industries.

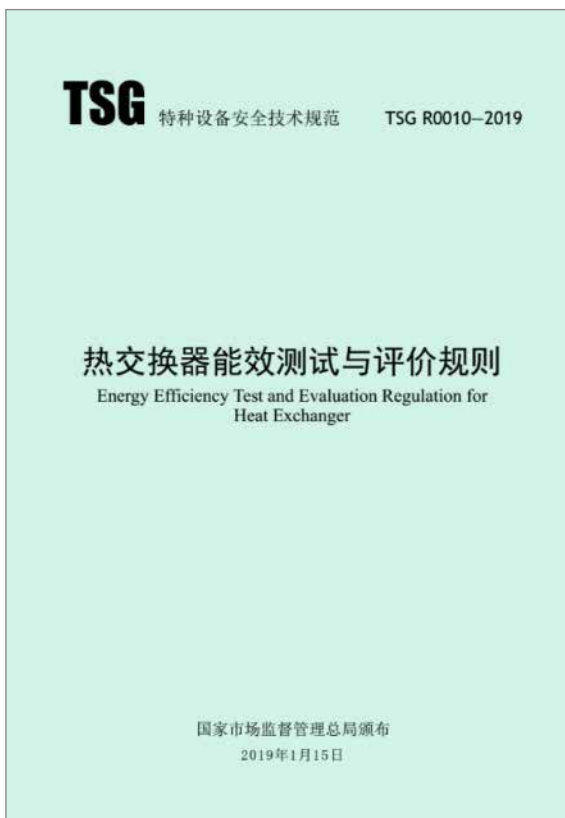


#### 51. JB/T 3166—1999 S 型双面可卸卡子

本标准规定了 S 型双面可卸卡子的品种规格、技术要求和标志、包装。本标准适用于化学、石油工业中板式塔设备的塔盘板、内部人孔通道板与支持圈或梁（主梁、支梁）的连接所用卡子。

S-type double-sided dismantlable holding down clip

This standard specifies the varieties, specifications, technical requirements, marks and packaging of S-type double-sided dismantlable holding down clips. This standard is applicable to the clips used in the connection of tray plates, inner manhole passage plates and supporting rings or beams (main girders, supporting beams) of medium plate tower equipment in chemical and petroleum industries.



#### 52. TSG R0010—2019 热交换器能效测试与评价规则

本规则适用于在液—液工况状态下的可拆卸板式热交换器、半焊式板式热交换器、钎焊板式热交换器产品的能效测试与评价，对其他类型热交换器的能效测试与评价方法将在研究确定后予以补充。

Energy Efficiency Test and Evaluation Regulation for Heat Exchanger

This standard is applicable to the energy efficiency test and evaluation of the products of removable plate heat exchanger, semi-welded plate heat exchanger and brazed plate heat exchanger under liquid-liquid condition. The energy efficiency test and evaluation methods for other types of heat exchangers will be supplemented after the study is confirmed.

# 中国联合工程有限公司

## China United Engineering Corporation Limited

**公司名称：中国联合工程有限公司**  
**Company Name: China United Engineering Corporation Limited**

中国联合工程有限公司是以原机械工业第二设计研究院为核心，联合多家国家甲级勘察设计单位组建的大型科技型工程公司，隶属于中央大型企业集团、世界 500 强企业——中国机械工业集团有限公司，总部设在杭州。

中国联合现有员工 5200 多人，专业技术人员占 95% 以上。曾在我公司工作过的中国工程院、中国科学院院士 7 人，全国工程勘察设计大师 7 人，现在职中国工程院院士 1 人、全国工程勘察设计大师 1 人、“新世纪百千万人才工程”国家级人选 1 人、享受国务院政府特殊津贴专家 92 人、具有高级技术职称的专家 1635 人（含正高级工程师 156 名），具有各类国家一级注册执业资格工程技术人员 1900 人次。公司具有工程设计综合甲级资质、工程造价甲级资质、建筑工程施工总承包壹级资质、工程监理综合资质；具有城乡规划编制甲级资质和多个专业的工程咨询甲级资信；具有特种设备设计许可；具有直接对外经营权。

作为我国最早组建的国家大型综合性设计单位之一，经过近七十年的纵横驰骋和市场竞争的风雨磨砺，公司服务领域早已从单一的机械行业扩展到建筑、电力、规划、市政等二十多个行业。服务方式也从工程设计向前后延伸到工程咨询、勘察、规划、建设监理、项目管理、项目代建、建筑施工、采购、试车和工程总承包等。公司为适应我国勘察设计业改革与发展新形势，不断调整业务结构，在继续做精做强设计咨询业务的同时，积极开拓工程总承包、项目管理和项目代建业务，大力提升 EPC 总承包能力，积极参与国际竞争。

多年来，公司遵循“与顾客共同创造价值”的经营理念 and “设计精湛，构筑经典，超越期望，追求卓越，生态和谐，节能降耗，绿色环保，创新发展；安全第一，预防为主，以人为本，综合治理”的管理方针，完成了 20000 多项工程；主编、参编国家、地方和行业标准、规范 100 余项；获得国家科技进步奖 28 项（一等奖 2 项）、国家级各类工程技术奖 100 多项、各类省部级奖 1000 多项。

公司连年被授予“重合同守信用”企业称号，获得

China United Engineering Corporation Limited is a large-scale scientific and technology company, its core division is the Second Design & Research Institute of the former Ministry of Machinery Industry. The corporation comprises many national Class A investigation and designing divisions, including the Third Design & Research Institute of the United Machinery Industry, the Eleventh Design & Research Institute of the United Machinery Industry (China United Northwest Engineering Design & Research Institute), China Jikan Geotechnical Institute, etc. The corporation belongs to a large state-owned industrial group reporting directly to the Central Government, and also a Top 500 enterprises-the China National Machinery Industry Corporation, which headquartered in Hangzhou.

CUC has over 5200 employees now, among which 95% are professional technical staffs. There once had been seven academicians from the Chinese Academy of Engineering and the Chinese Academy of Science and seven National Investigation and Designing masters who had worked in CUC. Staffs in service now including one academician from the Chinese Academy of Engineering, one National Investigation and Designing master, one specialist of the National "New Century Project of Thousands of Talents", 92 specialists enjoying the special government subsidy from the State Council, 1635 technical staffs with senior technical titles (including 156 professorate senior engineers), 1900 technical staffs own first-grade national registered engineering certificates of various different majors. CUC owns comprehensive certificates (Grade-A) of qualification for Engineering Design, Engineering Cost Consulting, General Contract Engineering Projects of Construction, comprehensive certificate of qualification for Project Supervision, comprehensive certificates (Grade-A) of qualification for Urban Planning, Multi-Industries Engineering Consulting, has license of Special Equipment Design, owns direct operation right of running and developing business.

As one of the earliest large state-owned comprehensive design enterprises, the business scope of CUC has been developed into over twenty industries of construction and power from the single mechanical industry through over 50 years of development and progress in difficulties. The service style also is expanded from engineering design to engineering consulting, investigation, planning, construction supervision, project management, building construction, procurement, trial run and general contract of project, etc. In recent years, to face the challenge after joining the WTO and fit for the new situation of the reform and development of the investigation and designing industry in China, the corporation regulates its business structure continuously. In addition to promote its consulting business, the corporation focuses



AAA 企业信用评定等级。在建设部对全国一万多家勘察设计单位综合实力和营业收入排名中，连年进入百强榜；在美国《工程新闻记录杂志》ENR 对中国工程设计企业 60 强的统计排名中，连年位于榜上前列。

公司将凭借强大的综合优势，竭诚为国内外业主提供各类工程建设全方位，全过程服务。

on the development of general contract of the project and project management, improves its EPC capability greatly and takes active part in the international competition.

For many years, CUC follows the operation conception of "Create value for the client" and the quality policy of "Design consummation, construct classicality, exceed expectation and pursue excellence", completes over 20,000 projects; works out and take part in the establishment of over 100 national, local and industrial standards and specifications; obtains 28 awards of scientific & technological progress of China (two 1st rank awards), and over 100 awards of excellent engineering investigation and designing of China and over 1000 provincial awards. CUC is awarded with "contract abiding & trustworthy enterprise" in successive years, and obtains the enterprise credit assessment with grade of AAA; the corporation is listed in the top one hundred enterprises of over 10,000 investigation and designing enterprises selected by the Ministry of Construction based on their comprehensive strength and business income in successive years; and the corporation is listed in the top 60 engineering designing enterprises concluded by the American Magazine ENR in successive years.

CUC will depend on the comprehensive advantages, providing the owners with all kinds of construction projects at home and abroad all-round services to the entire process.

## 联系人及联系方式

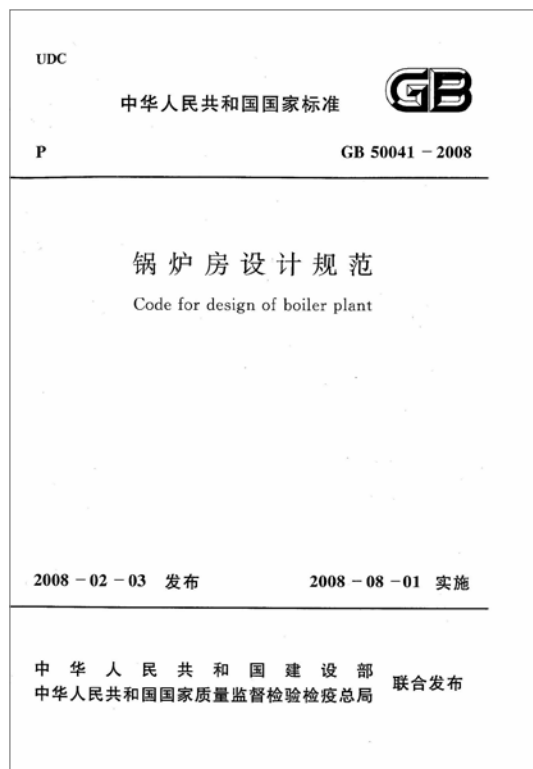
### Contact Person and Information

联系人：钟震  
联系电话：0571-88151964

Contact: Zhong Zhen  
Phone:0571-88151964

## 标准 Standards

### 主持制定或参与的标准



#### 1. 锅炉房设计规范 GB50041—2008

本规范适用于下列范围内的工业、民用、区域锅炉房及其室外热力管道设计：1) 以水为介质的蒸汽锅炉锅炉房，其单台锅炉额定蒸发量为 1 ~ 75t/h、额定出口蒸汽压力为 0.10 ~ 3.82MPa (表压)、额定出口蒸汽温度小于等于 450℃。2) 热水锅炉锅炉房，其单台锅炉额定热功率为 0.7 ~ 70MW、额定出口水压为 0.10 ~ 2.50MPa (表压)、额定出口水温小于等于 180℃。3) 符合本条第 1、2 款参数的室外蒸汽管道、凝结水管道和闭式循环热水系统。

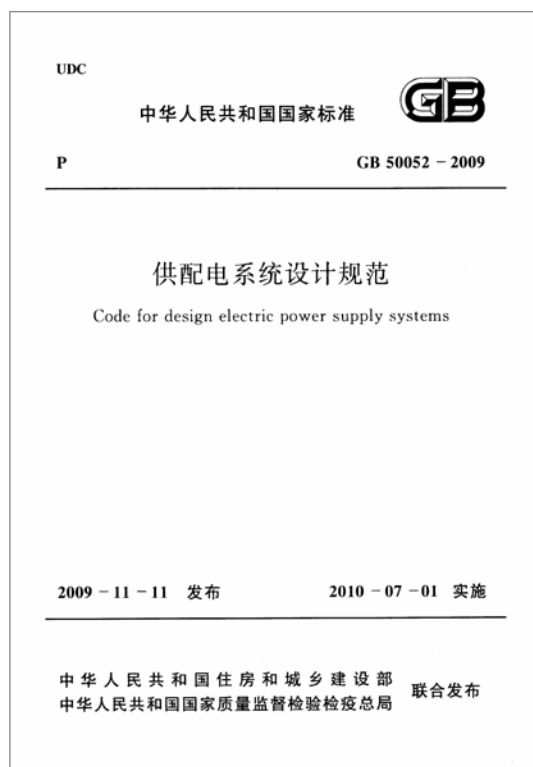
本规范不适用于余热锅炉、垃圾焚烧锅炉和其它特殊类型锅炉的锅炉房和城市热力网设计。

#### 1. Code for design of boiler plant

This code is applicable to industrial and civil boiler plants and their outdoor thermal piping design in the following area:

1) For Water-medium steam boiler plant, every single boiler rated evaporation capacity of 1-75 t/h, rated outlet steam pressure of 0.10-3.82 MPa (Gauge pressure), rated outlet steam temperature no more than 450℃; 2) For hot water boiler plant, every single boiler rated thermal power of 0.7-70MW, rated outlet water pressure is 0.10-2.50MPa (Gauge pressure), and rated outlet water temperature no more than 180℃; 3) Those outdoor steam piping, condensate piping and close-loop hot water systems which complied with the parameters from article 1 and article 2.

This code is inapplicable for the design of waste heat boiler plants, municipal solid waste boiler plants and other special type boiler plants, as well as district heating network.



#### 2. 供配电系统设计规范 GB50052—2009

本规范适用于用户端供电系统新建、扩建和改建工程的设计。

#### 2. Code for design electric power supply systems

This code is applicable to the design of client electric power supply system in new construction, expansion and reconstruction construction projects.



### 3. 建筑地面设计规范 GB50037—2013

本规范适用于建筑中的底层地面和楼层地面以及散水、明沟、踏步、台阶和坡道等的设计。

#### 3. Code for design of building ground

This code is applicable to the design of the ground floor, building floor, water plate, open drain, step, platform, ramp, etc. in the building.

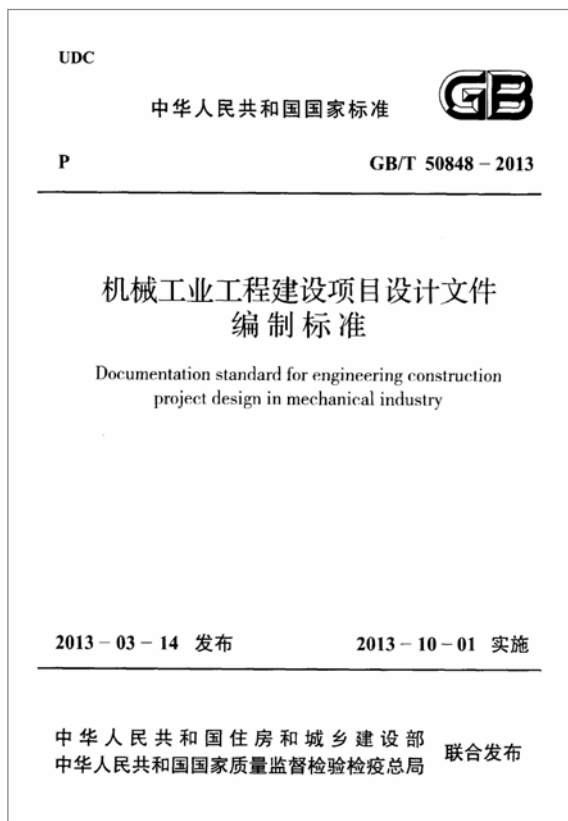


### 4. 厂房建筑模数协调标准 GB/T50006—2010

本标准适用于：(1) 设计装配式或部分装配式的钢筋混凝土结构、钢结构及钢筋混凝土与钢的混合结构厂房；(2) 厂房建筑设计中相关专业之间的尺寸协调；(3) 编制厂房建筑构配件通用设计图集。

#### 4. Standard for modular coordination of industrial buildings

This standard is applicable to the following area: (1) Design fabricated or partial-fabricated reinforced concrete structure, steel structure or composite structure plant building of reinforced concrete and steel; (2) Size coordination between related professions of plant building design; (3) Compile unified standard for plant building components' design drawing.



#### 5. 机械工业工程建设项目设计文件编制标准 GB/T50848-2013

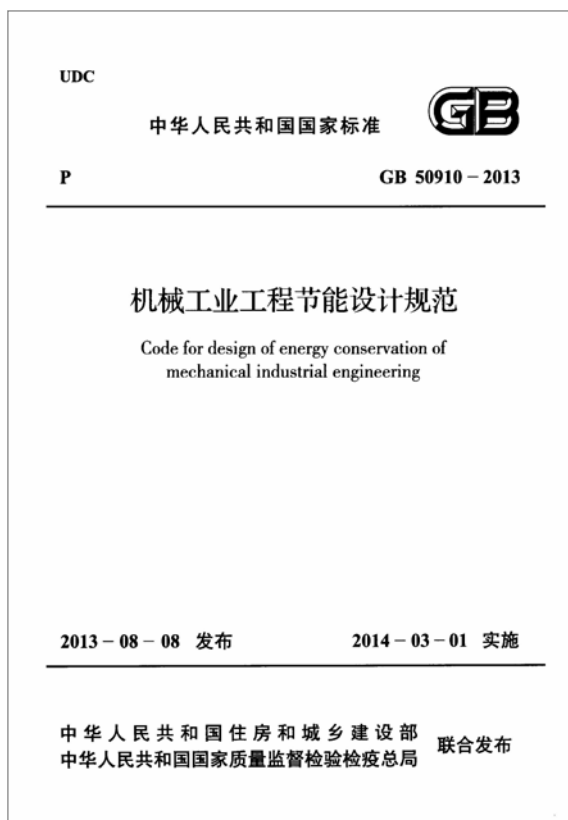
本标准的制定是为了加强机械工业工程建设项目设计文件编制工作的管理，规范设计文件的编制深度，确保各阶段设计文件的编制质量和完整性。

本标准适用于机械工业新建、改建、扩建工程项目的设计文件编制。

5. Documentation standard for engineering construction project design in mechanical industry

This standard is formulated to strengthen the management of construction project design establishing process in mechanical industry, to standardize the compilation depth and to ensure the quality and integrity at all stages.

This standard is applicable to new construction, reconstruction and expansion projects in machinery industry.



#### 6. 机械工业工程节能设计规范 GB50910-2013

本规范的制定是为了贯彻执行《中华人民共和国节约能源法》，使机械工业建设工程项目的节能设计，做到合理利用能源和节约能源，并与安全生产、经济效益和环境保护相协调。

本规范适用于机械工业新建、改建、扩建和技术改造的工程项目。

6. Code for design of energy conservation of mechanical industrial engineering

This code is formulated to implement Law of People's Republic of China on Conserving Energy, that the energy conservation design to be rational and economized, also coordination with safe production, economic benefits and environmental protection.

This code is applicable to new construction, reconstruction and expansion projects in machinery industry.



#### 7. 机械工业工程设计基本术语标准 GB/T51218-2017

本标准的制定是为了完善机械工业工程建设项目设计文件编制管理工作，使机械工业工程设计用语规范、科学、统一。

本标准适用于机械工业工程建设项目的设计文件编制，也适用机械工业工程项目的前期咨询、工程施工、建设监理和教学工作。

#### 7. Standard for basic terminology of engineering design of machinery industry

This standard is formulated to improve the management of construction project design establishing process in mechanical industry, as well as making the terms of engineering design standardized, scientific and unified.

This standard is applicable to establish the design documents, as well as pre-consultation, engineering construction, construction supervision and teaching of engineering construction project design in mechanical industry.




#### 8. 机械工厂年时基数设计标准 GB/T51266-2017

本标准的制定是为了在机械工厂设计中合理地确定工艺设备和工人的数量。

#### 8. Standard of annual basic working hour for design of machinery factory

This standard is formulated to determine the number of processing equipment and workers rationally in machinery factory design.

This standard is applicable to new construction, reconstruction and expansion projects in machinery factories.

UDC	
中华人民共和国国家标准	
P	GB 50136 - 2011
<b>电镀废水治理设计规范</b> Code for design of electroplating wastewater processing	
2011 - 07 - 26 发布	2012 - 06 - 01 实施
中华人民共和国住房和城乡建设部 联合发布 中华人民共和国国家质量监督检验检疫总局	

#### 9. 电镀废水治理设计规范 GB50136—2011

本规范的制定是为了贯彻执行国家有关环境保护的法律、法规，使电镀废水治理工程设计达到防治污染、保护和改善环境的要求，并做到技术先进、节约能源、经济合理、安全适用。本规范适用于新建、扩建和改建的电镀废水治理工程的设计。

#### 9. Code for design of electroplating wastewater processing

This code is formulated to implement the laws and regulations related to environmental protection of the state, that the design of electroplating wastewater treatment project meets the requirements of pollution prevention and environmental improvement, as well as achieving advanced technology, energy saving, economic and reasonable, safe and applicable.

This code is applicable to the design of electroplating wastewater treatment projects of new construction, expansion and reconstruction.

UDC	
中华人民共和国国家标准	
P	GB 50681 - 2011
<b>机械工业厂房建筑设计规范</b> Code for design of machinery building architecture	
2011 - 05 - 12 发布	2012 - 05 - 01 实施
中华人民共和国住房和城乡建设部 联合发布 中华人民共和国国家质量监督检验检疫总局	

#### 10. 机械工业厂房建筑设计规范 GB50681—2011

本规范适用于下列范围：1) 新建、扩建、改建的机械工业厂房及其附属建筑的建筑设计；2) 机械工业工厂中电离辐射室的建筑设计；3) 机械工业工厂中电磁屏蔽室，屏蔽频率为0.15MHz~30MHz 利用建筑物增设屏蔽层的建筑设计。

#### 10. Code for design of machinery building architecture

This code is applicable to the following area: 1) architectural design of new, expanded, and rebuilt mechanical industrial plants and their ancillary buildings; 2) architectural design of ionizing radiation chambers in machinery industrial plants; 3) machinery industrial plates maintains the electromagnetic shielding room, shielding frequency from 0.15 MHz to 30 MHz and with additional shielding layer.

ICS 27.040  
K 56

## 中华人民共和国国家标准

GB/T 14099.5—2010/ISO 3977-5:2001

燃气轮机 采购  
第5部分：在石油和天然气工业中的应用Gas turbines—Procurement—  
Part 5: Applications for petroleum and natural gas industries  
(ISO 3977-5:2001, IDT)

2010-11-10 发布

2011-03-01 实施

中华人民共和国国家质量监督检验检疫总局 发布  
中国国家标准化管理委员会

11. 燃气轮机 采购 第5部分：在石油和天然气工业中的应用  
GB/T 14099.5—2010

本标准规定了用于石油和天然气工业中的钻井、生产、精炼和管道输送的快装式燃气轮机的设计、材料、制造、检查、试验和运输准备等要求并提出了建议。

本标准适用于采购方向成套商采购燃气轮机和燃气轮机系统及其辅助设备，包括用于联合循环系统的燃气轮机。

本标准不涉及设备安装时所需遵守的地方或国家的立法规定。

11. Gas turbines-procurement-Part 5: applications for petroleum and natural gas industries

This standard is applicable to the requirements in design, material, manufacture, inspection, test and transportation preparation of packaged gas turbine unit which used in drilling, production, refining and pipeline transportation in oil and natural gas industry, as well as further suggestions.

This standard is applicable for purchasing gas turbines, gas turbine systems and their auxiliary equipment, including gas turbines for combined cycle systems.

This standard does not involve local or national legislative provisions that related during equipment installation.

ICS 27.040  
K 56

## 中华人民共和国国家标准

GB/T 13673—2010  
代替 GB/T 13673—1992航空派生型燃气轮机  
辅助设备通用技术要求General requirements for aero-derivative  
gas turbines auxiliary equipment

2010-11-10 发布

2011-03-01 实施

中华人民共和国国家质量监督检验检疫总局 发布  
中国国家标准化管理委员会

12. 航空派生型燃气轮机辅助设备通用技术要求 GB/T 13673—2010

本标准规定了航空派生型燃气轮机（以下简称燃气轮机）辅助系统的设计要求以及在不同工作状态下构成系统所需的部件，是采购方、成套商双方进行技术协商的依据。

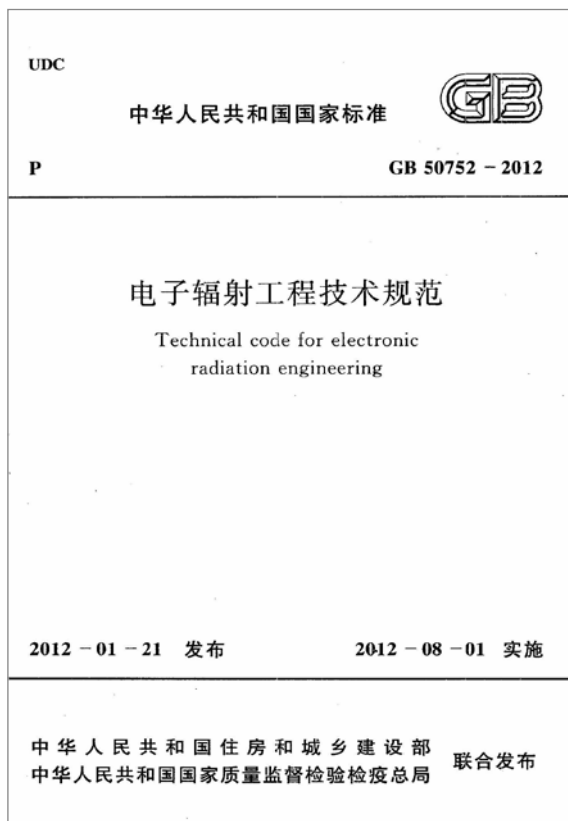
本标准适用于发电、舰船和机械驱动用的燃气轮机。

12. General requirements for aero-derivative gas turbines auxiliary equipment

This standard specifies the design requirements of aero-derivative gas turbines (hereinafter referred to as gas turbines) auxiliary system and the components required under different working conditions. It is the basis for technical consultation between the purchaser and the complete set supplier.

This standard is applicable to gas turbines for power generation, ships and mechanical drives.





### 13. 电子辐射工程技术规范 GB50752-2012

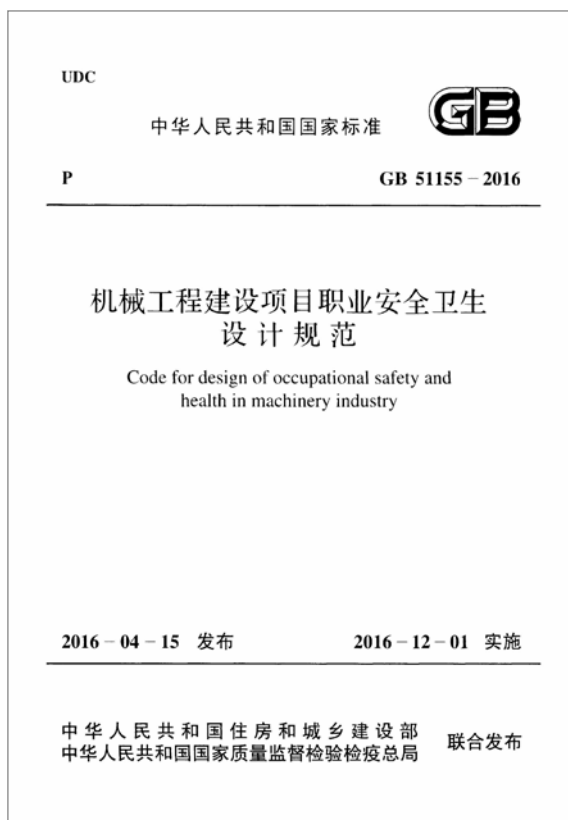
本规范适用于 0.15MeV ~ 100MeV 新建、改建和扩建的电子辐射工程的规划、设计、施工和验收。

本规范面向电子辐射工程规划人员、设计人员、施工人员、验收人员，高等院校师生。

#### 13. Technical code for electronic radiation engineering

This code is applicable to the planning, design, construction and acceptance of new construction, reconstruction and expansion for electronic radiation projects from 0.15MeV to 100MeV.

This code is applicable to planners, designers, constructors and inspectors of electronic radiation projects, as well as teachers and students in universities.



### 14. 机械工程项目职业安全卫生设计规范 GB51155-2016

本规范适用于新建、改建和扩建机械工程建设项目的职业安全卫生设计。

机械工程项目职业安全卫生设计，应符合下列要求：1) 应采用新技术、新工艺、新材料和新设备；2) 对于生产过程中存在的危险和危害因素，应采取消除、预防、减弱、隔离和防护等有效措施；3) 在高压、高温、易燃易爆和毒害严重的生产场所，应设置预警、报警或监控装置；4) 有高压、高温、高速、高电压、高噪声或深冷等试验台和装置的各类试验站，应配置各种信号、报警装置、警示标识和安全防护设施；5) 对操作人员误操作而可能造成危险的启停设备，应与相关启闭机构设置联锁。

#### 14. Code for design of occupational safety and health in machinery industry

This code is applicable to the occupational safety and health of new construction, reconstruction and expansion projects in mechanical engineering construction projects.

The occupational safety and health design of mechanical engineering construction projects shall meet the following requirements: 1) New technologies, new processes, new materials and new equipment shall be adopted; 2) Effective measures shall be taken to prevent, reduce, insulate and eliminate the dangerous and hazards during production; 3) Early warning signals, alarms or monitors shall be equipped in the production site with high-pressure equipment, high-temperature equipment, inflammable, explosive and toxic materials; 4) Signals, alarms, warning signs and safety protection facilities shall be equipped in test stations and benches which under high-pressure, high-temperature, high-speed, high-voltage, high-noise or cryogenic; 5) Interlocks shall be set with the related switch mechanism for those equipment which may cause dangerous at start or stop due to the maloperation by wrong operation procedures or man-made mistakes.



15. 承压设备焊后热处理规程 GB/T30583—2014

本标准规定了钢制承压设备焊后热处理通用性基本技术要求。  
本标准适用于锅炉、压力容器（不含气瓶）的焊后热处理。

15. Specification for post weld heat treatment of pressure equipment

This standard specifies the general technical requirements of post weld heat treatment for steel pressure equipment.

This standard is applicable to the post weld heat treatment for boiler and pressure vessels (excluding gas cylinders).



16. 热电联产系统 用于规划、评估和采购的技术说明 GB/T32797—2016

本标准对同时提供电、热和 / 或冷的热电联产系统的规划、评估和采购进行了技术说明。

本标准适用于项目评估中研究内容的确定、热电联产系统评估和热电联产系统采购的主要信息和工作。

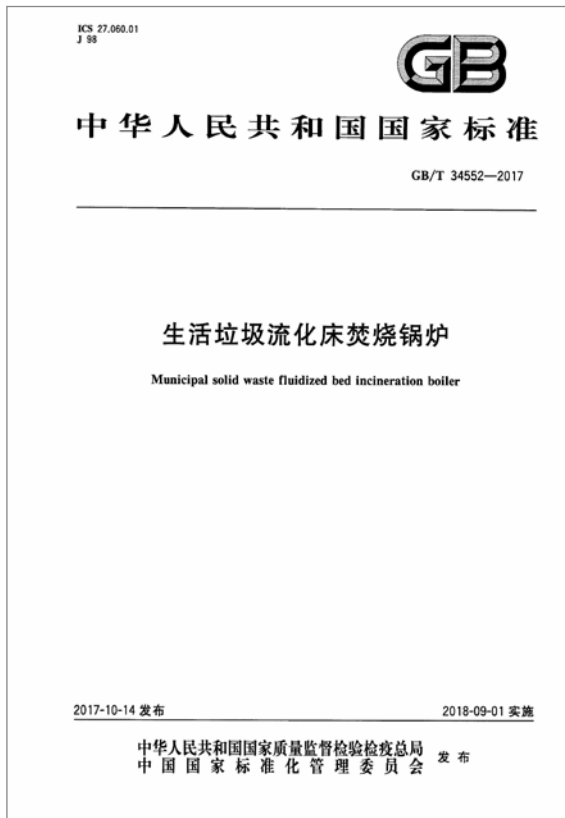
本标准也规定了热电联产系统规划过程中必要的检查项目，提供了适于实现各项目热电联产系统合理配置的程序，并包含了关键开发步骤的详细流程图。

16. Cogeneration systems-Technical declarations for planning, evaluation and procurement

This standard provides technical instructions for planning, evaluation and procurement of cogeneration systems which supply electricity, heating and/or cooling simultaneously.

This standard is applicable to the determination of research content, cogeneration system evaluation and procurement during project evaluation.

This standard also specifies the necessary inspection items during cogeneration system planning, provides the procedures that optimized for achieving the rational configuration of cogeneration system, as well as detailed flow charts of key development steps.



#### 17. 生活垃圾流化床焚烧锅炉 GB/T34552—2017

本标准规定了生活垃圾流化床焚烧锅炉的术语和定义、分类与型号、入炉垃圾要求、技术要求、检查和检验、油漆、包装、标志和出厂资料、安装、试验和验收等技术要求。

本标准适用于以生活垃圾为燃料（含辅助燃煤质量占比不超过20%）的流化床燃烧设备。

#### 17. Municipal solid waste fluidized bed incineration boiler

This standard specifies the terms, definitions, classification, types, incoming furnace waste requirements, technical parameters, inspection, painting, packaging, marks and ex-factory documents that including installation, testing and acceptance for municipal solid waste fluidized bed incineration boilers.

This standard is applicable to fluidized bed combustion equipment that uses municipal solid waste as fuel (including maximum 20% auxiliary coal quality).



#### 18. 民用建筑节能材料评价标准 GB/T 34909—2018

本标准规定了民用建筑节能材料评价的术语和定义、设计阶段评价、施工阶段评价和评分方式。本标准适用于民用建筑设计阶段和施工阶段节材水平的前期评估和比选，也可用于绿色建筑节材部分的评价。

#### 18. Evaluation standard of material-saving for civil building

This standard defines the terms and definitions of material saving evaluation for civil buildings, evaluation at design stage, evaluation at construction stage and evaluation methods. This standard is applicable to the early evaluation and comparison of material saving level in civil architectural design stage and construction stage, and also to the evaluation of material saving part in green building.



#### 19. 声学 室内声学参量测量——第1部分：观演空间

GB/T 36075.1—2018

本部分规定了观演空间混响时间和其他音质参量的测量方法、测量步骤、测量设备、涵盖范围、结果评价和测试报告式样，适用于采用现代数字技术进行声学测量和对基于脉冲响应得出的室内音质参量的评价。

19. Acoustics—Measurement of room acoustic parameters

Part 1: Performance spaces

This section defines the measurement methods, measurement steps, measurement equipment, coverage, result evaluation and test report style of reverberation time and other sound quality parameters in the viewing space. It is suitable for acoustic measurement using modern digital technology and evaluation of indoor sound quality parameters based on impulse response.



#### 20. 声学 室内声学参量测量——第2部分：普通房间的混响时间

GB/T 36075.2—2018

本部分规定了普通房间混响时间的测量方法、测量步骤、测量设备、测点数量、结果评价和测试报告式样。

测量结果可用于声源声压级测量和隔声测量等声学测量中修正项的计算，并可用于与房间的混响时间设计要求进行比较。

20. Acoustics—Measurement of room acoustic parameters

Part 2: Reverberation time in ordinary rooms

This section defines the measurement method, measurement steps, measurement equipment, number of measurement points, result evaluation and test report style of reverberation time in ordinary rooms.

The measurement results can be used to calculate the correction items in acoustic measurement such as sound source pressure level measurement and sound insulation measurement, and can be compared with the reverberation time design requirements of rooms.



## 21. 声学 室内声学参量测量——第3部分：开放式办公室

GB/T 36075.3—2018

本部分规定了有办公家具陈设的开放式办公室的室内声学性能的测量方法，内容包括测量方法、仪器设备、测试要求、评价方法和结果表达。

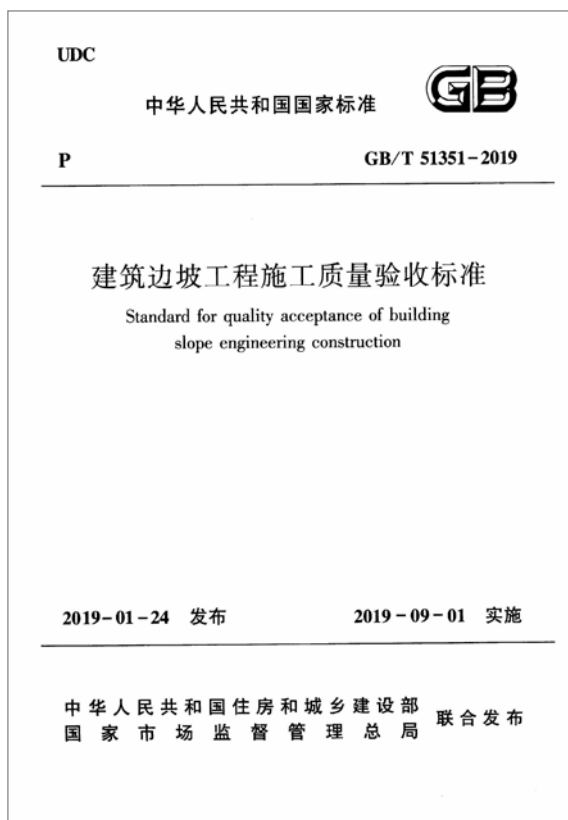
测量结果可用于评价开放式办公室的声学性能。本部分适用于中等及大型的开放式办公室。

21. Acoustics—Measurement of room acoustic parameters

Part 3: Open plan offices

This section defines the measurement methods of indoor acoustic performance of open office with office furniture, including measurement methods, instruments and equipment, test requirements, evaluation methods and results expression.

The measurement results can be used to evaluate the acoustic performance of open office. This section is suitable for medium and large open office.



## 22. 建筑边坡工程施工质量验收标准 GB/T 51351—2019

本标准适用于除软土、湿陷性黄土、冻土、膨胀土和其他特殊性岩土以及腐蚀性环境的建筑边坡工程以及岩石基坑边坡工程的施工质量验收。

22. Standard for quality Acceptance of building Slope engineering construction

This standard is applicable to the construction quality acceptance of the construction slope engineering in removing soft soil, collapsible loess, frozen soil, expansive soil and other special geotechnical and corrosive environment as well as the slope engineering of rock foundation pit.



### 23. 压缩空气站设计规范 GB50029-2014

该规范适用于装有电力驱动、工作压力小于或等于 42MPa 的活塞空气压缩机、隔膜空气压缩机、螺杆空气压缩机、离心空气压缩机的新建、改建、扩建的压缩空气站的系统设计，且并不适用于井下、洞内等特殊场所的压缩空气站。

#### 23. Code for design of compressed air station

This code is applicable to the design for the newly built, rebuilt or expanded compressed air stations equipped with reciprocating type air compressor, diaphragm air compressor, screw air compressor or centrifugal air compressor which powered by electricity operates at the pressure of less than 42 MPa except the compressed air stations located in the special spaces such as pits, caves and so on.



### 24. 螺纹桩技术规程 JGJ/T 379-2016

本规程适用于建筑工程螺纹桩的设计、施工及验收。

#### 24. Technical specification for screw concrete pile

This regulation is applicable to the design, construction and acceptance of threaded piles in construction projects.

# 合肥通用机械研究院有限公司

Hefei General Machinery Research Institute Co., Ltd.

**公司名称：合肥通用机械研究院有限公司**  
**Company Name: Hefei General Machinery Research Institute Co., Ltd.**

合肥通用机械研究院有限公司（以下简称“合肥通用院”）1956年成立于北京，1969年搬迁至合肥，1999年改制为科技型企业，是原国家机械部直属的多专业综合性的国家一类科研院所，现隶属于中国机械工业集团有限公司。主要从事石油、化工、能源、冶金、燃气、环保、国防军工等行业通用机械、化工设备的设计开发、产品研制、工程承包、设备成套、检测检验、设备及工程监理等。科研工作覆盖压力容器与管道安全工程技术、储运装备、特种金属材料设备、压缩机、风机、泵、阀门、密封、过滤与分离机械、高压水射流、制冷空调与环境控制技术、石油装备、包装机械及科普装备等专业领域。

合肥通用院是国际标准化组织 / 制冷和空调技术委员会 / 制冷压缩机的测试和评定分技术委员会 (ISO/TC86/SC4)、全国冷冻空调设备标准化技术委员会 (TC238)、全国压缩机标准化技术委员会 (TC145)、全国阀门标准化技术委员会 (TC188)、全国安全泄压装置标准化技术委员会 (TC503)、全国分离机械标准化技术委员会 (TC92)、全国包装机械标准化技术委员会 (TC436)、全国食品包装机械标准化技术委员会 (TC494)、全国喷射设备标准化技术委员会 (TC493)、全国机械密封标准化技术委员会 (TC491)、全国填料与静密封标准化技术委员会 (TC350)、全国锅炉压力容器标准化技术委员会固定式压力容器分技术委员会 (TC262/SC2)、全国压缩机标准化技术委员会压缩气体净化设备分技术委员会 (TC145/SC1)、全国阀门标准化技术委员会阀门驱动装置分技术委员会 (TC188/SC2)、全国泵标准化技术委员会容积泵分技术委员会 (TC211/SC1) 的秘书处单位。合肥通用院自成立以来，累计制修订各类标准1600余项。合肥通用院始终高度重视标准化工作，充分利用专业标委会的职能作用，及时组织自主创新成果和行业创新成果纳入国家、行业标准，以标准引领行业技术进步，促进行业质量提升，稳步推进我国标准化事业和持续促进行业健康发展。

Hefei General Machinery Research Institute Co., Ltd (HGMRI) was founded in Beijing in 1956, relocated to Hefei in 1969 and transformed to a science and technology enterprise in 1999. It is a multidiscipline comprehensive national class A scientific research institute under jurisdiction of the former Ministry of Machinery Industry and now is subordinate to China National Machinery Industry Corporation. It is mainly engaged in design and development and engineering supervision etc, of general machinery and chemical equipment for petrochemical industry, energy, metallurgy, gas, environment protection, national defense industries, etc. The scientific research and development work covers such fields as safety engineering technology of pressure vessels and pipelines storage and transportation equipment, special metallic material equipment, compressors, blowers, pumps, valves, seals, filtration and separation machinery, high pressure jet equipment, refrigerating and air conditioning and environmental control technology, petroleum equipment, packaging machinery, scientific popularization equipment, etc.

HGMRI is the secretariat unit of the following organizations: International Organization for Standardization/Technical Committee on Refrigeration and Air-Conditioning/ Technical Sub-committee on Testing and Evaluation of Refrigeration Compressors (ISO/TC86/SC4), China Standardization Committee of Refrigeration and Air Conditioning Equipment (TC238), China Standardization Committee of Compression Machinery (TC145), China Standardization Committee of Valve (TC188), China Standardization Committee of Safety Relief Devices (TC503), China Standardization Committee of Separation Machinery (TC92), China Standardization Committee of Packaging Machinery (TC436), China Standardization Committee of Food Packaging Machinery (TC494), China Standardization Committee of Jet Equipment (TC493), China Standardization Committee of Mechanical Sealing (TC491), China Standardization Committee of Filling and Sealing (TC350), China Standardization Committee of Boiler and Pressure Vessels Sub-Committee of Stationary Pressure Vessels (TC262/SC2), China Standardization Committee of Compression Machines Sub-Committee of Compressed Gas Purification Equipment (TC145/SC1), China Standardization Committee of Valve Sub-Technical Committee Valve Drive Device (TC188/SC2), China Standardization Committee of Pump Sub-Technical Committee of Positive-displacement Pump (TC211/SC1).

HGMRI has formulated or revised more than 1,600 standards since



its establishment. HGMRI has always attached great importance to standardization work, fully utilized the role of the professional standards committee, timely organizes independent innovation achievements and industrial innovation achievements into national and industrial standards, guides the technological progress of the industry with standards, promotes the quality of the industry, and steadily promotes standardization and promotes the healthy development of the industry.

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标准  
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3	NB/T 47015-2011	压力容器焊接规程	3--NB/T 47015-2011 压力容器焊接规程
4	GB/T 26610.1-2011	承压设备系统基于风险的检验实施导则 第 1 部分：基本要求和实施程序	4--GB/T 26610.1-2011 承压设备系统基于风险的检验实施导则 第 1 部分：基本要求和实施程序
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17	NB/T 47024-2012	非金属软垫片	17--NB/T 47024-2012 非金属软垫片
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19	NB/T 47026-2012	金属包垫片	19--NB/T 47026-2012 金属包垫片
20	NB/T 47028-2012	压力容器用镍及镍合金锻件	20--NB/T 47028-2012 压力容器用镍及镍合金锻件
21	NB/T 47029-2012	压力容器用铝及铝合金锻件	21--NB/T 47029-2012 压力容器用铝及铝合金锻件
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24	NB/T 47013.4-2015	承压设备无损检测 第 4 部分：磁粉检测	24--NB/T 47013.4-2015 承压设备无损检测 第 4 部分：磁粉检测
25	NB/T 47013.5-2015	承压设备无损检测 第 5 部分：渗透检测	25--NB/T 47013.5-2015 承压设备无损检测 第 5 部分：渗透检测
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29	NB/T 47009-2017	低温承压设备用合金钢锻件	29--NB/T 47009-2017 低温承压设备用合金钢锻件
30	NB/T 47010-2017	承压设备用不锈钢和耐热钢锻件	30--NB/T 47010-2017 承压设备用不锈钢和耐热钢锻件
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36	GB/T 19409-2013	水源热泵机组	36--GB/T 19409-2013 水(地)源热泵机组

37	GB/T 10870-2014	蒸汽压缩循环冷水（热泵）机组性能试验方法	37--GB/T 10870-2014 蒸汽压缩循环冷水（热泵）机组性能试验方法
38	GB/T 31512-2015	水源热泵系统经济运行	38--GB/T 31512-2015 水源热泵系统经济运行
39	GB/T 31510-2015	远置式压缩冷凝机组冷藏陈列柜系统经济运行	39--GB/T 31510-2015 远置式压缩冷凝机组冷藏陈列柜系统经济运行
40	GB/T 18837-2015	多联式空调（热泵）机组	40--GB/T 18837-2015 多联式空调（热泵）机组
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44	GB/T 16665-2017	空气压缩机组及供气系统节能监测	44--GB/T 16665-2017 空气压缩机组及供气系统节能监测
45	GB/T 9237-2017	制冷系统及热泵 安全与环境要求	45--GB/T 9237-2017 制冷系统及热泵 安全与环境要求
46	GB/T 18429-2018	全封闭涡旋式制冷压缩机	46--GB/T 18429-2018 全封闭涡旋式制冷压缩机
47	GB/T 21360-2018	汽车空调用制冷剂压缩机	47--GB/T 21360-2018 汽车空调用制冷剂压缩机
48	JB/T 11524-2013	干式风机盘管机组	48--JB/T 11524-2013 干式风机盘管机组
49	JB/T 3548-2013	制冷用热力膨胀阀	49--JB/T 3548-2013 制冷用热力膨胀阀
50	JB/T 9062-2013	采暖通风与空气调节设备 涂装要求	50--JB/T 9062-2013 采暖通风与空气调节设备 涂装要求
51	JB/T 6411-2014	暖通空调用轴流通风机	51--JB/T 6411-2014 暖通空调用轴流通风机
52	JB/T 12326-2015	CO <sub>2</sub> 制冷系统用换热器	52--JB/T 12326-2015 CO <sub>2</sub> 制冷系统用换热器
53	JB/T 12327-2015	预冷式热回收型新风机组	53--JB/T 12327-2015 预冷式热回收型新风机组
54	JB/T 9065-2015	制冷空调设备包装 通用技术条件	54--JB/T 9065-2015 制冷空调设备包装 通用技术条件
55	JB/T 12842-2016	空调系统用辐射换热器	55--JB/T 12842-2016 空调系统用辐射换热器
56	JB/T 12843-2016	离心式制冷压缩机	56--JB/T 12843-2016 离心式制冷压缩机
57	JB/T 12844-2016	制冷剂回收循环处理设备	57--JB/T 12844-2016 制冷剂回收循环处理设备
58	JB/T 6918-2017	制冷用金属与玻璃烧结液面计和视镜	58--JB/T 6918-2017 制冷用金属与玻璃烧结液面计和视镜
59	JB/T 7221-2017	暖通空调用离心通风机	59--JB/T 7221-2017 暖通空调用离心通风机
60	JB/T 7225-2017	暖风机	60--JB/T 7225-2017 暖风机
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82	JB/T 12566-2015	核电用隔膜压缩机 技术条件	82--JB/T 12566-2015 核电用隔膜压缩机 技术条件
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85	JB/T 12948-2016	粉粒输送用干式螺杆空气压缩机	85--JB/T 12948-2016 粉粒输送用干式螺杆空气压缩机
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90	JB/T 10532-2017	一般用吸附式压缩空气干燥器	90--JB/T 10532-2017 一般用吸附式压缩空气干燥器
91	NB/T 42027-2013	螺杆膨胀机 承压铸钢件技术规范	91--NB/T 42027-2013 螺杆膨胀机 承压铸钢件技术规范
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106	JB/T 6909-2014	超高压泵	106--JB/T 6909-2014 超高压泵
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109	JB/T 8543-2015	泵产品零件无损检测 泵受压铸钢件射线检测	109--JB/T 8543-2015 泵产品零件无损检测 泵受压铸钢件射线检测
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115	GB/T 30832-2014	阀门 流量系数和流阻系数 试验方法	115--GB/T 30832-2014 阀门 流量系数和流阻系数 试验方法
116	GB/T 12220-2015	工业阀门 标志	116--GB/T 12220-2015 工业阀门 标志
117	GB/T 32290-2015	供水系统用弹性密封轻型闸阀	117--GB/T 32290-2015 供水系统用弹性密封轻型闸阀
118	GB/T 12224-2015	钢制阀门 一般要求	118--GB/T 12224-2015 钢制阀门 一般要求
119	GB/T 32808-2016	阀门 型号编制方法	119--GB/T 32808-2016 阀门 型号编制方法
120	GB/T 13932-2016	铁制旋启式止回阀	120--GB/T 13932-2016 铁制旋启式止回阀
121	GB/T 12225-2018	通用阀门 铜合金铸件技术条件	121--GB/T 12225-2018 通用阀门 铜合金铸件技术条件
122	JB/T 8692-2013	烟道蝶阀	122--JB/T 8692-2013 烟道蝶阀
123	JB/T 8531-2013	阀门手动装置 技术条件	123--JB/T 8531-2013 阀门手动装置 技术条件
124	JB/T 5299-2013	液控止回蝶阀	124--JB/T 5299-2013 液控止回蝶阀
125	JB/T 8691-2013	无阀盖刀型闸阀	125--JB/T 8691-2013 无阀盖刀型闸阀

126	JB/T 12003-2014	阀门低温试验装置规范	126--JB/T 12003-2014 阀门低温试验装置规范
127	JB/T 12006-2014	钢管焊接球阀	127--JB/T 12006-2014 钢管焊接球阀
128	JB/T 7928-2014	工业阀门 供货要求	128--JB/T 7928-2014 工业阀门 供货要求
129	JB/T 8862-2014	阀门电动装置寿命试验规程	129--JB/T 8862-2014 阀门电动装置寿命试验规程
130	JB/T 8530-2014	阀门电动装置型号编制方法	130--JB/T 8530-2014 阀门电动装置型号编制方法
131	JB/T 12746-2015	含缺陷高温压力管道和阀门安全评定方法	131--JB/T 12746-2015 含缺陷高温压力管道和阀门安全评定方法
132	JB/T 12526-2015	工业阀门 柱塞阀	132--JB/T 12526-2015 工业阀门 柱塞阀
133	JB/T 12619-2016	法兰和对焊连接耐腐闸阀	133--JB/T 12619-2016 法兰和对焊连接耐腐闸阀
134	JB/T 12622-2016	液化天然气用阀门 性能试验	134--JB/T 12622-2016 液化天然气用阀门 性能试验
135	JB/T 12625-2016	液化天然气用球阀	135--JB/T 12625-2016 液化天然气用球阀
136	JB/T 12797-2016	煤化工装置用阀门 技术条件	136--JB/T 12797-2016 煤化工装置用阀门 技术条件
137	JB/T 8858-2017	闸阀 静压寿命试验规程	137--JB/T 8858-2017 闸阀 静压寿命试验规程
138	JB/T 8859-2017	截止阀 静压寿命试验规程	138--JB/T 8859-2017 截止阀 静压寿命试验规程
139	JB/T 8860-2017	旋塞阀 静压寿命试验规程	139--JB/T 8860-2017 旋塞阀 静压寿命试验规程
140	JB/T 8861-2017	球阀 静压寿命试验规程	140--JB/T 8861-2017 球阀 静压寿命试验规程
141	JB/T 8863-2017	蝶阀 静压寿命试验规程	141--JB/T 8863-2017 蝶阀 静压寿命试验规程
142	GB/T 5894-2015	机械密封名词术语	142--GB/T 5894-2015 机械密封名词术语
143	GB/T 6556-2016	机械密封产品型式、主要尺寸、材料和识别标志	143--GB/T 6556-2016 机械密封产品型式、主要尺寸、材料和识别标志
144	GB/T 10444-2016	机械密封产品型号编制方法	144--GB/T 10444-2016 机械密封产品型号编制方法
145	GB/T 33509-2017	机械密封通用规范	145--GB/T 33509-2017 机械密封通用规范
146	JB/T 4127.1-2013	机械密封 第 1 部分：技术条件	146--JB/T 4127.1-2013 机械密封 第 1 部分：技术条件
147	JB/T 4127.2-2013	机械密封 第 2 部分：分类方法	147--JB/T 4127.2-2013 机械密封 第 2 部分：分类方法
148	JB/T 6629-2015	机械密封循环保护系统及辅助装置	148--JB/T 6629-2015 机械密封循环保护系统及辅助装置
149	JB/T 6619.1-2018	轻型机械密封 第 1 部分：技术条件	149--JB/T 6619.1-2018 轻型机械密封 第 1 部分：技术条件
150	JB/T 6619.2-2018	轻型机械密封 第 2 部分：试验方法	150--JB/T 6619.2-2018 轻型机械密封 第 2 部分：试验方法
151	GB/T 33920-2017	柔性石墨板试验方法	151--GB/T 33920-2017 柔性石墨板试验方法
152	JB/T 9141.1-2013	柔性石墨板材 第 1 部分：密度测试方法	152--JB/T 9141.1-2013 柔性石墨板材 第 1 部分：密度测试方法
153	JB/T 9141.2-2013	柔性石墨板材 第 2 部分：抗拉强度测试方法	153--JB/T 9141.2-2013 柔性石墨板材 第 2 部分：抗拉强度测试方法
154	JB/T 9141.7-2013	柔性石墨板材 第 7 部分：热失重测定方法	154--JB/T 9141.7-2013 柔性石墨板材 第 7 部分：热失重测定方法
155	JB/T 8560-2013	碳纤维 / 聚四氟乙烯编织填料	155--JB/T 8560-2013 碳纤维 / 聚四氟乙烯编织填料
156	JB/T 8559-2014	金属包垫片	156--JB/T 8559-2014 金属包垫片
157	JB/T 7370-2014	柔性石墨编织填料	157--JB/T 7370-2014 柔性石墨编织填料
158	JB/T 9141.9-2014	柔性石墨板材 第 9 部分：取样方法	158--JB/T 9141.9-2014 柔性石墨板材 第 9 部分：取样方法
159	JB/T 6617-2016	柔性石墨填料环技术条件	159--JB/T 6617-2016 柔性石墨填料环技术条件
160	JB/T 6628-2016	柔性石墨复合增强（板）垫	160--JB/T 6628-2016 柔性石墨复合增强（板）垫
161	JB/T 12548-2015	外抽式真空包装机	161--JB/T 12548-2015 外抽式真空包装机
162	QC/T 1080-2017	科普宣传车	162--QC/T 1080-2017 科普宣传车





### 1、GB 150.2—2011 压力容器 第2部分：材料

GB 150 的本部分规定了压力容器受压元件用钢材允许使用的钢号及其标准，钢材的附加技术要求，钢材的使用范围（温度和压力）和许用应力。

本部分适用于设计温度  $-253^{\circ}\text{C} \sim 800^{\circ}\text{C}$ 、设计压力不大于 35 MPa 的压力容器。

本部分不适用的范围为：GB 150.1 规定的不适用范围；制冷、造纸行业的容器，搪玻璃容器和简单压力容器；TSG R0004 中 1.4 条所规定的范围。

#### Pressure vessels—Part 2: Materials

This section of GB 150 specifies the steel designations and standards allowed for use in pressure vessel load elements, the additional technical requirements, the range of using (temperature and pressure), and allowable stresses.

This section is applicable to pressure vessels with design temperature of  $-253^{\circ}\text{C} \sim 800^{\circ}\text{C}$  and design pressure of no more than 35 MPa.

The scope of exclusion in this section is: the scope of exclusion specified in GB 150.1; vessels used in refrigeration, paper industry, glassed steel vessels and simple pressure vessels; the scope as specified in article 1.4 of TSG R0004.



### 2、GB 150.4—2011 压力容器 第4部分：制造、检验和验收

本部分规定了 GB 150 适用范围内的钢制压力容器的制造、检验与验收要求；其他材料制压力容器的制造、检验与验收要求按相关标准。

本部分适用的压力容器结构形式为单层焊接压力容器、锻焊压力容器和多层压力容器（包括多层筒节包扎、多层整体包扎、钢带错绕和套合容器）。

对于奥氏体型钢材制低温压力容器（设计温度低于  $-196^{\circ}\text{C}$ ），由参与建造的各方协商规定附加的制造、检验与验收要求，由设计单位在设计文件中予以规定。

#### Pressure vessels—Part 4: Fabrication, inspection and testing, and acceptance

This section of GB 150 specifies all applicable requirements for fabrication, testing and inspection, and acceptance of steel vessels within the applicable scope of GB 150. For vessels made of other metal materials, the fabrication, testing and inspection, and acceptance requirements shall be determined according to the corresponding reference standards.

The structure forms of the steel vessels to which this part is applicable shall be single-layer welded pressure vessels, forging and welding pressure vessels (including multi-layer tube joint wrapping, multi-layer integral wrapping, steel ribbon wound and shrink-fit vessels).

For low-temperature pressure vessels made of austenitic steel (design temperature is lower than  $196^{\circ}\text{C}$ ), the additional fabrication, testing and inspection, and acceptance requirements shall be stipulated by the parties involved in the construction through consultation and shall be stipulated by the designer in the design documents.



### 3、GB/T 25198—2010 压力容器封头

本标准规定了钢制以及铝、钛、铜、镍及镍合金制压力容器用封头的制造、检验与验收要求，以及常用的封头型式与基本参数。本标准适用于整板、拼板采用冲压、旋压、卷制以及分瓣成形的压力容器用半球形、椭圆形、碟形、球冠形、平底形和锥形封头。

常压容器及其他承压设备用封头的制造、检验与验收要求亦可参照本标准执行。

#### Heads for pressure vessels

This standard specifies the requirements for manufacture, inspection and acceptance of heads for pressure vessels made of steel and aluminium, titanium, copper, nickel and nickel alloys, as well as including the commonly used head types and basic parameters.

This standard is applicable to hemispherical, ellipsoidal, dish, spherical crown, flat bottom and conical pressure vessel heads that pressure vessels are formed by stamping, spinning, rolling and split forming using whole and splicing plates.

The manufacture, inspection and acceptance of heads for atmospheric vessels and other pressure-bearing equipment can also be carried out in accordance with this standard.



### 4、NB/T 47015—2011 压力容器焊接规程

本标准适用于气焊、焊条电弧焊、埋弧焊、钨极气体保护焊、熔化极气体保护焊、等离子弧焊、气电立焊和螺柱焊焊接的压力容器。

#### Welding specification for Pressure vessels

This specification applies to pressure vessels using welding methods of oxygen fuel gas welding, shielded metal arc welding, submerged arc welding, gas tungsten arc welding, gas metal arc welding, plasma arc welding, electric-gas welding and stud arc welding.





5、GB/T 26610.1—2011 承压设备系统基于风险的检验实施导则第1部分：基本要求和实施程序

本部分规定的基本要求与主要程序适用于石油化工装置承压设备系统实施的RBI项目，其他工业承压设备系统实施的RBI项目也可参照使用。

本部分给出的基本要求与主要程序适用于承压设备系统中如下设备及相关零部件实施的RBI项目：

- a) 压力容器及其全部承压零部件；
- b) 过程装置界区内的压力管道及其全部承压管件；
- c) 常压储罐；
- d) 动设备中承受内压的壳体；
- e) 锅炉与加热炉中的承压零部件；
- f) 安全阀等安全泄放装置。

Guideline for implementation of risk-based inspection of pressure equipment system—Part 1: Basic requirements and implementation procedure

The basic requirements and main procedures specified in this section are applicable to the RBI projects implemented in the pressure equipment system of petrochemical plants. The RBI projects implemented in other industrial pressure equipment systems can also be used as reference.

The basic requirements and main procedures given in this section are applicable to the RBI projects implemented by the following equipment and related components in the pressure equipment system:

- a) Pressure vessels and all their pressure-bearing components;
- b) The pressure pipeline and all its pressure-bearing fittings in the boundary area of the process device;
- c) Atmospheric pressure tank;
- d) The shell in the mobile equipment withstands internal pressure;
- e) Pressure-bearing parts in boilers and heating furnaces;
- f) Safety relief devices such as safety valves.



6、GB/T 28712.2—2012

热交换器型式与基本参数 第2部分：固定管板式热交换器

本标准规定了固定管板式热交换器（以下简称“换热器”）的型式、公称直径、公称压力、换热管规格、排列形式、计算换热面积、折流板（支持板）间距和管程数等基本参数。

本标准适用于化学、石油工业用碳素钢、低合金钢、不锈钢、有色金属制换热器，也适用于其他工业部门用相似的换热器。

Types and basic parameters of heat-exchangers—Part 2: Fixed tube sheet heat exchangers

GB/T 28712.2 stipulates the essential parameters of fixed tube sheet heat exchangers such as type, nominal diameter, nominal pressure, heat exchange tube specification, tube arrangement, heat exchange area calculation, baffle plate (supporting plate) spacing, and number of tubes of the fixed tube-plate heat exchangers (hereinafter referred to as “heat exchangers”).

This section is applicable to carbon steel, low alloy steel, stainless steel, non-ferrous metal made heat exchangers for chemical and petroleum industries, as well as similar heat exchangers used in other industrial sectors.



#### 7、GB/T 28712.4—2012

热交换器型式与基本参数 第4部分：立式热虹吸式重沸器  
标准应用范围（中英文）：

本标准规定了立式热虹吸式重沸器（以下简称“重沸器”）的型式、公称直径、公称压力、换热管规格、计算换热面积以及支持板间距等基本参数。

本标准适用于石油、化学工业用碳素钢、低合金钢、不锈钢、铝、铜和钛制重沸器，也适用于其他工业部门用相似的重沸器。

Types and basic parameters of heat-exchangers—Part 4: Vertical thermo siphon reboilers

GB/T 28712.4 stipulates the essential parameters of vertical thermo siphon reboilers such as type, nominal diameter, nominal pressure, heat exchange tube specification, heat exchange area calculation and supporting plate spacing of the vertical thermo siphon reboilers (hereinafter referred to as “reboilers”).

This section is applicable to carbon steel, low alloy steel, acid-resistant stainless steel, aluminum, copper and titanium made reboilers for chemical and petroleum industries, as well as similar reboilers used in other industrial sectors.



#### 8、GB/T 28712.5—2012

热交换器型式与基本参数 第5部分：螺旋板式热交换器

本标准规定了不可拆和可拆螺旋板式热交换器的型式、公称压力、公称直径、计算换热面积等基本参数。

本部分适用于公称压力不大于2.5MPa、公称直径不大于2000mm、公称换热面积不大于200 m<sup>2</sup>的不可拆螺旋板式热交换器。

本部分适用于公称压力不大于1.0MPa、公称直径不大于1200mm、公称换热面积不大于90 m<sup>2</sup>的可拆螺旋板式热交换器。

Types and basic parameters of heat-exchangers—Part 5: Spiral heat exchangers

GB/T 28712.5 stipulates the essential parameters of spiral heat exchangers such as type, nominal pressure, nominal diameter, and heat exchange area calculation of the non-removable and detachable spiral plate heat exchangers.

This section is applicable to non-removable spiral plate heat exchangers which the nominal pressure is no more than 2.5MPa, nominal diameter is no more than 2000mm and nominal heat exchange area is no more than 200m<sup>2</sup>.

This section is applicable to detachable spiral plate heat exchangers which the nominal pressure is no more than 1.0MPa, nominal diameter is no more than 1200mm and nominal heat exchange area is no more than 90 m<sup>2</sup>.



#### 9、GB/T 26610.3—2014

承压设备系统基于风险的检验实施导则 第3部分:风险的定性分析方法

主要应用于石油化工装置承压设备系统,包括如下设备及相关零部件:

- a) 压力容器及其全部承压零部件;
- b) 过程装置界区内的压力管道及其全部承压管件;
- c) 常压储罐;
- d) 动设备中承受内压的壳体;
- e) 锅炉与加热炉中的承压零部件;
- f) 安全阀等安全泄放装置。

Guideline for implementation of risk-based inspection of pressure equipment system—Part 3: Qualitative approach to risk

Mainly used in pressure equipment system of petrochemical plant, including the following equipment and related parts:

- a) Pressure vessels and all their pressure-bearing components;
- b) The pressure pipeline and all its pressure-bearing fittings in the boundary area of the process device;
- c) Atmospheric pressure tank;
- d) The shell in the mobile equipment withstands internal pressure;
- e) Pressure-bearing parts in boilers and heating furnaces;
- f) Safety relief devices such as safety valves.



#### 10、GB/T 26610.4—2014

承压设备系统基于风险的检验实施导则 第4部分:失效可能性定量分析方法

主要应用于石油化工装置承压设备系统,包括如下设备及相关零部件:

- a) 压力容器及其全部承压零部件;
- b) 过程装置界区内的压力管道及其全部承压管件;
- c) 常压储罐;
- d) 动设备中承受内压的壳体;
- e) 锅炉与加热炉中的承压零部件;
- f) 安全阀等安全泄放装置。

Guideline for implementation of risk-based inspection of pressure equipment system—Part 4: Quantitative analysis approach of failure likelihood

Mainly used in pressure equipment system of petrochemical plant, including the following equipment and related parts:

- a) Pressure vessels and all their pressure-bearing components;
- b) The pressure pipeline and all its pressure-bearing fittings in the boundary area of the process device;
- c) Atmospheric pressure tank;
- d) The shell in the mobile equipment withstands internal pressure;
- e) Pressure-bearing parts in boilers and heating furnaces;
- f) Safety relief devices such as safety valves.



#### 11、GB/T 16749—2018 压力容器波形膨胀节

本标准规定了压力容器波形膨胀节的术语和定义、通用要求、分类和标记、材料、设计、制造、检验与验收、检验规则、出厂要求、贮存与安装。

本标准规定的压力容器波形膨胀节适用于：

- a) 压力容器用无加强 U 形、加强 U 形或  $\Omega$  形，承受内压或外压的单层或多层波形膨胀节，其中波纹管符合 7.2.1 条规定。
  - b) 设计压力不大于 12MPa；
  - c) 设计温度适用以下条件：
    - 1) 钢材不得超过 GB/T150.2—2011 列入材料的允许使用温度范围；
    - 2) 其他金属材料按相应引用标准中列入材料的允许使用温度确定。
  - d) 公称直径不大于 4000mm；
  - e) 设计压力 (MPa) 与公称直径 (mm) 的乘积不大于  $2.7 \times 10^4$ ；超出 1.2 条范围的波形膨胀节，可参照本标准进行制造。
- 本标准不适用于下列波形膨胀节：
- a) 直接火焰加热用波形膨胀节；
  - b) 非金属波形膨胀节；
  - c) 核能装置中存在中子辐射损伤失效风险的波形膨胀节。

Bellows expansion joints for pressure vessel

This standard specifies all applicable requirements for general requirements, terms and definition, classification and marking, materials, design, fabrication, inspection and acceptance, inspection rules, factory requirements, storage and installation of bellows expansion joints for pressure vessel.

The standard applies in the following bellows expansion joints:

- a) the single or multi-layer bellows expansion joints for pressure vessel with U-shaped, reinforced U-shaped and  $\Omega$ -shaped, under internal or external pressure, but the bellows should conform to the requirements of 7.2.1.
  - b) a design pressure should not exceed 12 MPa
  - c) a design temperature applies to the following conditions:
    - 1) allowable applicable temperature range should be lower than that standard GB/T 150.2-2011.
    - 2) allowable applicable temperature of other steel materials are regulated by the referenced standard.
  - d) nominal diameter should not exceed 4000mm.
  - e) the product of design pressure (MPa) and nominal diameter(mm) should not exceed  $2.7 \times 10^4$ .
- The bellows expansion joints not included in 1.2 can be manufactured by this standard.
- The following bellows expansion joints are exempted from the scope of this standard.:
- a) directly fired process bellows expansion joints;
  - b) nonmetal bellows expansion joints;
  - c) bellows expansion joints used in nuclear-energy plant which may endure neutron damage.



#### 12、NB/T 47016—2011 承压设备产品焊接试件的力学性能检验

本标准规定了承压设备（锅炉、压力容器和压力管道）产品焊接试件准备、试样制备、检验方法和合格指标。

本标准适用于钢制、铝制、钛制、铜制和镍制承压设备产品焊接试件的力学性能和弯曲性能检验。

产品焊接试件包含产品焊接试板、产品检查试件、模拟环和鉴证环。本标准不适用于气瓶。

Mechanical property tests of product welded test coupons for pressure equipments

This specification specifies the preparation of welding specimens, sample preparation, inspection methods and qualification criteria for products of pressure-bearing equipment (boilers, pressure vessels, pressure pipelines).

This specification is applicable to the inspection of mechanical properties and bending properties of welding specimens for steel, aluminum, titanium, copper and nickel bearing equipment products.

The product welding sample includes the product welding test plate, product inspection sample, simulation ring and verification ring.

This specification does not apply to cylinders.



### 13、NB/T 47018.6-2011

承压设备用焊接材料订货技术条件 第6部分：铝及铝合金焊丝和填充丝

NB/T 47018 的本部分规定了铝及铝合金焊丝和填充丝的型号编制、技术要求、试验方法、检验规则。

本部分适用于承压设备气焊、钨极气体保护焊、熔化极气体保护焊和等离子弧焊用铝及铝合金焊丝和填充丝。

Technical permission of welding materials for pressure equipment Section 6: Bare aluminum and aluminum-alloy welding electrodes and rods

This part of NB/T 47018-2011 specifies type compiling, technical requirements, test methods and inspection rules for aluminum and aluminum alloy welded wires and filled wires.

This part is applicable to aluminum and aluminum alloy welded wires and filled wires for oxygen fuel gas welding, gas tungsten arc welding, gas metal arc welding, plasma arc welding for pressure equipment.



### 14、NB/T 47018.7-2011

承压设备用焊接材料订货技术条件 第7部分：钛及钛合金焊丝和填充丝

NB/T 47018 的本部分规定了钛及钛合金焊丝和填充丝的牌号编制、技术要求、试验方法、检验规则。

本部分适用于承压设备钨极气体保护焊、熔化极气体保护焊和等离子弧焊用钛及钛合金焊丝和填充丝。

Technical permission of welding materials for pressure equipment Section 7: Titanium and titanium-alloy welding electrodes and rods

This part of NB/T 47018-2011 specifies type compiling, technical requirements, test methods and inspection rules for titanium and titanium alloy welded wires and filled wires.

This part is applicable to titanium and titanium alloy welded wires and filled wires for oxygen fuel gas welding, gas tungsten arc welding, gas metal arc welding, plasma arc welding for pressure equipment.





#### 15、NB/T 47012—2010 制冷装置用压力容器

本标准规定了以液化气体为制冷剂、设计压力不高于 4.0MPa、设计温度不高于 200℃ 的制冷装置用压力容器（包括管壳式换热器，以下简称“容器”）的设计、制造、检验与验收要求。制冷装置的工作循环应是蒸气压缩式制冷循环及类似的循环（包括热泵）。

本标准不适用于内直径（矩形截面指对角线）小于 150mm 或容积小于 0.025 m<sup>3</sup> 的容器、无壳体的套管式换热器、冷却排管和直燃型吸收式制冷装置的发生器。

不能用本标准确定结构尺寸的受压元件，允许用以下方法设计，但需经全国锅炉压力容器标准化技术委员会和全国冷冻空调设备标准化技术委员会评定认可：

- a) 包括有限元法在内的应力分析；
- b) 用可比的已投入使用的结构进行对比经验设计。

#### Pressure vessels for refrigerant equipment

This standard specifies the requirements for the design, manufacture, inspection and acceptance of pressure vessels for refrigeration units (including shell-and-tube heat exchanger, hereinafter referred to as "vessels") with liquefied gases as refrigerants, design pressure no more than 4.0MPa and design temperature no more than 200℃. The working cycle of refrigeration units should adopt vapor compression refrigeration cycle and similar cycle (including heat pumps).

This standard is not applicable to the containers with inner diameter (diagonal line of rectangular section) less than 150 mm or volume less than 0.025 m<sup>3</sup>, casing heat exchangers without shells, cooling exhaust pipes and generators of direct-fired absorption refrigeration devices.

Pressure parts whose structural dimension cannot be determined by this standard are allowed to be designed by the following methods. But the design shall be evaluated and approved by the National Technical Committee for Standardization of Boilers and Pressure Vessels and the National Technical Committee for Standardization of Refrigeration and Air Conditioning Equipment:

- a) Stress analysis including finite element method;
- b) The comparative empirical design is carried out with comparable structures that have been put into use.



#### 16、NB/T 47020—2012 压力容器法兰分类与技术条件

本标准规定了压力容器法兰的分类、规格，法兰、螺柱、螺母的材料及与垫片的匹配，各级温度下的最大允许工作压力、技术要求以及标记。

本标准适用于公称压力 0.25 ~ 6.40 MPa，工作温度 -70 ~ 450℃ 的碳钢、低合金钢制压力容器法兰。

#### Type and specification for pressure vessel flanges

This standard specifies the application requirements of pressure vessel flanges, including the classification and specifications of pressure vessel flanges, the materials of flanges, studs and nuts, the matching of flanges, studs and nuts with gaskets, the maximum allowable working pressure, the technical specifications and markers at all levels of temperature.

This standard is applicable to carbon steel and low alloy steel pressure vessel flanges with a nominal pressure of 0.25/6.40 MPa and the operating temperature of -70~450℃.



#### 17、NB/T 47024—2012 非金属软垫片

本标准规定了压力容器法兰用非金属软垫片的型式、尺寸、标记和技术要求。

本标准适用于 NB/T 47021《甲型平焊法兰》、NB/T 47022《乙型平焊法兰》和 NB/T 47023《长颈对焊法兰》用非金属软垫片。

注：含石棉材料的使用应遵守相关法律和法规的规定，当生产和使用含石棉材料垫片时，应采取防护措施，以确保不对人身健康构成危害。

#### Nonmetallic gaskets

This standard specifies the type, size, markers and technical requirements of nonmetallic gaskets for pressure vessel flanges.

This standard is applicable to nonmetallic gaskets with NB/T 47021 Flange A, NB/T 47022 Flange B and NB/T 47023 Flange Long Neck Butt Welding.

Note: the use of asbestos-containing materials should abide by relevant laws and regulations. While producing and using asbestos-containing gaskets, the protective measures should be taken to ensure that personal health is not endangered.



#### 18、NB/T 47025—2012 缠绕垫片

本标准规定了压力容器法兰用缠绕垫片的尺寸和技术要求。

本标准适用 NB/T 47022《乙型平焊法兰》和 NB/T 47023《长颈对焊法兰》用缠绕垫片。

注：含石棉材料的使用应遵守相关法律和法规的规定，当生产和使用含石棉材料垫片时，应采取防护措施，以确保不对人身健康构成危害。

#### Spiral wound gaskets

This standard specifies the size and technical requirements of spiral wound gaskets for pressure vessel flanges.

This standard is applicable to spiral wound gaskets with NB/T 47022 Flange B and NB/T 47023 Flange Long Neck Butt Welding.

Note: the use of asbestos-containing materials should abide by relevant laws and regulations. While producing and using asbestos-containing gaskets, the protective measures should be taken to ensure that personal health is not endangered.





#### 19、NB/T 47026—2012 金属包垫片

本标准规定了压力容器法兰用金属包垫片的尺寸和技术要求。

本标准适用 NB/T 47022 《乙型平焊法兰》和 NB/T 47023 《长颈对焊法兰》用金属包垫片。

注：含石棉材料的使用应遵守相关法律和法规的规定，当生产和使用含石棉材料垫片时，应采取防护措施，以确保不对人身健康构成危害。

#### Double-jacketed gaskets

This standard specifies the size and technical requirements of double-jacketed gaskets for pressure vessel flanges.

This standard is applicable to double-jacketed gaskets with NB/T 47022 Flange B and NB/T 47023 Flange Long Neck Butt Welding.

Note: the use of asbestos-containing materials should abide by relevant laws and regulations. While producing and using asbestos-containing gaskets, the protective measures should be taken to ensure that personal health is not endangered.



#### 20、NB/T 47028—2012 压力容器用镍及镍合金锻件

本标准规定了压力容器用镍及镍合金锻件的技术要求、试验方法及检验规则等。

本标准适用于设计压力小于 100MPa 的压力容器镍及镍合金锻件。

#### Nickel and nickel alloy forgings for pressure vessels

This specification specifies the technical requirements, test methods and inspection rules of nickel and nickel alloy forgings for pressure vessels.

This specification is applicable to nickel and nickel alloy forgings of pressure vessels with a design pressure of less than 100MPa.



#### 21、NB/T 47029—2012 压力容器用铝及铝合金锻件

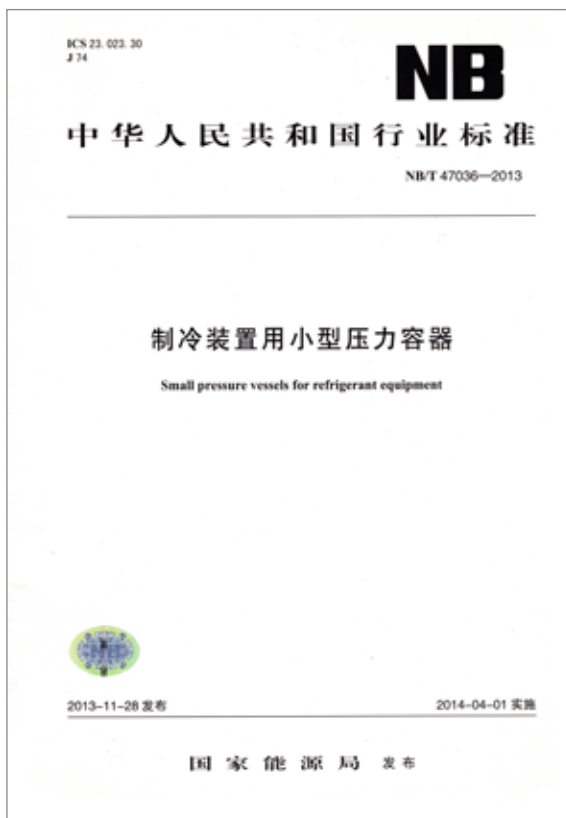
本标准规定了压力容器用铝及铝合金锻件（包括自由锻件和模锻件）的技术要求、试验方法及检验规则等。

本标准适用于设计压力不大于 16MPa 的压力容器用铝及铝合金锻件。

Aluminium and aluminium alloy forgings for pressure vessels

This specification specifies the technical requirements, test methods and inspection rules for aluminium and aluminium alloy forgings (including free forgings and stamp forgings) for pressure vessels.

This specification is applicable to aluminum and aluminum alloy forgings for pressure vessels with a design pressure of not more than 16 MPa.



#### 22、NB/T 47036—2013 制冷装置用小型压力容器

本标准规定了制冷装置用小型压力容器（以下简称容器）的术语、一般规定、材料、受压元件的设计、制造、检验和验收以及标志、包装、运输和贮存等。

本标准适用以液化气体为制冷剂、设计压力不高于 5.0MPa、设计温度不高于 150℃、容积小于 25L 或内直径（对非圆形截面，指截面内边界的最大几何尺寸，例如矩形为对角线，椭圆为长轴）小于 150mm 的容器。

容积小于 25L 的套管式换热器及汽车空调用压力容器，可以参照执行。

Small pressure vessels for refrigerant equipment

This standard defines different definitions for small pressure containers for refrigerant equipment (hereinafter referred to as containers), such as the terminology, general rules, materials and the design, manufacture, inspection and acceptance of pressurized components, as well as marking, packaging, transportation, storage and so on.

This standard is applicable to containers with liquefied gas as refrigerant, of which the design pressure is lower than 5.0MPa, the design temperature is lower than 150℃, the volume is less than 25L or the internal diameter (for non-circular section, the internal diameter refers to the maximum geometric size of the internal boundary of the section. For a rectangle, it is diagonal. For an ellipse, it is long axis) is less than 150mm.

Casing heat exchanger or pressure container used in an automobile air conditioning with volume less than 25L can be implemented with reference to this standard.



## 23、NB/T 47013.3—2015

### 承压设备无损检测 第 3 部分：超声检测

NB/T 47013 的本部分规定了承压设备采用 A 型脉冲反射式超声检测仪检测工件缺陷的超声检测方法和质量分级要求。

本部分适用于金属材料制承压设备用原材料或零部件和焊接接头的超声检测，也适用于金属材料制在用承压设备的超声检测。

本部分规定了承压设备厚度的超声测量方法。

与承压设备有关的支承件和结构件的超声检测，也可参照本部分使用。

#### Nondestructive testing of pressure equipments—Part 3: Ultrasonic testing

This part of NB/T 47013 specifies methods and quality classification for detecting discontinuities using pulse echo technique by ultrasonic testing instrument with A-scan display.

This part is applicable to ultrasonic testing for raw material, parts, components and welded joints used for metallic pressure equipments, and also for in-service metallic pressure equipments.

This part specifies thickness measurement methods for pressure equipments by ultrasound.

Ultrasonic testing of the relevant supports and structural parts related to pressure equipments may also be applied with reference to this part.



## 24、NB/T 47013.4—2015 承压设备无损检测 第 4 部分：磁粉检测

NB/T 47013 的本部分规定了承压设备焊缝及其原材料、机加工部件磁粉检测方法及其质量分级要求。

本部分适用于铁磁性材料制板材、复合板材、管材、管件和锻件等表面或近表面缺陷的检测，以及铁磁性材料对接接头、T 型焊接接头和角接头等表面或近表面缺陷的检测，不适用于非铁磁性材料的检测。

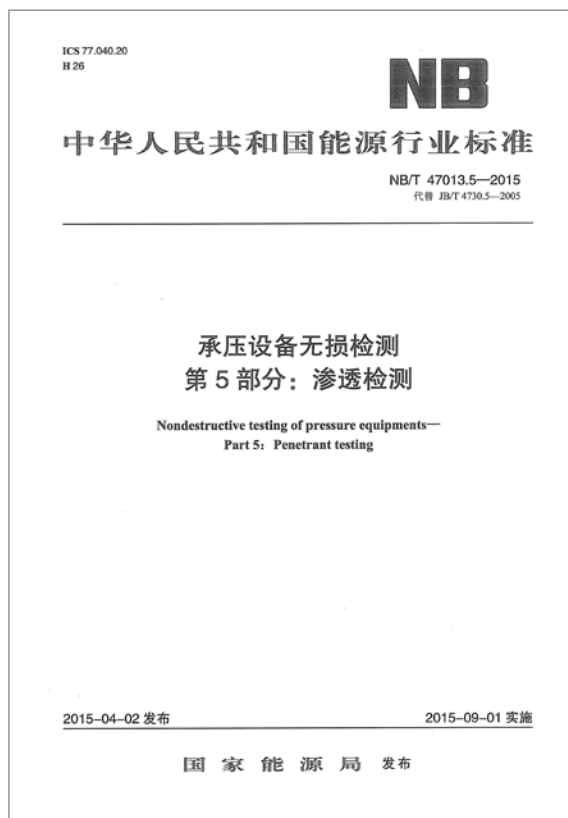
承压设备有关的支承件和结构件，也可参照本部分进行磁粉检测。

#### Nondestructive testing of pressure equipments—Part 4: Magnetic particle testing

This part of NB/T 47013 specifies methods and quality level requirements of magnetic particle testing for weld and raw materials/machined parts of pressure equipment.

This part is applicable to the detection of surface or near-surface defects for ferromagnetic materials such as plate, composite plate, pipe, pipe fitting and forging, as well as the detection of surface or near-surface defects for ferromagnetic materials such as butt joints, T-welded joints and corner joints, but not applicable to non-ferromagnetic materials.

For support and structural parts related to the pressure bearing equipment, magnetic particle testing can also be carried out by referring to this section.



## 25、NB/T 47013.5—2015 承压设备无损检测 第5部分：渗透检测

NB/T 47013 的本部分规定了承压设备的液体渗透检测方法和质量分级。

本部分适用于非多孔性金属材料制承压设备在制造、安装及使用中产生的表面开口缺陷的检测。

Nondestructive testing of pressure equipments—Part 5: Penetrant testing  
This part of NB/T 47013 specifies the liquid penetration testing method and quality classification of pressure equipment.

This Part is applicable to testing of surface opening defects in-fabrication, in-installation and in-service, made of non-porous metallic material or nonmetallic material.



## 26、NB/T 47013.6—2015 承压设备无损检测 第6部分：涡流检测

NB/T 47013 的本部分规定了承压设备涡流检测方法及其质量分级要求。

本部分适用于在制和在用承压设备用导电性金属材料管材、零部件、焊接接头表面及近表面缺陷的涡流检测，适用于金属基体表面覆盖层厚度的磁性法和涡流法测量。

与承压设备有关的支承件和结构件的涡流检测，也可参照本部分使用。

Nondestructive testing of pressure equipments—Part 6: Eddy current testing  
This Part of JB/T 4730 specifies the requirements for the testing method and quality classification of eddy current testing (ET) used for pressure equipment.

This Part is applicable to the eddy current testing for the flaws on the surface and slightly subsurface in metallic tubes, parts and welded joints having electric conductivity used for in-process and in-service pressure equipment. It is applicable to the magnetic method and eddy current method of the coating thickness of metal surface.

Eddy current testing of supporting and structural components related to pressure equipment can also be used with reference to this part.



## 27、NB/T 47048—2015 螺旋板式热交换器

本标准螺旋板式热交换器的材料、设计、制造、检验和验收要求。本标准适用于可拆和不可拆螺旋板式换热器。I 型螺旋板式热交换器为不可拆螺旋板式热交换器；II 型（封堵型）和 III 型（贯通型）螺旋板式热交换器为可拆螺旋板式热交换器。

本标准适用于碳素钢、低合金钢、奥氏体不锈钢、奥氏体—铁素体双相不锈钢以及钛（钛合金）制螺旋板式热交换器。

### Spiral Plate Heat Exchanger

This standard stipulates the material, design, manufacture, inspection and acceptance requirements of spiral plate heat exchangers.

This standard is applicable to the non-removable and detachable spiral plate heat exchangers. I type spiral plate heat exchanger is non-removable spiral plate heat exchanger; II type (Plugging type) and III type (Through type) spiral plate heat exchanger are detachable spiral plate heat exchangers.

This standard is applicable to carbon steel, low alloy steel, austenitic stainless steel, austenite-ferrite duplex stainless steel and titanium (titanium alloy) made spiral plate heat exchangers.



## 28、NB/T 47008—2017 承压设备用碳素钢和合金钢锻件

本标准规定了承压设备用碳素钢和合金钢锻件的术语和定义、订货内容、技术要求、试验方法、检验规则以及标志和质量证明书等。

### Carbon and alloy steel forgings for pressure equipment

This standard specifies the terms and definitions, ordering information, technical requirements, test methods, inspection rules, product marking and quality certifications of carbon and alloy steel forgings for pressure equipment.



29、NB/T 47009—2017 低温承压设备用合金钢锻件

本标准规定了低温承压设备用合金钢锻件的术语和定义、订货内容、技术要求、试验方法、检验规则以及标志和质量证明书等。

Alloy steel forgings for low temperature pressure equipment

This standard specifies the terms and definitions, ordering information, technical requirements, test methods, inspection rules, product marking and quality certifications of alloy steel forgings for low temperature pressure equipment.



30、NB/T 47010—2017 承压设备用不锈钢和耐热钢锻件

本标准规定了承压设备用不锈钢和耐热钢锻件的术语和定义、订货内容、技术要求、试验方法、检验规则以及标志和质量证明书等。

Stainless and heat-resisting steel forgings for pressure equipment

This standard specifies the terms and definitions, ordering information, technical requirements, test methods, inspection rules, product marking and quality certifications of stainless and heat-resisting steel forgings for pressure equipment.



31、标准：NB/T 47018.1-2017

承压设备用焊接材料订货技术条件 第1部分：采购通则

本部分适用于承压设备用焊接材料供需双方，根据采购要求编制采购细则。

Technical permission of welding materials for pressure equipment Section 1: General rule of procurement

This part applies to purchase details of welding materials for pressure equipment edited by both sides of supply and demand, according to procurement requirements.



32、标准：NB/T 47018.2-2017

承压设备用焊接材料订货技术条件 第2部分：钢焊条

本部分适用于承压设备用非合金钢及细晶粒焊条、热强钢焊条、高强钢焊条和不锈钢焊条。

Technical permission of welding materials for pressure equipment Section 2: Steel electrodes

This part is applicable to non-alloy steel and fine grain welding rod, heat-resisting steel welding rod, high strength steel welding rod and stainless steel welding rod for pressure equipment.





33、标准：NB/T 47018.3—2017

承压设备用焊接材料订货技术条件 第 3 部分：气体保护电弧焊  
钢焊丝和填充丝

本部分适用于承压设备用气体保护电弧焊用碳钢焊丝和填充丝、  
低合金钢焊丝和填充丝和不锈钢焊丝和填充丝。

Technical permission of welding materials for pressure equipment Section 3: Steel  
electrodes and rods for gas shielded arc welding

This part is applicable to carbon steel welding wire and filling wire, low alloy steel  
welding wire and filling wire and stainless steel welding wire and filling wire for gas  
protection arc welding for pressure equipment.



34、NB/T 47018.4—2017

承压设备用焊接材料订货技术条件 第 4 部分：埋弧焊钢焊丝和  
焊剂

本部分适用于承压设备埋弧焊用钢焊丝和焊剂、低合金钢焊丝和  
焊剂和不锈钢焊丝和焊剂。

Technical permission for ordering of welding materials for pressure equipment Section  
4: Electrodes and fluxes for submerged arc welding

This part is suitable for steel wire and flux, low-alloy steel wire and flux and stainless  
steel wire and flux for submerged arc welding for pressure equipment.



35、GB 30721—2014 水（地）源热泵机组能效限定值及能效等级  
本标准适用于以电动机械压缩式系统并以水为冷（热）源的户用、工商业用和类似用途的水（地）源热泵机组。

Limit values of energy efficiency and energy efficiency grades for water-source (ground-source) heat pumps  
This standard is applicable to household, industrial and commercial water (ground) source heat pump units with electro-mechanical compression system and water as cold (hot) source.



36、GB/T 19409—2013 水（地）源热泵机组  
本标准适用于以电动机械压缩式制冷系统，以循环流动于地埋管中的水或水井、湖泊、河流、海洋中的水或生活污水及工业废水或共用管路中的水为冷（热）源的水源热泵机组。

Water-source (ground-source) heat pumps  
This standard is applicable to water source heat pump units that use electric mechanical compression refrigeration system, water circulating in geographical pipes or Wells, lakes, rivers, oceans or domestic sewage and industrial wastewater or water in common pipes as cold (hot) source.



37、GB/T 10870—2014

蒸气压缩循环冷水（热泵）机组性能试验方法

本标准适用于由电动机驱动的采用蒸气压缩制冷循环的冷水（热泵）机组（以下简称“机组”）的性能试验。冷却塔一体机组、盐水机组、乙二醇机组等可参照执行。

The methods of performance test for water chilling (heat pump) packages using the vapor compression cycle

This standard is applicable to the performance tests of cold water (heat pump) units driven by electric motors with steam compression refrigeration cycle. Cooling tower unit, brine unit, ethylene glycol unit and other units can be used as reference.



38、GB/T 31512—2015 水源热泵系统经济运行

本标准适用于以水为冷（热）源，户用、工商业用和类似用途的电动机械压缩式水源热泵系统。

Economic operation of water-source heat pump systems

This standard is applicable to electromechanical compression type water source heat pump systems with water as cold (hot) source for household, commercial and similar uses.



39、GB/T 31510—2015

远置式压缩冷凝机组冷藏陈列柜系统经济运行

本标准适用于销售和陈列食品的陈列柜系统。

Economic operation of refrigerated display cabinet systems with remote refrigerant compressor condensing units

This standard applies to display cabinet systems for the sale and display of food.



40、GB/T 18837—2015 多联式空调（热泵）机组

本标准适用于使用 GB/T 7778 规定的 A1 类制冷剂的多联式空调（热泵）机组。使用 A2L 类制冷剂的机组及双制冷循环系统和多制冷循环系统可参照本标准。

Multi-connected air-condition (heat pump) unit

This standard is applicable to multi-link air conditioning (heat pump) units using A1 refrigerants specified in GB/T 7778. Units using class A2L refrigerants, double refrigeration cycle systems and multiple refrigeration cycle systems may refer to this standard.



#### 41、GB/T 5773—2016

##### 容积式制冷剂压缩机性能试验方法

本标准适用于单级容积式制冷剂压缩机、配用经济器的容积式制冷剂压缩机和配用闪发器的容积式制冷剂压缩机的性能试验。其他型式的压缩机试验可参照执行。

The method of performance test for positive displacement refrigerant compressors  
This standard is applicable to the performance tests of single-stage refrigerant compressors, volumetric refrigerant compressors with economizers and volumetric refrigerant compressors with flasher. Other types of compressor tests can be carried out with reference.



#### 42、GB/T 18430.2—2016

##### 蒸气压缩循环冷水(热泵)机组 第2部分:户用及类似用途的冷水(热泵)机组

本部分适用于制冷量不大于50kW的户用及类似用途的冷水(热泵)机组。

Water chilling (heat pump) packages using the vapor compression cycle-Part2:Water chilling(heat pump)packages for household and similar application  
This part is suitable for cooling capacity of no more than 50kW household and similar purpose cold water (heat pump) unit.



43、GB/T 18836—2017 风管送风式空调（热泵）机组  
本标准适用于风管送风式空调（热泵）机组。

Ducted air-conditioning (heat pump) units  
This standard is applicable to duct air - conditioning (heat pump) units.



44、GB/T 16665—2017 空气压缩机组及供气系统节能监测  
本标准适用于压缩空气站内排气压力范围 0.3MPa ~ 1.6MPa，  
驱动功率 18.5kW 及以上的电动机驱动的空气压缩机组及供气系  
统。

Monitoring and testing for energy saving of air compressor unit and air distribution  
system  
This standard is applicable to air compressor units and air supply systems driven by  
electric motors of 18.5kW or above with exhaust pressure range of 0.3MPa~1.6MPa  
in compressed air stations.



45、GB/T 9237—2017 制冷系统及热泵 安全与环境要求

- a) 所有大小的固定式或移动式制冷系统，包括热泵；
- b) 二次冷却或加热系统；
- c) 制冷系统的安装场所；
- d) 采用本标准后被替换后的部分或增加的零部件，若其功能和能力前后发生了变化；
- e) 新的制冷系统、原有系统的改进型、变型系统、更换制冷剂的系统以及改变使用地点的旧系统。

Refrigerating systems and heat pumps-Safety and environmental requirements

This standard applies to:

- a) stationary or mobile refrigeration systems of all sizes, including heat pumps;
- b) secondary cooling or heating system;
- c) installation site of refrigeration system;
- d) parts replaced or added after the adoption of this standard, if their functions and capabilities have changed before and after;
- e) the new refrigeration system, the modified and modified system of the original system, the refrigerant replacement system and the old system of changing the use place.



46、GB/T 18429—2018 全封闭涡旋式制冷剂压缩机

本标准适用于全封闭涡旋式制冷剂压缩机。

Fully enclosed scroll refrigerant compressor

This standard is applicable to fully enclosed scroll refrigerant compressors.





#### 47、GB/T 21360—2018 汽车空调用制冷剂压缩机

本标准适用于以 R134a、R407C 为制冷剂的各类型别的汽车空调用制冷剂压缩机。其他车辆或采用其他环保制冷剂的压缩机可参照执行。

##### Refrigerant compressor for automobile air conditioning

This standard is applicable to all kinds of refrigerant compressors for automobile air conditioning with R134a and R407C as refrigerants. For other vehicles or compressors using other environmental friendly refrigerants, please refer to this standard.

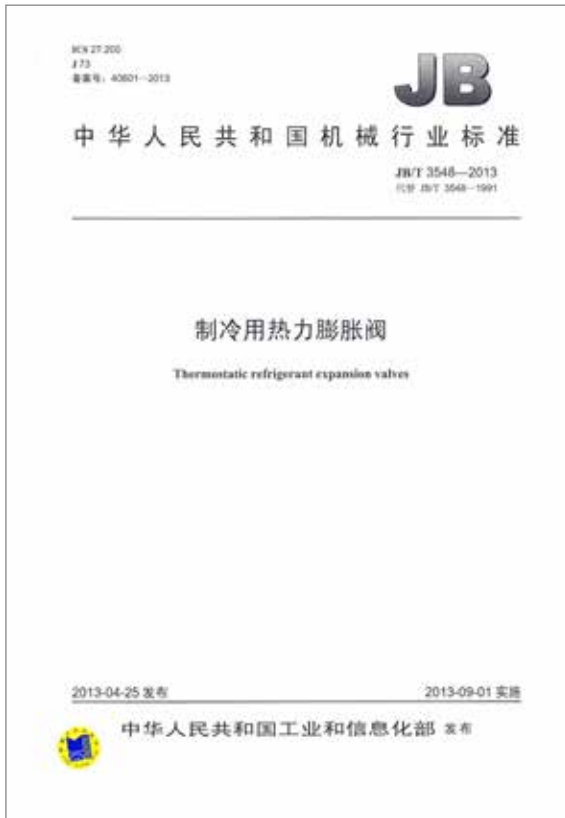


#### 48、JB/T 11524—2013 干式风机盘管机组

本标准适用于外供冷水、热水由风机和盘管组成的机组，对房间直接送风，具有供显冷、供热或分别供显冷和供热功能，其风量在 2500m³/h 以下，出风口静压小于 100 Pa 的机组，以及在干工况条件下运行，仅提供显热的风机盘管机组。

##### Dry fan-coil units

This standard is applicable to the units of external supply of cold water and hot water, which are composed of fan and coil, directly supply air to the room and have the functions of supply of sensible cooling, heating or separately providing sensible cooling and heating. The air volume is below 2500m³/h and the outlet static pressure is less than 100 Pa.



#### 49、JB/T 3548—2013 制冷用热力膨胀阀

本标准适用于蒸发温度为  $-60^{\circ}\text{C} \sim 15^{\circ}\text{C}$ ，制冷剂为 R22、R134a、R404A、R407C、R410A、R507、R290、R32 和 R23 的制冷用热力膨胀阀。使用其他制冷剂的制冷用热力膨胀阀可参照执行。

#### Thermostatic refrigerant expansion valves

This standard is applicable to thermal expansion valves for refrigeration with evaporation temperatures of  $-60^{\circ}\text{C}$  to  $15^{\circ}\text{C}$  and refrigerants R22, R134a, R404A, R407C, R410A, R507, R290, R32 and R23. Thermal expansion valves for refrigeration using other refrigerants may be applied with reference.



#### 50、JB/T 9062—2013 采暖通风与空气调节设备涂装要求

本标准适用于采暖通风与空气调节设备的涂装。

#### The painting requirements for heating ventilation and air-conditioning equipments

This standard applies to the painting of heating, ventilation and air conditioning equipment.

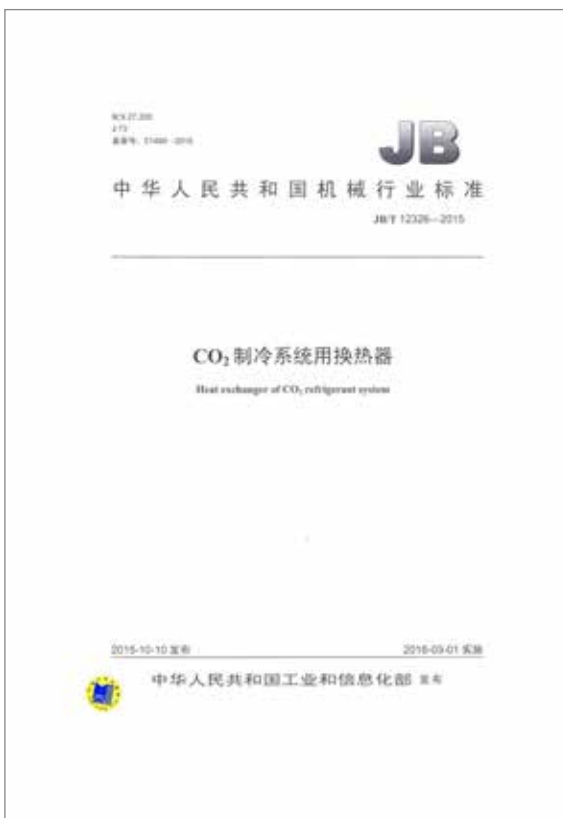


#### 51、JB/T 6411—2014 暖通空调用轴流通风机

本标准适用于叶轮外径 (d) 不大于 2400mm、体积流量范围为  $200\text{m}^3/\text{h} \sim 280000\text{m}^3/\text{h}$ 、静压范围为  $20\text{Pa} \sim 1200\text{Pa}$  的单级轴流通风机。

Axial fan for heating ventilation and air conditioner

This standard is applicable to single-stage axial flow fans whose outer diameter(d) of impeller is no more than 2400mm, whose volume flow range is  $200\text{m}^3/\text{h} \sim 280000\text{m}^3/\text{h}$ , and whose static pressure range is  $20\text{Pa} \sim 1200\text{Pa}$ .



#### 52、JB/T 12326—2015 CO<sub>2</sub> 制冷系统用换热器

本标准适用于以 CO<sub>2</sub> 为制冷剂的制冷系统用换热器。

Heat exchanger of CO<sub>2</sub> refrigerant system

This standard is applicable to heat exchangers for refrigeration system.



### 53、JB/T 12327—2015 预冷式热回收型新风机组

本标准适用于带有预冷装置和机械制冷除湿装置、以冷凝热为再热方式的新风（除湿）机组。

Fresh air units with prepare cooling and heat recovery

This standard is applicable to fresh air (dehumidification) units with precooling devices and mechanical refrigeration dehumidification devices, and with condensation heat as reheat.



### 54、JB/T 9065—2015 制冷空调设备包装通用技术条件

本标准适用于制冷空调设备的运输包装。

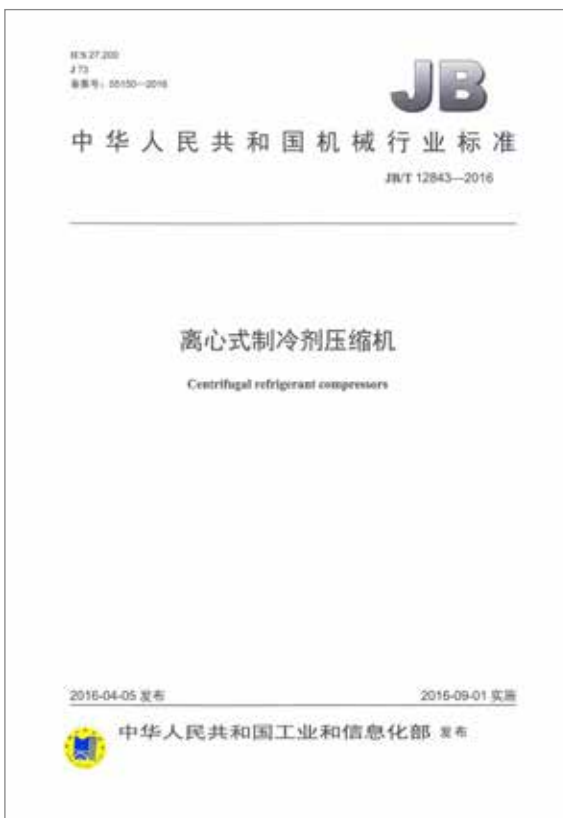
General specification of packing for refrigerating & air-conditioning equipments

This standard is applicable to the transportation and packaging of refrigeration and air conditioning equipment.



55、JB/T 12842—2016 空调系统用辐射换热器  
本标准适用于空调系统用的辐射换热器。

Radiant panel heat exchanger for air-conditioning system  
This standard applies to radiant heat exchangers used in air conditioning system.



56、JB/T 12843—2016 离心式制冷剂压缩机

本标准适用于空调用途的离心式制冷剂压缩机（以下简称压缩机）及离心式制冷剂压缩机组（以下简称压缩机组），其他用途的离心式制冷剂压缩机及离心式制冷剂压缩机组参照执行。

Centrifugal refrigerant compressors

This standard is applicable to centrifugal refrigerant compressors (hereinafter referred to as compressors) and centrifugal refrigerant compression units (hereinafter referred to as compression units) for air conditioning purposes. For centrifugal refrigerant compressors and centrifugal refrigerant compression units for other purposes, please refer to this standard.



#### 57、JB/T 12844-2016 制冷剂回收循环处理设备

本标准适用于以卤代烃单一制冷剂以及含有卤代烃化合物的混合制冷剂为对象的制冷剂回收循环处理设备和制冷剂循环处理设备。

#### Refrigerant recovery and recycling equipment

This standard is applicable to refrigerant recovery and recycling treatment equipment and refrigerant recycling treatment equipment with single refrigerant containing halogenated hydrocarbon and mixed refrigerant containing halogenated hydrocarbon compounds.



#### 58、JB/T 6918-2017

#### 制冷用金属与玻璃烧结液面计和视镜

本标准适用于使用温度为  $-40^{\circ}\text{C} \sim 180^{\circ}\text{C}$ 、设计压力不高于 8.0MPa 的制冷机及其他压力容器用液面计和视镜。

#### The sintered metal and glass visual lens and liquid meter for refrigeration

This standard is applicable to liquid level gauges and sight glasses for refrigerating machines and other pressure vessels with the operating temperature of  $-40^{\circ}\text{C} \sim 180^{\circ}\text{C}$  and the design pressure not higher than 8.0MPa.



#### 59、JB/T 7221—2017 暖通空调用离心通风机

本标准适用于暖通空调系统及各类空调机组用离心通风机。通风机的输送介质为空气或不含腐蚀性及易燃易爆成分的混合气体，介质中应无黏性或纤维性物质，介质含尘量和其他固体杂质含量小于  $80\text{mg}/\text{m}^3$ 。

#### Centrifugal fan for heating ventilation and air conditioner

This standard is suitable for centrifugal fans used in hvac systems and all kinds of air conditioning units. The conveying medium of the ventilator is air or mixed gas without corrosive or inflammable or explosive components. There should be no viscous or fibrous substances in the medium. The dust content and other solid impurities in the medium are less than  $80\text{mg}/\text{m}^3$ .



#### 60、JB/T 7225—2017 暖风机

本标准适用于装配有轴流通风机或离心通风机、盘管热媒为热水或蒸汽的暖风机。其输送介质为空气或不含腐蚀性及易燃易爆成分的混合气体，介质中应无黏性或纤维性物质；介质含尘量和其他固体杂质含量小于  $80\text{mg}/\text{m}^3$ 。

#### Warm air blower

This standard is applicable to heater equipped with axial flow fan or centrifugal fan, coil heat medium is hot water or steam. The conveying medium is air or mixed gas without corrosive or inflammable or explosive components. There should be no viscous or fibrous substances in the medium. The content of dust and other solid impurities in the medium is less than  $80\text{mg}/\text{m}^3$ .





#### 61、JB/T 10503—2017 空调与制冷用高效换热管

本标准适用于制冷空调行业蒸发器、冷凝器以及其他换热器（如发生器、吸收器、油冷却器等）用高效管。材料为钛、不锈钢的高效管可参照执行。

Specification for high performance tubes for air conditioning and refrigeration field service

This standard is applicable to high efficiency tubes for evaporators, condensers and other heat exchangers (such as generators, absorbers, oil coolers, etc.) in the refrigeration and air conditioning industry. For titanium, stainless steel efficient tube, please refer to this standard.



#### 62、GB/T 30475.1—2013

压缩空气过滤器 试验方法 第1部分：悬浮油

本标准适用于凝聚式压缩空气过滤器的性能测试。

Filters for compressed air—Test methods—Part 1: Oil aerosols

This standard is applicable to testing coalescing filters used in compressed-air systems.



63、GB/T 30475.2—2013

压缩空气过滤器 试验方法 第2部分：油蒸气

本标准适用于吸附式压缩空气过滤器的性能测试。

Filters for compressed air—Test methods—Part 2: Oil vapours

This standard is applicable to testing vapour adsorbent filters used in compressed-air systems.



64、GB/T 13279—2015

一般用固定的往复活塞空气压缩机

本标准适用于驱动电动机功率为 18.5kW~560kW、额定排气压力为 0.7MPa ~ 1.25MPa 的固定往复活塞空气压缩机。

Stationary reciprocating air compressors for general use

This standard is applicable to stationary reciprocating air compressor with driving motor power of 18.5kW~560kW and rated exhaust pressure of 0.7MPa~1.25MPa.



#### 65、GB/T 13928—2015 微型往复式空气压缩机

本标准适用于额定功率为 0.18kW ~ 15kW 的电动机或相当功率的内燃机驱动的、额定排气压力不超过 1.4MPa 的空压机。本标准也适用于额定功率为 18.5kW、额定排气压力为 0.5MPa 的空压机。

#### Reciprocating minitype air compressors

This standard is applicable to air compressor driven by electric motor with rated power of 0.18kW~15kW or an internal combustion engine with equivalent power and rated exhaust pressure not exceeding 1.4MPa. This standard is also applicable to air compressor with rated power of 18.5kW and rated exhaust pressure of 0.5MPa.



#### 66、GB/T 15487—2015 容积式压缩机流量测量方法

本标准适用于容积式压缩机流量的测量。

#### Methods of flow measurement for displacement compressor

This standard is applicable to flow measurement for displacement compressor.



67、GB/T 13277.2-2015

压缩空气 第2部分：悬浮油含量测量方法

本标准适用于一般用压缩空气系统中的含油量测量，含油测量范围为  $0.001\text{mg}/\text{m}^3 \sim 40\text{mg}/\text{m}^3$ 。

Compressed air—Part 2: Test methods for oil aerosol content

This standard is applicable to measurement of oil aerosols and liquid oil that can typically be present in compressed air, the measuring range of oil content is  $0.001\text{mg}/\text{m}^3 \sim 40\text{mg}/\text{m}^3$ .



68、GB/T 13277.3-2015 压缩空气 第3部分：湿度测量方法

本标准适用于压缩空气中以水蒸气状态存在的水分的测量。

Compressed air—Part 3: Test methods for measurement of humidity

This standard is applicable to measurement of humidity in compressed air.



69、GB/T 13277.4-2015 压缩空气 第4部分：固体颗粒测量方法

本标准适用于压缩空气中固体颗粒的计数测量。

Compressed air—Part 4: Test methods for solid particle content  
This standard is applicable to measurement of solid particle content in compressed air, expressed as the number of solid particle in respective size classes.



70、GB/T 33625-2017

机车、动车用全无油润滑往复活塞空气压缩机

本标准适用于机车、动车升弓系统用额定排气压力不超过1.0MPa的全无油润滑往复活塞空气压缩机。

Oil-free reciprocating air compressors on locomotives and power cars  
This standard is applicable to oil-free reciprocating air compressors with rated exhaust pressure not exceeding 1.0MPa for bow lifting systems of locomotives and motor cars.



## 71、GB/T 4976—2017 压缩机 分类

本标准适用于输送和压缩各种压力下气体介质的压缩机的分类。

## Compressors—Classification

This standard is applicable to classifications of compressor for conveying and compressing gas medium under various pressures.



## 72、GB/T 30475.3—2017

## 压缩空气过滤器 试验方法 第3部分：颗粒

本标准适用于去除颗粒的压缩空气过滤器的性能测试。

## Filters for compressed air—Test methods—Part 3: Particulates

This standard is applicable to testing particulate filters used in compressed-air systems.



73、GB/T 30475.4-2017

压缩空气过滤器 试验方法 第4部分：水

本标准适用于去除压缩空气中呈管壁流的液态水的气/水分离器、除水过滤器等除水装置的性能测试。

Filters for compressed air—Test methods—Part 4: Water

This standard is applicable to testing any device designed for water removal used in compressed-air systems.



74、GB/T 3853-2017 容积式压缩机 验收试验

本标准适用于各类容积式压缩机的验收试验

Displacement compressors—Acceptance tests

This standard is applicable to acceptance tests of displacement compressors.





75、GB/T 4974—2018

空压机、凿岩机械与气动工具 优先压力

本标准适用于空压机、凿岩机械与气动工具的优先压力。

Air compressors, rock drilling machines and pneumatic tools—Preferred pressures  
This standard is applicable to preferred pressures of air compressors, rock drilling machines and pneumatic tools.



76、GB/T 4975—2018 容积式压缩机术语 总则

本标准适用于各种容积式压缩机术语。

Displacement compressors vocabulary—General rule  
This standard is applicable to vocabulary of displacement compressors.



77、JB/T 2231.1—2013

往复活塞压缩机零部件 第1部分: 轴、销外径尺寸

本部分适用于往复活塞式压缩机主轴颈、曲柄销、十字头销、活塞销和活塞杆等零件的外径尺寸。

Reciprocating piston compressor part-subassembly—Part 1: External diameters of shaft and pin

This section is applicable to external diameters of reciprocating piston compressor main journal, crank pin, crosshead pin, piston pin and piston rod.



78、JB/T 2231.2—2013

往复活塞压缩机零部件 第2部分: 气缸直径

本部分适用于往复活塞空气压缩机及其他往复活塞气体压缩机的气缸直径。

Reciprocating piston compressor part-subassembly—Part 2: Cylinder diameters

This section is applicable to cylinder diameters of reciprocating piston air compressor and other reciprocating piston gas compressor.



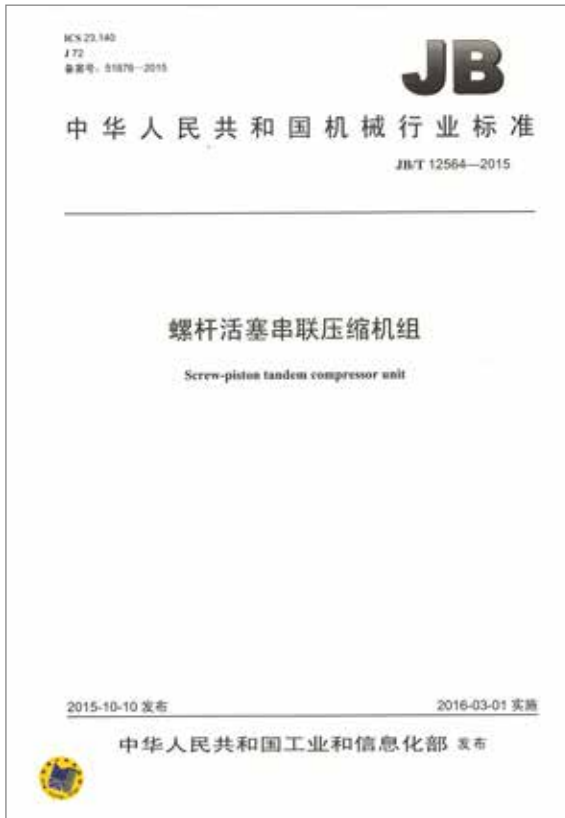
79、JB/T 8541-2013 容积式压缩机机械振动分级  
本标准适用于压缩机的机械振动烈度的分级评定。

Mechanical vibration rating of displacement compressor  
This standard is applicable to mechanical vibration rating evaluation of displacement compressor



80、JB/T 8934-2013 直联便携式往复活塞空气压缩机  
本标准适用于由输入功率为 0.25kW ~ 3.0kW 的单相电动机驱动的、额定转速大于或等于 1300r/min 及额定排气压力不超过 1.0MPa 的直联便携式往复活塞空气压缩机。

Direct drive portable reciprocating piston air compressor  
This standard is applicable to direct drive portable reciprocating piston air compressor driven by single-phase motor with input power of 0.25kW-3.0kW, rated speed greater than or equal to 1300r/min and rated exhaust pressure not exceeding 1.0MPa.



#### 81、JB/T 12564—2015 螺杆活塞串联压缩机组

本标准适用于电动机驱动的固定式和撬装式，压缩介质为空气，冷却方式为水冷，驱动电动机总功率不大于 1000kW，额定排气压力不大于 45MPa 的串联机组。

#### Screw-piston tandem compressor unit

This standard is applicable to tandem compressor unit with stationary type and skid-mounted type driven by electric motor, compressed medium is air, cooling mode is water cooling, total power of driving motor is not more than 1000kW, rated exhaust pressure is not more than 45MPa.



#### 82、JB/T 12566—2015 核电用隔膜压缩机 技术条件

本标准适用于额定排气压力不大于 15MPa、公称容积流量不大于 55m<sup>3</sup>（标态）/h 的隔膜压缩机，超出该范围的隔膜压缩机可参照执行。

#### Diaphragm compressor for nuclear power plant—Technical specifications

This standard is applicable to technical specifications of diaphragm compressor with rated exhaust pressure no more than 15MPa and nominal volume flow rate no more than 55m<sup>3</sup> (standard state) /h, The diaphragm compressor beyond this range can be executed by reference.



#### 83、JB/T 2589—2015 容积式压缩机 型号编制方法

本标准适用于容积式压缩机的型号编制方法。

Displacement compressors—Methods for model designation

This standard is applicable to methods for model designation of displacement compressors.



#### 84、JB/T 12951—2016 往复活塞压缩机气量无级调节装置

本标准适用于石油、化工及动力等领域由电—液驱动控制并采用部分行程顶开吸气阀方式的往复活塞压缩机用气量无级调节装置。

Stepless capacity adjustment systems of reciprocating compressors

This standard is applicable to stepless capacity adjustment systems of reciprocating compressors controlled by electro-hydraulic drive and taking the method of pressing-off inlet valve in partial stroke in petroleum, chemical and power fields.



85、JB/T 12948—2016 粉粒输送用干式螺杆空气压缩机

本标准适用于驱动功率为 30kW ~ 315kW、额定排气压力为 0.2MPa ~ 0.3MPa 的螺杆空压机。

Dry screw air compressors for bulk solid pneumatic conveying  
This standard is applicable to screw air compressor with driving power of 30kW~315kW and rated exhaust pressure of 0.2MPa~0.3MPa.



86、JB/T 13341—2017 螺杆空气压缩机机头 技术条件

本标准适用于功率不为 2.2kW~630kW、额定排气压力不大于 1.25MPa 的机头技术条件。

Bare screw air compressors—Specifications  
This standard is applicable to specifications of bare screw air compressors with air as compressed medium, consumed power no more than 630kW and rated exhaust pressure no more than 1.25MPa.



#### 87、JB/T 13342—2017 螺杆空气压缩机机头 试验方法

本标准适用于压缩介质为空气、消耗功率不大于 630kW、额定排气压力不大于 1.25MPa 的机头。

#### Bare screw air compressors—Test method

This standard is applicable to test method of bare screw air compressors with air as the compressed medium, consumed power no more than 630kW and rated exhaust pressure no more than 1.25MPa.



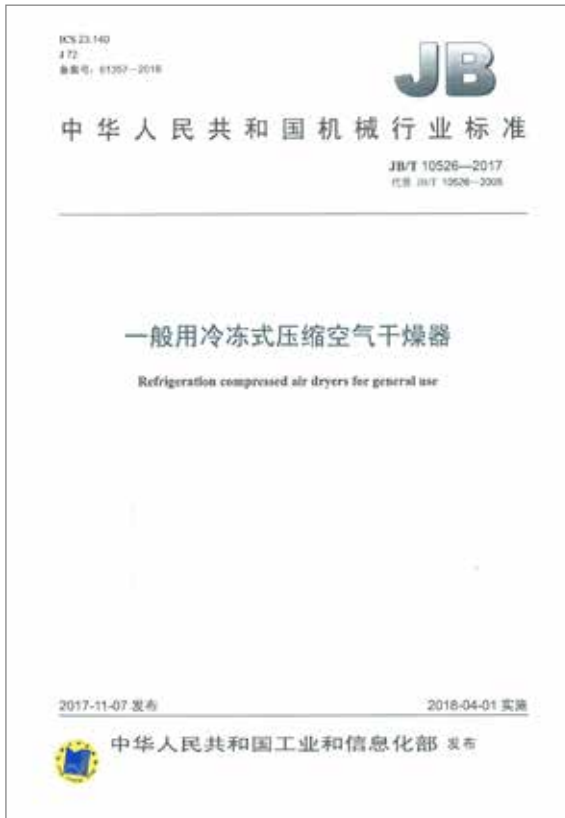
#### 88、JB/T 13344—2017 往复活塞压缩机主要零部件 曲轴

本标准适用于石油、化工、动力及气体工业等领域的驱动机功率不小于 55kW 的往复活塞式压缩机曲轴。

#### Main components of reciprocating compressors—Crankshafts

This standard is applicable to crankshafts of reciprocating compressors with driving power not less than 55 kW.





89、JB/T 10526—2017 一般用冷冻式压缩空气干燥器

本标准适用于工作压力为 0.4MPa ~ 1.6MPa 的一般用冷冻式压缩空气干燥器。

Refrigeration compressed air dryers for general use

This standard is suitable for general refrigeration compressed air dryer with working pressure ranging from 0.4 MPa to 1.6 MPa.



90、JB/T 10532—2017 一般用吸附式压缩空气干燥器

本标准适用于工作压力为 0.4MPa ~ 1.6MPa 的一般用吸附式压缩空气干燥器。

Adsorption compressed air dryers for general use

This standard is suitable for general adsorption compressed air dryer with working pressure ranging from 0.4 MPa to 1.6 MPa.



#### 91、NB/T 42027—2013 螺杆膨胀机 承压铸钢件技术规范

本标准规定了螺杆膨胀机承压铸钢件（承压铸钢件包括机壳体、前端座、后端座、主汽阀、蒸汽调节阀等）的订货要求、技术要求、试验和检验方法、标识、合格证书及表面防护、包装、运输和贮存等。

Technical Specification for Pressure Retaining Castings of Screw Expander

This standard specifies the order requirements, technical requirements, test and inspection methods, identification, certificate of qualification and surface protection, packaging, transportation and storage of pressure retaining castings of screw expander (pressure retaining castings of screw expander includes shell, front seat, back seat, main steam valve, steam regulating valve, etc.).

This standard is applicable to the order, manufacture and inspection for pressure retaining castings of screw expander.



#### 92、GB/T 30177.1—2013

过滤机性能测试方法 第1部分：加压过滤机

本部分适用于固液分离用加压过滤机。

Methods of performance testing for filters—Part 1: Press filter

This part is applicable to a press filter for solid-liquid separation.



### 93、GB/T 7780—2016 过滤机 型号编制方法

本标准规定了工业用过滤机的型号编制方法。  
本标准适用于工业用过滤机型号的编制。

#### Filters—Model designation

This standard specifies the model compilation method of industrial filter.  
This standard is applicable to the compilation of industrial filter models.



### 94、GB/T 7779—2018 离心机 型号编制方法

本标准规定了工业用离心机（不包括试管离心机）的型号编制方法。  
本标准适用于工业用离心机型号的编制。

#### Centrifuge—Model designation

This standard specifies the model preparation method for industrial centrifuge (excluding test tube centrifuge).  
This standard is applicable to the preparation of the model of industrial centrifuge.



95、标准：GB/T 7781—2018 分离机 型号编制方法

本标准规定了碟式分离机、管式分离机和室式分离机型号编制方法。

本标准适用于碟式分离机、管式分离机和室式分离机型号的编制。

Separator—Model designation

This standard specifies the model compilation method of disc separator, tubular separator and chamber separator.

This standard is suitable for the compilation of disc separator, tube separator and chamber separator.



96、GB/T 36522—2018

分离机械用电气控制系统 通用技术要求

本标准适用于分离机械用电气控制系统。

Electrical controlling system for separation machinery-General technology requirements

This standard is applicable to electrical control systems for separation machinery.



#### 97、JB/T 10411—2014

##### 离心机、分离机不锈钢锻件超声检测及质量评级

本标准规定了离心机、分离机不锈钢锻件的超声检测方法及其缺陷等级评定。

本标准适用于以脉冲反射式超声检测检验法对转鼓及环形、筒形和轴形奥氏体不锈钢、双相不锈钢锻件进行超声检测，钛合金锻件可参照本标准执行。

Ultrasonic inspection and quality estimation for stainless steel forging of centrifuge and separator

This standard specifies the ultrasonic inspection and quality estimation for stainless steel forging of centrifuge and separator. This standard is applicable to ultrasonic testing of rotary drum and ring, cylindrical and shaft-shaped austenitic stainless steel and duplex stainless steel forgings with a pulse-reflection ultrasonic test method, and the titanium alloy forging can be carried out with reference to this standard.



#### 98、JB/T 12819—2016 翻袋式自动卸料离心机

本标准适用于翻袋式自动卸料离心机。

Automatic inverting filter centrifuge

This standard is suitable for automatic inverting filter centrifuge.



99、GB/T 7785—2013 往复泵分类和名词术语

本标准规定了往复泵常用的分类和名词术语。

本标准适用于往复泵设计、制造、贸易、制定其他相关标准、编写有关技术文件与报告、编写或翻译书籍文献、教材、样本及进行技术交流。

Classification and vocabulary for reciprocating pump

This standard defines the common classification and terminology of reciprocating pumps.

This standard applies to reciprocating pump design, manufacture, trade, formulation of other related standards, compilation of relevant technical documents and reports, compilation or translation of books, literature, teaching materials, samples and technical exchanges.



100、GB/T 34391—2017 石油、石化和天然气工业用往复泵

本标准规定石油、石化和天然气工业中使用的往复式泵和泵机组，适用于直动式和机动式两种形式。

本标准不适用计量泵和旋转式泵。

Reciprocating positive displacement pumps for petroleum, petrochemical and natural gas industries

This standard specifies for reciprocating pumps and pump sets used in the petroleum, petrochemical, and natural gas industries, and applies to both direct-acting and motorized pumps.

This standard does not apply to metering pumps and rotary pumps.



#### 101、GB/T 9234—2018 机动往复泵

本标准规定了机动往复泵的信息确认、要求、试验和检验、交付准备、标志、包装和贮存。

本标准适用于输送介质为不含颗粒的清水、含油污水、乳化液、原油及其石油制品、煤制油品、化工液体，额定排出压力至 100MPa；流量至 630m<sup>3</sup>/h；温度 5℃～160℃；运动粘度不超过 850mm<sup>2</sup>/s 的泵。

#### Power reciprocating pump

This standard specifies information validation, requirements, testing and inspection, delivery preparation, marking, packaging and storage for motor reciprocating pumps. This standard is applicable to water, oily sewage, emulsion, crude oil and its petroleum products, coal-based oil and chemical liquids with the conveying medium free of particles, with the rated discharge pressure up to 100MPa. Flow to 630 m<sup>3</sup> cubed /h; Temperature 5℃～160℃; Pump with kinematic viscosity not exceeding 850mm<sup>2</sup>/s.



#### 102、GB/T 7784—2018 机动往复泵试验方法

本标准规定了机动往复泵试验的实施、参数测量、数据处理、性能曲线的绘制、试验报告。

本标准包括了两种测量精度等级：1 级适用于较高精度的试验，2 级适用于一般精度的试验，两种测量精度等级包含了不同的容差系数值、容许波动值和测量误差限。

本标准既适用于不带任何管路附件的泵本身，也适用于带有管路附件的泵的组合体。

#### Test methods for power reciprocating pump

This standard specifies the implementation of motor reciprocating pump test, parameter measurement, data processing, performance curve drawing, test report. This standard includes two levels of measurement accuracy: level 1 for more precise tests, and level 2 for general tests. The two levels of measurement accuracy include different tolerance coefficient values, allowable fluctuation values and measurement error limits.

This standard applies to the pump itself without any piping attachments, and also to the assembly of pumps with piping attachments.





### 103、JB/T 8099—2013 转子式稠油泵

本标准规定了转子式稠油泵的型号与基本参数、技术要求、试验方法、检验规则、标志、包装、运输和贮存。

#### Rotary viscous oil pumps

This standard specifies the model and basic parameters, technical requirements, test methods, inspection rules, marks, packaging, transportation and storage of rotor heavy oil pumps.

This standard is suitable for transfer of heavy oil medium rotor pump.



### 104、JB/T 6909—2014 超高压泵

本标准规定了超高压泵的类型与基本参数、技术要求、试验方法、检验规则、标志、包装和贮存。

本标准适用于额定排出压力为 100MPa~1000MPa 的机动往复泵和液动超高压增压器，输送介质为常温清水或油品，工作环境温度为常温、相对湿度不大于 85% 的场合。

#### Ultra-high pressure pump

This standard specifies the type, basic parameters, technical requirements, test methods, inspection rules, marking, packaging and storage of ultra-high pressure pumps. This standard is applicable to the rated discharge pressure of 100MPa-1000MPa mobile reciprocating pump and hydraulic super high pressure supercharger, conveying medium is normal temperature water or oil, working environment temperature is normal temperature, relative humidity is not more than 85% occasions.



#### 105、JB/T 8697—2014 隔膜泵

本标准规定了隔膜泵的型号与基本参数、要求、试验方法、检验规则、标志、包装和贮存。

本标准适用于输送温度为 $5^{\circ}\text{C} \sim 120^{\circ}\text{C}$ 、粘度为 $0.3\text{mm}^2/\text{s} \sim 850\text{mm}^2/\text{s}$ 、粒度 $\leq 8\text{mm}$ 、浓度 $\leq 75\%$ 介质的机动液压式、气动式及机械式隔膜泵。

#### Diaphragm pump

This standard specifies the diaphragm pump model and basic parameters, requirements, test methods, inspection rules, marking, packaging and storage. This standard is applicable to motorized hydraulic, pneumatic and mechanical diaphragm pumps with conveying temperature of  $5^{\circ}\text{C} \sim 120^{\circ}\text{C}$ , viscosity of  $0.3\text{mm}^2/\text{s} \sim 850\text{mm}^2/\text{s}$ , particle size  $\leq 8\text{mm}$ , concentration  $\leq 75\%$  medium.



#### 106、JB/T 9087—2014 油田用往复式油泵、注水泵

本标准规定了油田用往复式油泵、注水泵的型号与基本参数、要求、试验方法、检验规则、标志、包装和贮存。

本标准适用于输送温度不高于 $95^{\circ}\text{C}$ 、运动粘度不超过 $0.850\text{Pa}\cdot\text{s}$ 、机械杂质含量不超过 $30\text{mg}/\text{L}$ 、固体颗粒粒径不大于 $15\mu\text{m}$ 、含水量不大于 $2\%$ 的原油及输送温度不高于 $95^{\circ}\text{C}$ 、总矿化度不大于 $30000\text{mg}/\text{L}$ 的油田污水或清水的往复式油泵或注水泵。

#### Reciprocating pump for crude oil, water injection used in oil field

This standard specifies the type and basic parameters, requirements, test methods, inspection rules, marking, packaging and storage of reciprocating pumps and injectors for oilfield use.

This standard is applicable to reciprocating oil pump or injection pump whose conveying temperature is no higher than  $95^{\circ}\text{C}$ , kinematic viscosity no more than  $0.850\text{Pa}\cdot\text{s}$ , mechanical impurity content no more than  $30\text{mg}/\text{L}$ , solid particle size no more than  $15\mu\text{m}$ , water content no more than  $2\%$ , conveying temperature no higher than  $95^{\circ}\text{C}$ , total salinity no more than  $30000\text{mg}/\text{L}$  of oilfield sewage or water.



#### 107、JB/T 9090—2014 容积泵零部件液压与渗漏试验

本标准规定了容积泵零部件液压与渗漏试验项目、试验方法和技术要求及试验结果评定。

本标准适用于容积泵（以下简称泵）中承受流体压力高于0.1MPa的零部件的液压试验以及器皿类零部件和阀组静密封的渗漏试验。

Hydrastatic and leakage tests for positive displacement pump components

This standard specifies the hydraulic and leakage test items, test methods, technical requirements and test results evaluation of positive displacement pump parts. This standard is applicable to the hydraulic test of positive displacement pump (hereinafter referred to as "pump") parts bearing fluid pressure higher than 0.1MPa, as well as the leakage test of static sealing of vessel parts and valve sets.



#### 108、JB/T 6910—2015 微量计量泵

本标准规定了微量计量泵的类型与基本参数、技术要求、试验方法、检验规则、标志、包装和贮存。

本标准适用于输送温度为 $-30^{\circ}\text{C} \sim 60^{\circ}\text{C}$ 、黏度 $0.3\text{mm}^2/\text{s} \sim 100\text{mm}^2/\text{s}$ 、流量 $\leq 5000\text{mL/h}$ ，不含固体颗粒的腐蚀与非腐蚀液体的微量柱塞计量泵、微量隔膜计量泵、微量平流计量泵和微量电磁计量泵。

Small flow metering pump

This standard specifies the type and basic parameters, technical requirements, test methods, inspection rules, marking, packaging and storage of micrometering pumps. This standard is applicable to micro plunger metering pump, micro diaphragm metering pump, micro horizontal flow metering pump and micro electromagnetic metering pump with conveying temperature of  $-30^{\circ}\text{C} \sim 60^{\circ}\text{C}$ , viscosity of  $0.3\text{mm}^2/\text{s} \sim 100\text{mm}^2/\text{s}$ , flow rate  $\leq 5000\text{mL/h}$ , and no corrosion of solid particles and non-corrosive liquids.



109、JB/T 8543—2015

泵产品零件无损检测 泵受压铸钢件射线检测

本标准规定了泵受压铸钢件的 x、γ 射线检测方法和铸钢件的缺陷等级分类。

本标准适用于厚度 5mm ~ 300 mm 泵受压铸钢件采用胶片记录被检工件的射线检测；配套的管件和法兰等受压铸钢件的射线检测也可参照本标准执行。

Nondestructive testing method for pump parts Radiographic testing method compression steel casting for pump

This standard provides x and γ ray detection methods and defect classification of steel castings under pump pressure. This standard is applicable to the radiographic testing of steel castings with pump pressure of 5mm ~ 300 mm with film recording of the inspected workpiece. The radiographic testing of steel castings with pressure such as pipes and flanges can also be carried out according to this standard.



110、JB/T 12582—2015 泵产品零件无损检测 渗透检测

本标准规定了对工件表面开口缺陷的渗透检测方法（包括荧光法和着色法）和缺陷等级分类。

本标准适用于金属材料制成的泵产品零件的表面开口缺陷的检测。

Nondestructive testing method for pump parts—Penetrant testing

This standard specifies the method of penetration detection (including fluorescence and staining) and the classification of defect grades for open defects on workpiece surfaces. This standard is applicable to the detection of surface opening defects of pump parts made of metal materials.



#### 111、JB/T 11366—2013 机场跑道除胶设备

本标准规定了机场跑道除胶设备的型式与基本参数、技术要求、试验方法、检验规则、标志、包装、运输和贮存。

本标准适用于额定排除压力为 100 MPa ~ 250MPa，主机泵额定功率为 110 kW ~ 275kW，工作介质为常温清水，集主泵机组、平面清洗器和专用车为一体的各种型式的路面式机场跑道除胶设备。

#### Airport runway rubber-removal cleaning vehicle

This standard specifies the types and basic parameters, technical requirements, test methods, inspection rules, marks, packaging, transportation and storage of the airport runway rubber removal equipment. This standard is applicable to various types of airport runway rubber removal equipment with rated relief pressure of 100 MPa~250MPa, rated power of main engine pump of 110 kW~275kW, working medium of normal temperature clean water, main pump unit, plane washer and special vehicle as one.



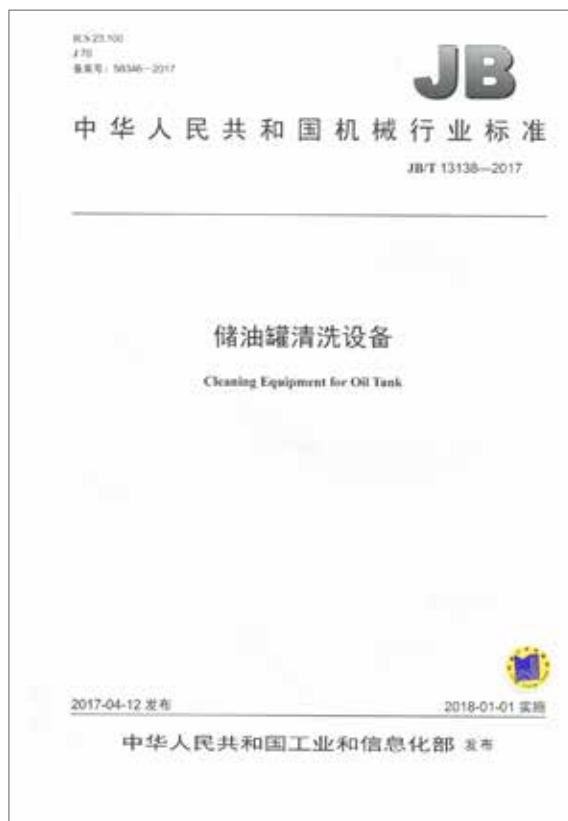
#### 112、JB/T 12491—2015 喷射设备名词术语

本标准规定了喷射设备常用的名词术语。

本标准适用于喷射设备的设计、制造、贸易，制定其他相关标准，编写有关技术文件与报告，编写或翻译书籍文献、教材、样本以及进行技术交流。

#### Terminology for jet equipment

This standard specifies common terminology for jet equipment. This standard applies to the design, manufacture, trade, formulation of other relevant standards, preparation of relevant technical documents and reports, compilation or translation of books, literature, teaching materials, samples, and technical exchange of jet equipment.



### 113、JB/T 13138—2017 储油罐清洗设备

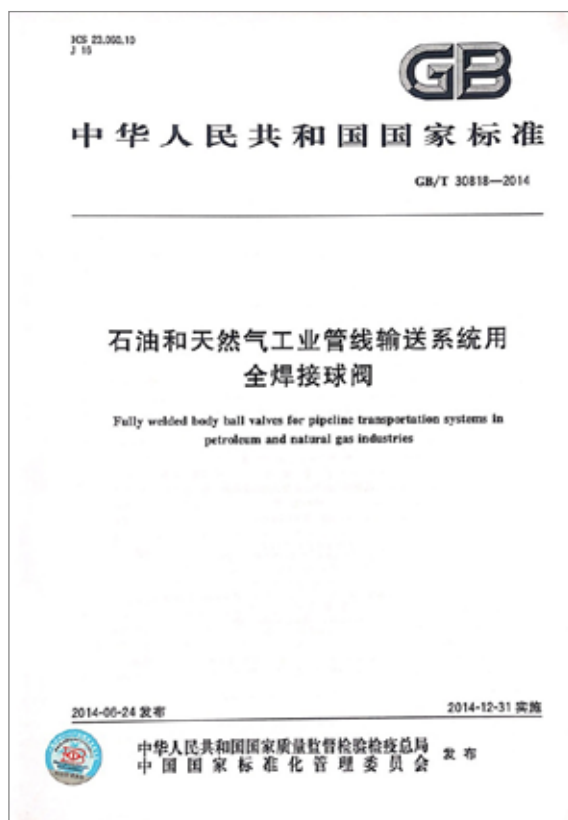
本标准规定了储油罐清洗设备的成套型式、基本参数与技术要求、试验方法、检验规则、标志、包装、运输和贮存。

本标准适用于大型储油罐清洗设备的设计、制造、检验验收和质量评定等。

#### Cleaning Equipment for Oil Tank

This standard specifies the complete type, basic parameters and technical requirements, test methods, inspection rules, marks, packaging, transportation and storage of oil tank cleaning equipment.

This standard is applicable to the design, manufacture, inspection and acceptance, and quality assessment of large storage tank cleaning equipment.



### 114、GB/T 30818—2014

#### 石油和天然气工业管线输送系统用全焊接球阀

本标准规定了石油和天然气工业管线输送系统用全焊接球阀的术语和定义、结构型式和参数、技术要求、材料、试验方法和检验规则、标志、包装和储运。

本标准适用于公称压力 PN16 ~ PN160 或 Class150 ~ Class900、公称尺寸 DN50 ~ DN1500 或 NPS2 ~ NPS60；介质为原油、成品油和天然气；管线输送系统用的法兰连接和焊接连接全焊接球阀。

#### Fully welded body ball valves for pipeline transportation systems in petroleum and natural gas industries

This standard specifies the terms and definitions, structural types and parameters, technical requirements, inspection and test method, inspection rules and marking, packing and storage and transportation of compressed natural gas cylinder valve for vehicle.

This standard is applicable to PN16~PN160 or Class150~Class900, DN50~DN1500 or NP2~NPS60; The medium is crude oil, refined oil and natural gas; Flange and welding connection welded ball valve used for pipeline transportation system.



115、GB/T 30832—2014 阀门 流量系数和流阻系数试验方法  
本标准规定了阀门流量系数和流阻系数试验的术语和定义、试验装置和测量仪表、试验要求、试验程序、计算和试验报告。

本标准适用于：

- a) 以水为介质的阀门、管道过滤器等产品的流量—压力损失、流量系数和流阻系数的试验；
  - b) 被试验产品的流阻系数值  $\zeta$  大于 0.1 的。
- 其他类似阀门和管件的流量—压力损失、流量系数、流阻系数的试验可参照本标准的方法进行试验。

Valves—Test method of flow coefficient and flow resistance coefficient

This standard specifies the terms and definitions of valve flow coefficient and flow resistance coefficient tests, test devices and measuring instruments, test requirements, test procedures, calculations and test reports.

This standard is applicable to:

- a) tests on flow-pressure loss, flow coefficient and flow resistance coefficient of water-based valves, pipeline filters and other products;
  - b) the flow resistance coefficient value  $\zeta$  of the tested product is greater than 0.1.
- The flow-pressure loss, flow coefficient and flow resistance coefficient of other similar valves and fittings can be tested by referring to the method of this standard.



116、GB/T 12220—2015 工业阀门 标志

本标准规定了工业阀门的标志内容和标记方法。

本标准适用于工业金属阀门。如果阀门产品标准与本标准不一致时，以阀门产品标准中要求为准。

其他阀门可参照执行。

Industries valves—Marking

This standard specifies the marking contents and methods of industrial valves.

This standard is applicable to industrial metal valves. If the valve product standard is inconsistent with this standard, It shall be in accordance with the requirements of valve product standards.

Other valves can also be used with reference to this standard.





## 117、GB/T 32290—2015 供水系统用弹性密封轻型闸阀

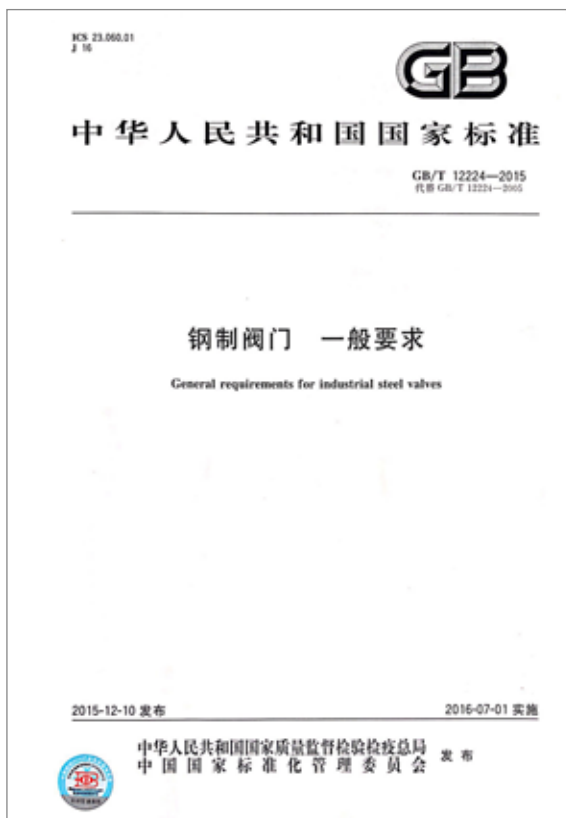
本标准规定了供水系统用弹性密封轻型闸阀（以下简称闸阀）的术语和定义、结构型式、技术要求、试验方法、检验规则、标志、供货要求和质量保证书。

本标准适用于球墨铸铁制弹性密封轻型闸阀。适用范围为公称压力不大于 PN16；介质为水，水温范围 1℃～80℃；阀门全开时介质流速不超过 4.9m/s；公称尺寸 DN50～DN1200 的暗杆型闸阀和公称尺寸 DN50～DN600 的明杆型闸阀。

Reduced-wall, resilient-seated gate valves for water supply service

This standard specifies the terms and definitions, structural types, technical requirements, test methods, inspection rules, marks and supply requirements etc. of Reduced-wall, Resilient-seated gate valves for water supply service (herein after referred to as gate valves).

This standard applies to ductile iron elastic sealing gate valves. The applicable scope is that the nominal pressure is no more than PN16; The medium is water, and the water temperature ranges from 1°C to 80°C. When the valve is fully opened, the medium flow rate shall not exceed 4.9m/s; inside screw gate valves with nominal sizes DN50-DN1200 and outside screw gate valves with nominal sizes DN50-DN600.



## 118、GB/T 12224—2015 钢制阀门 一般要求

本标准规定了钢制阀门的压力—温度额定值、材料、设计要求、检验与试验、标志和对特殊压力级阀门及限定压力级阀门的要求等内容。

本标准适用于承压件采用表 1A 和表 1B 给出的材料；阀体采用铸造、锻造滚压、轧制和组焊加工；法兰、螺纹和焊连接，以及对夹式和用于单法兰安装的阀门。本标准包括公称压力为 Class 系列和 PN 系列的阀门。本标准适用的钢制阀门参数范围为：

- a) Class 系列阀门的压力等级为 Class150～Class4500，其中 Class4500 仅适用于焊接连接阀门；PN 系列阀门的压力等级为 PN2.5～PN400；
- b) 法兰连接阀门的公称尺寸不大于 DN1250；
- c) 承插焊接阀门和螺纹连接阀门的公称尺寸不大于 DN65；
- d) 螺纹连接阀门的额定温度不大于 538℃，压力等级不大于 Class2500；
- e) 法兰连接阀门仅适用于标准压力级，不适用于特殊压力级和限定压力级阀门；
- f) 法兰连接阀门没有中间压力等级。

General requirements for industrial steel valves

This standard specifies the pressure-temperature ratings, material, design requirements, inspection and test, marking and requirements for special pressure valves and valves with limited pressure.

This standard applies to the materials listed in Tables 1A and 1B for pressure-containing parts. The valve body is cast, forged, rolled, rolled and welded. Flanged, threaded and welded connections, and wafer type and valves for single flange installation. This standard includes valves with nominal pressures of Class series and PN series. The parameter range of steel valves applicable to this standard is:

- a) The Class designation series valves is Class 150-Class4500, of which Class 4500 is only applicable to welded connection valves;
- PN designation series valves have a pressure rating of PN 2.5-PN400;
- b) nominal size of flanged connection valve shall not be greater than DN1250;
- c) nominal size of socket welded valve and threaded connection valve shall not be greater than DN65;
- d) the rated temperature of threaded connection valve is no more than 538°C, and the Class designation is no more than Class2500;
- e) Flanged valves are only applicable to standard pressure, not to special pressure and limited pressure valves;
- f) Flanged valves have no intermediate pressure rating.



#### 119、GB/T 32808—2016 阀门 型号编制方法

本标准规定了阀门的型号编制方法、代号表示方法、型号编制示例。

本标准适用于各类阀门的型号编制，阀门类型包括：闸阀、截止阀、节流阀、蝶阀、球阀、止回阀、控制阀（调节阀）、隔膜阀、旋塞阀、排污阀、柱塞阀、减压阀、蒸汽疏水阀、排气阀、安全阀、堵阀（电站用）、其他特殊用途的阀（如氧气用阀、加氢装置用阀）等。

##### Valves—Model designation method

This standard specifies the model designation method, coding method and model preparation example of valves. This standard is applicable to the model designation of all kinds of valves. The valve types include: gate valve, globe valve, throttle valve, butterfly valve, ball valve, check valve, control valve (regulating valve), diaphragm valve, plug valve, drain valve, plunger valve, pressure reducing valve, steam trap, exhaust valve, safety valve, blocking valve (for power station), other special purpose valves (such as oxygen valve and hydrogenation device valve), etc.



#### 120、GB/T 13932—2016 铁制旋启式止回阀

本标准规定了铁制旋启式止回阀的结构型式和基本参数、技术要求、试验方法、检验规则、标志和供货要求。

本标准适用于公称压力 PN2.5 ~ PN25, 公称尺寸 DN50 ~ DN1800, 介质为水, 法兰连接的灰铸铁和球墨铸铁制旋启式止回阀。

##### Cast iron swing check valves

This standard specifies the structural type and basic parameters, technical requirements, test methods, marking and delivery of cast iron swing check valves. This standard is applicable to gray iron and ductile flanged cast iron swing check valves and with nominal pressure PN2.5~PN25, nominal size DN50~1800, and working medium is water.



#### 121、GB/T 12225—2018 通用阀门 铜合金铸件技术条件

本标准规定了铜合金铸件的铸件分级、铸件牌号、标记方法和代号、技术要求、检验方法和检验规则以及标志、包装、运输和贮存。

本标准适用于砂型铸造和金属型铸造（非压力铸造）的阀门及管件的铜合金铸件。

#### General purpose industrial valves —Specification of copper alloy castings

This standard specifies the classification of copper alloy castings, casting grades, marking methods and codes, technical requirements, inspection methods and rules, as well as marking, packaging, transportation and storage.

This standard is applicable to copper alloy castings for valves and pipe fittings in sand mold casting and metal mold casting (non-pressure casting).



#### 122、JB/T 8692—2013 烟道蝶阀

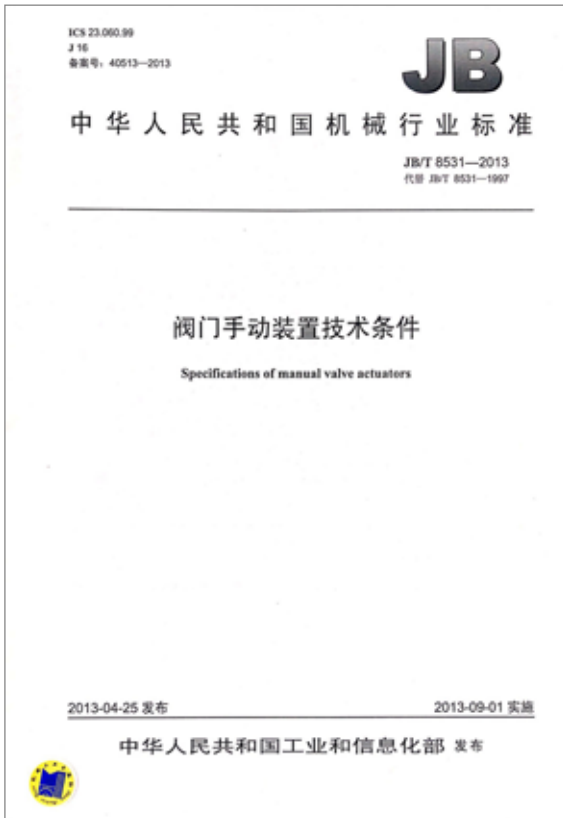
本标准规定了烟道蝶阀的结构型式、型号和基本参数、技术要求、试验方法、检验规则、标志、包装、运输、贮存和供货等要求。

本标准适用于公称压力不大于 PN6、公称尺寸 DN100 ~ DN6000，适用温度不大于 600℃，介质为空气、含尘烟气和工业煤气等截流和调节流量用的法兰连接烟道蝶阀（以下简称蝶阀）。

#### Butterfly valves for gas flue

This standard specifies the structural types, model and parameters, technical requirements, test methods, inspection rules, marking, packaging, storage and supply requirements etc. of butterfly valves for gas flue.

This standard is applicable to flanged butterfly valves for gas flue (hereinafter referred to as butterfly valves) with nominal pressure not greater than PN6, nominal size DN100~DN6000, applicable temperature not greater than 600℃, and medium of air, dusty flue gas and industrial gas for flow interception and regulation.



### 123、JB/T 8531—2013 阀门手动装置 技术条件

本标准规定了阀门手动装置（以下简称手动装置）的技术要求、试验方法、检验规则、标志、包装、运输和贮存。

本标准适用于人力通过蜗杆副、齿轮副等减速传动，直接操作的闸阀、截止阀、节流阀、隔膜阀、球阀和蝶阀等阀门用多回转和部分回转手动装置。

#### Specifications of manual valve actuators

This standard specifies the technical requirements, test methods, inspection rules, marking, packaging, transportation and storage of manual valve actuators (hereinafter referred to as "manual actuators").

This standard is applicable to multi-turn and partial-turn manual devices for valves such as gate valve, globe valve, throttle valve, diaphragm valve, ball valve and butterfly valve that are directly operated by manpower through reduction transmission of worm gears and gear pairs



### 124、JB/T 5299—2013 液控止回蝶阀

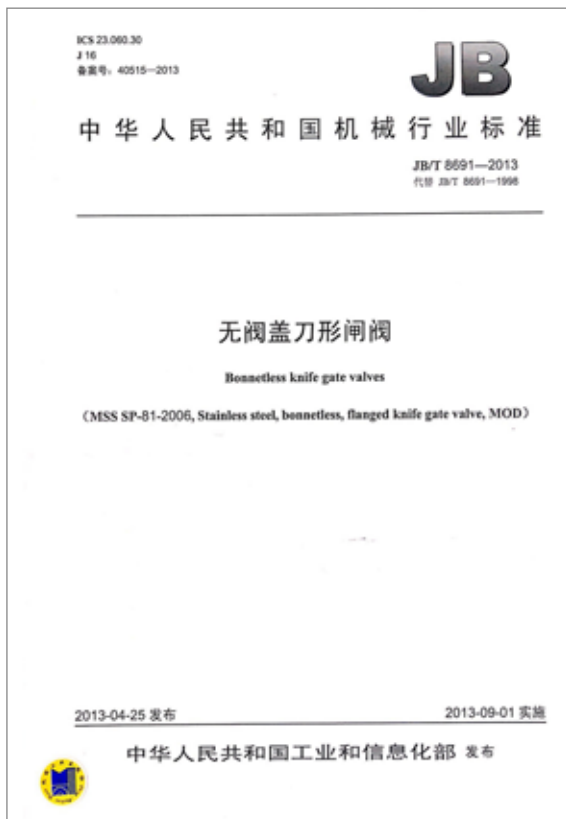
本标准规定了液控止回蝶阀的结构型式、技术要求、试验方法、检验规则、标志、包装、贮存和运输。

本标准适用于公称尺寸 DN300 ~ DN4000，公称压力 PN2.5 ~ PN40，工作介质为水及其他液体介质，安装在具有变速止回和截断需求的管路上，法兰连接的液控止回蝶阀。

#### Hydraulic control check butterfly valves

This standard specifies structural types, technical requirements, test methods, inspection rules, marking, packaging, transport and storage of hydraulic control check butterfly valves.

This standard is applicable to flanged hydraulic control check butterfly valves with nominal size DN 300~DN 4000, nominal pressure PN 2.5~PN40, working medium is water and other liquid medium, installed on pipelines with variable speed check and block requirements.



#### 125、JB/T 8691—2013 无阀盖刀型闸阀

本标准规定了无阀盖刀形闸阀的术语和定义、参数与结构、型号、材料、技术要求、试验方法、检验规则、标志、供货与包装和订货需知。

本标准适用于额定压力 0.25MPa、0.6MPa、1.0MPa，公称尺寸 DN50 ~ DN900，工作温度 0℃ ~ 200℃，工作介质为含颗粒或粉末等固体的流体，对夹式连接无阀盖刀型闸阀。

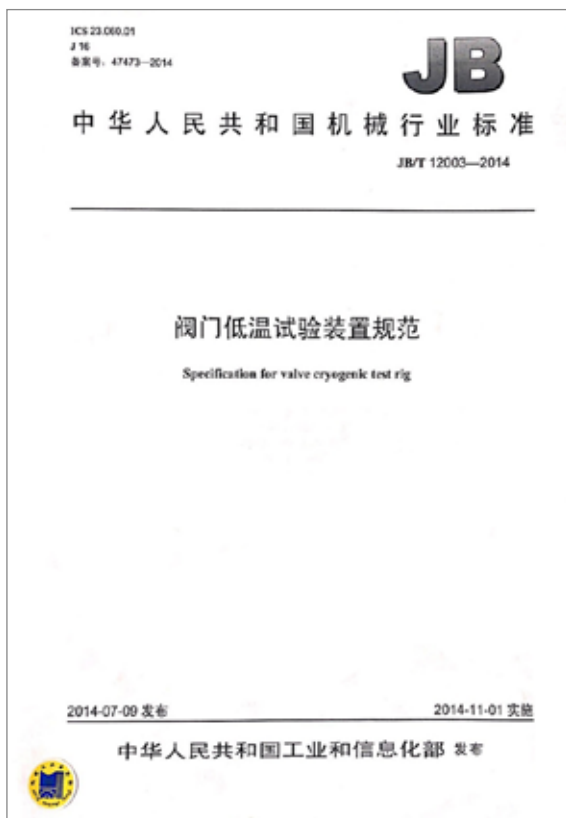
阀门不适用于存在冲击载荷工况。

#### Bonnetless knife gate valves

This standard specifies the terms and definitions, parameters and structural types, models, materials, technical requirements, test methods, inspection rules, marking supply and packaging, order requirement of bonnetless knife gate valves.

This standard is applicable to the rated pressure of 0.25MPa, 0.6MPa, 1.0MPa, nominal size DN50 ~ DN 900, working temperature of 0℃ ~ 200℃, working medium is fluid containing solid such as particles or powder, wafer type connection bonnetless knife gate valve.

The valve is not suitable for working conditions with impact load.



#### 126、JB/T 12003—2014 阀门低温试验装置规范

本标准规定了阀门低温试验装置的术语和定义、结构形式、技术要求、操作程序等。

本标准适用于阀门低温试验装置。其受试阀门的范围为：公称压力 PN16 ~ PN420，公称尺寸 DN15 ~ DN900，介质温度 -29℃ ~ -196℃ 的法兰、对夹和焊接连接的低温闸阀、截止阀、止回阀、球阀和蝶阀。

#### Specification for valve cryogenic test rig

This standard specifies the terms and definitions, structural types, technical requirements, operating procedures of cryogenic valve test equipment and so on.

This standard is applicable to low temperature test device for valves. The scope of the tested valve is as follows: nominal pressure PN16~PN 420, nominal size DN15 ~ DN 900, medium temperature -29℃ to -196℃, low temperature gate valve, globe valve, check valve, ball valve and butterfly valve connected by flanged, clamped and welded.



#### 127、JB/T 12006—2014 钢管焊接球阀

本标准规定了钢管焊接球阀的术语和定义、典型结构、技术要求、试验方法、检验规则、标志、防护、包装和贮运。

本标准适用于公称尺寸 DN15 ~ DN50，公称压力不大于 PN40；公称尺寸 DN65 ~ DN600，公称压力不大于 PN25；适用温度为 0℃ ~ 150℃，适用介质为水、蒸汽的钢管焊接球阀。

#### Steel pipe welded ball valve

This standard specifies terms and definitions, typical structures, technical requirements, test method, inspection rules, marking, packing, storage and transportation.

This standard is applicable to nominal sizes DN15~DN50, and nominal pressure is no more than PN40; Nominal size DN65~DN 600, nominal pressure not greater than PN25; The applicable temperature is 0℃ ~150℃, and the applicable medium is water and steam.



#### 128、JB/T 7928—2014 工业阀门 供货要求

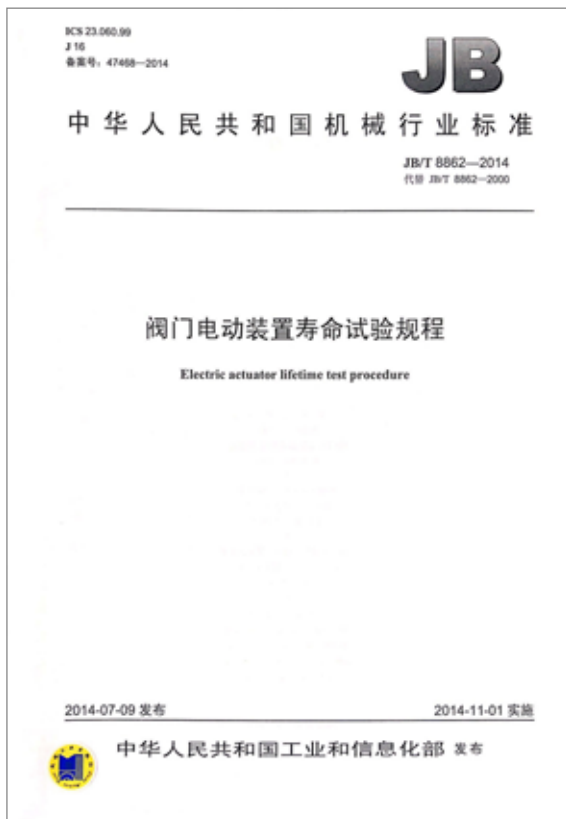
本标准规定了工业阀门供货的一般要求、表面防护涂层、标志、包装、贮存和质量保证。

本标准适用于工业管道和设备用阀门。

#### Industrial valves — Delivery specification

This standard specifies the general requirements for the delivery of industrial valves, surface protective coatings, marking, packaging, storage and quality assurance.

This standard is applicable to valves for industrial pipelines and equipments.

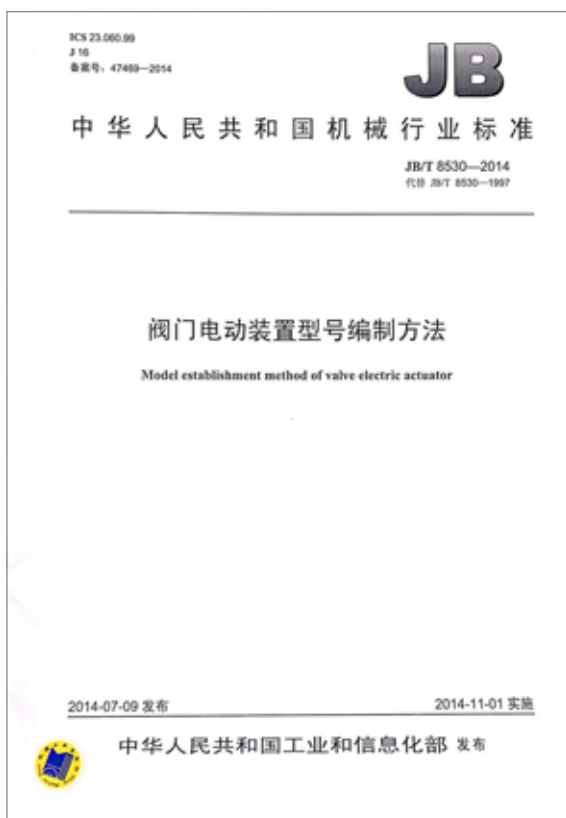


129、JB/T 8862—2014 阀门电动装置寿命试验规程

本标准规定了阀门电动装置寿命试验的术语和定义、试验要求、测试项目、试验方法、试验报告和试验记录。  
本标准适用于阀门电动装置的整机寿命试验。

Lifetime test procedure for electric actuator

This standard specifies the terms and definitions, test requirements, test items, test methods, test reports and test records for electric actuator lifetime test.  
This standard is applicable to the life test of valve electric actuators.



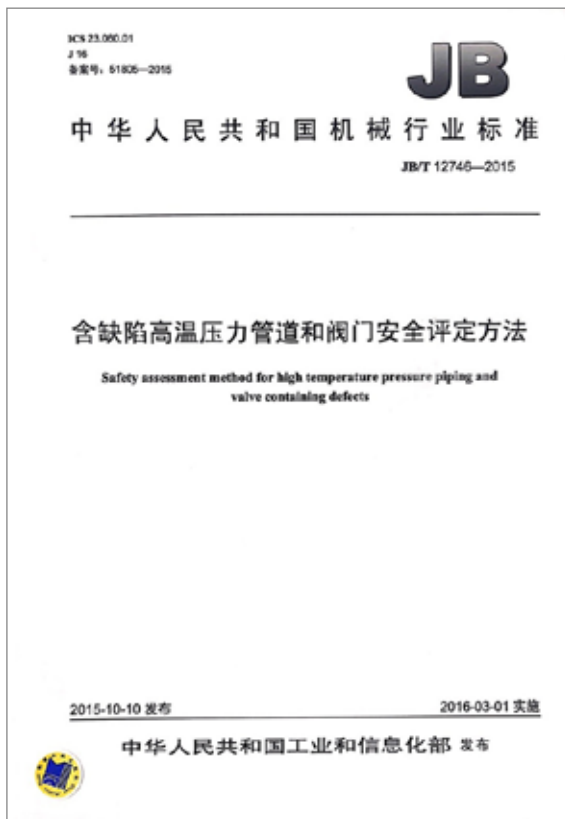
130、JB/T 8530—2014 阀门电动装置型号编制方法

本标准规定了阀门电动装置的型号编制方法。  
本标准适用于阀门用电动装置的型号编制。

Model establishment method of valve electric actuator

This standard specifies model establishment method of valve electric actuator  
This standard is applicable to the model designation of electric actuator for valves.





131、JB/T 12746—2015 含缺陷高温压力管道和阀门安全评定方法

本标准规定了含缺陷高温压力管道和阀门安全评定方法的术语、总论、安全评定流程和基本步骤、弹性应力分析、免于蠕变失效分析的判断、参考应力和应力强度因子的计算、持久断裂寿命的计算、蠕变裂纹扩展的计算、细化评估过程、评估结论与报告。

本标准适用于高温蠕变范畴下压力管道和阀门中检出的裂纹类平面缺陷的安全评定，确定被评定对象在给定的加载条件和预期的服役寿命期间内裂纹类平面缺陷是否会扩展到不可接受的程度。

本标准考虑了脆性断裂、塑性垮塌、持久断裂、蠕变裂纹萌生、蠕变裂纹扩展失效模式，不考虑疲劳及蠕变—疲劳的交互作用。含符合平面类缺陷条件的未熔合、未焊透的高温压力管道和阀门的安全评定可参照本标准。

Safety assessment method for high temperature pressure piping and valve containing defects

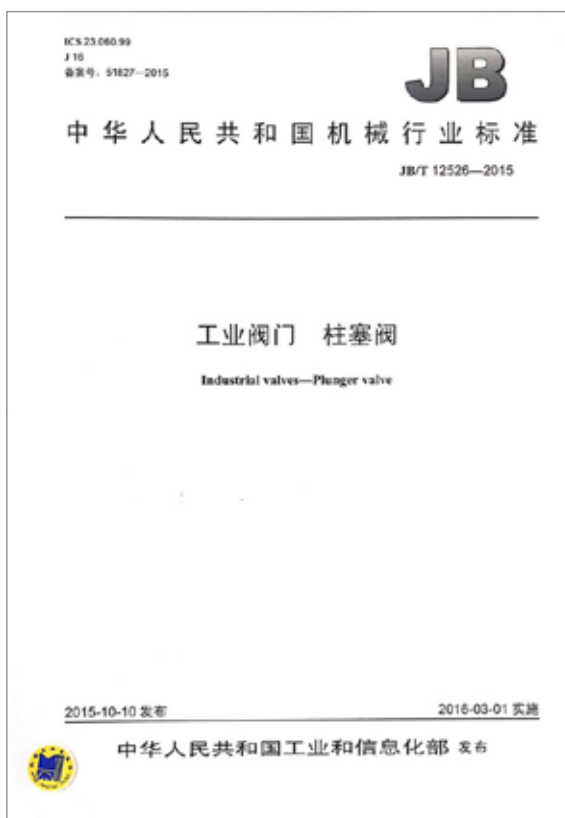
This standard specifies the terms, general principles, safety assessment procedures and basic steps of safety assessment methods for high-temperature pressure piping and valves containing defects, elastic stress analysis, judgment of avoiding creep failure analysis, calculation of reference stress and stress intensity factor, calculation of permanent fracture life, calculation of creep crack propagation, detailed assessment process, assessment conclusion and report.

This standard is applicable to the safety assessment of crack-like plane defects detected in pressure piping and valves under the category of high-temperature creep, and determines whether the crack-like plane defects of the assessed object will expand to an unacceptable degree within the given loading conditions and expected service life.

This standard considers brittle fracture, plastic collapse, permanent fracture, creep crack initiation and creep crack propagation failure modes, and it does not consider fatigue and creep-fatigue interaction.

For safety assessment of high-temperature pressure piping and valve with incomplete fusion and incomplete penetration that meet the conditions of plane defects, please refer to this standard.

This standard is not applicable to the safety assessment of pressure piping and valve in nuclear power plants that are exposed to nuclear radiation.



132、JB/T 12526—2015 工业阀门 柱塞阀

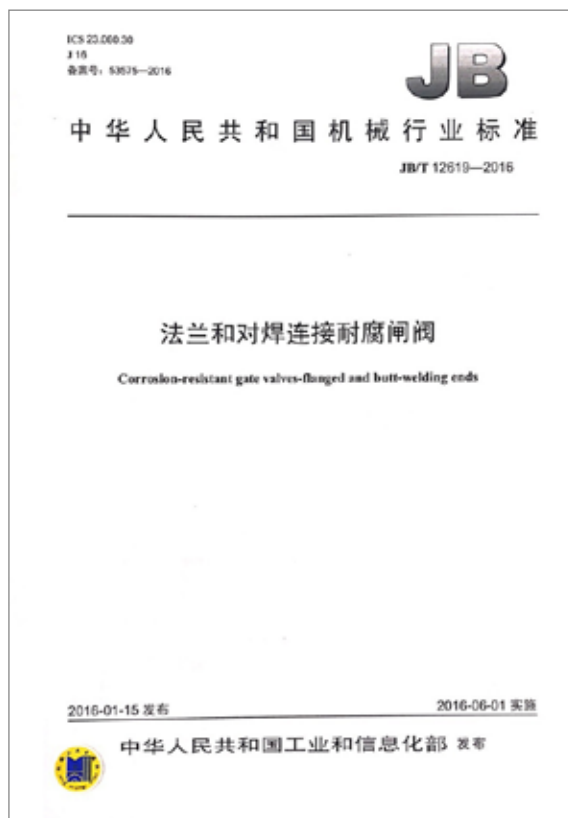
本标准规定了柱塞阀的结构型式、技术要求、材料、试验方法、检验规则、标志、包装、运输、贮存。

本标准适用于公称压力 PN10 ~ PN40，公称尺寸 DN15 ~ DN300，工作温度 1℃ ~ 300℃，工作介质为蒸汽、气体等非腐蚀性介质的工业用柱塞阀。

Industrial valves - Plunger valve

This standard specifies product structural types, technical requirements, materials, testing method, inspection rules, marking, packaging, transportation and storage for plunger valve.

This standard is applicable to plunger valves with nominal pressure PN10~PN40, nominal size DN15~DN 300, working temperature 1℃ ~300℃, and non-corrosive working medium such as steam and gas.



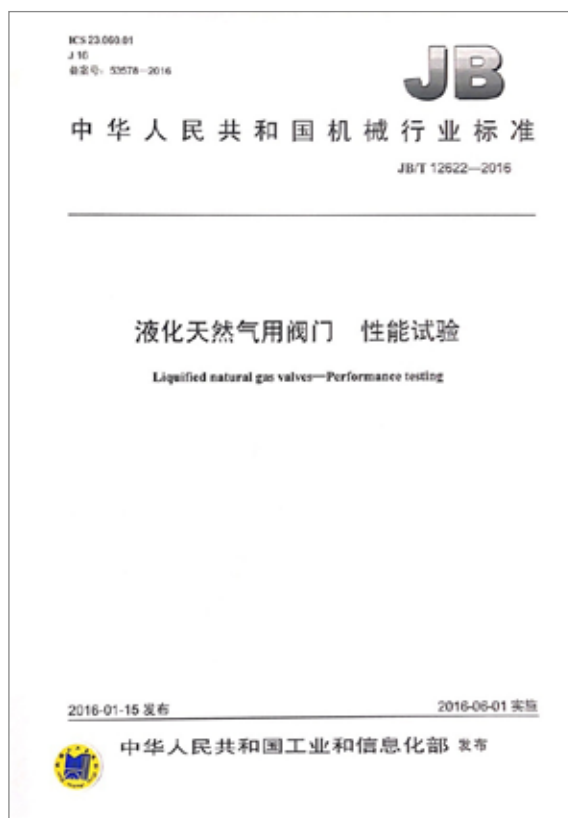
## 133、JB/T 12619—2016 法兰和对焊连接耐腐闸阀

本标准规定了工艺管道应用中的全通径耐腐闸阀的压力—温度额定值、设计、材料、试验方法和检验规则、标志、供货等。本标准适用于公称压力 Class150 ~ Class600 (PN20 ~ PN100)，公称尺寸 DN15 ~ DN600，以螺栓（或螺柱）连接阀盖，明杆支架形式，升降阀杆，非升降手轮，楔式或平行式，单闸板或双闸板，阀座为金属表面，法兰或对焊连接为特征的闸阀。适用介质为石油和石油相关制品、天然气、蒸汽等。

## Corrosion-resistant gate valves-flanged and butt-welding ends

This standard specifies the pressure-temperature rating, design, materials, test methods, inspection rules, marks, supply, etc. of full port corrosion-resistant gate valves used in process pipeline applications.

This standard is applicable to gate valves with nominal pressure Class 150~Class 600 (PN20~PN100), nominal size DN15~DN 600, bolted bonnet, outside screw and yoke, rising stem, non-rising hand wheel, wedge or parallel type, single or double gate, metallic seating surfaces, flanged or butt welding ends. Suitable medium are petroleum and petroleum-related products, natural gas, steam, etc.



## 134、JB/T 12622—2016 液化天然气用阀门 性能试验

本标准规定了液化天然气用阀门性能试验的术语和定义、试验项目、常温性能试验、低温性能试验、试验方法、试验程序以及泄漏率等要求。

本标准适用于公称压力 PN16 ~ PN250、公称尺寸 DN15 ~ DN1200 和压力等级 Class 150 ~ Class 1500、公称尺寸 NPS1/2 ~ NPS48，工作介质为液化天然气的法兰和焊接连接的闸阀、截止阀、止回阀、球阀和蝶阀。

其它类型的阀门亦可参照使用。

## Liquefied natural gas valves—Performance testing

This standard specifies the terms and definitions, test items, normal temperature performance tests, low temperature performance tests, test methods, test procedures, leakage rates and other requirements for valve performance tests used for liquefied natural gas.

This standard is applicable to nominal pressure PN16~PN 250, nominal size DN15~DN1200, Class designation Class150~Class 1500, nominal size NPS1/2~NPS 48. The working medium is liquefied natural gas for flanged and welded gate valve, globe valve, check valve, ball valve and butterfly valve.

Other types of valves can also be used for reference to this standard.



### 135、JB/T 12625—2016 液化天然气用球阀

本标准规定了液化天然气用球阀的结构型式、技术要求，试验方法、检验规则、标志、包装及储运。

本标准适用于公称压力 PN16 ~ PN250，公称尺寸 DN15 ~ DN700，压力等级 Class150 ~ Class1500，公称尺寸 NPS1/2 ~ NPS28，工作介质为液化天然气的法兰和焊接连接球阀。

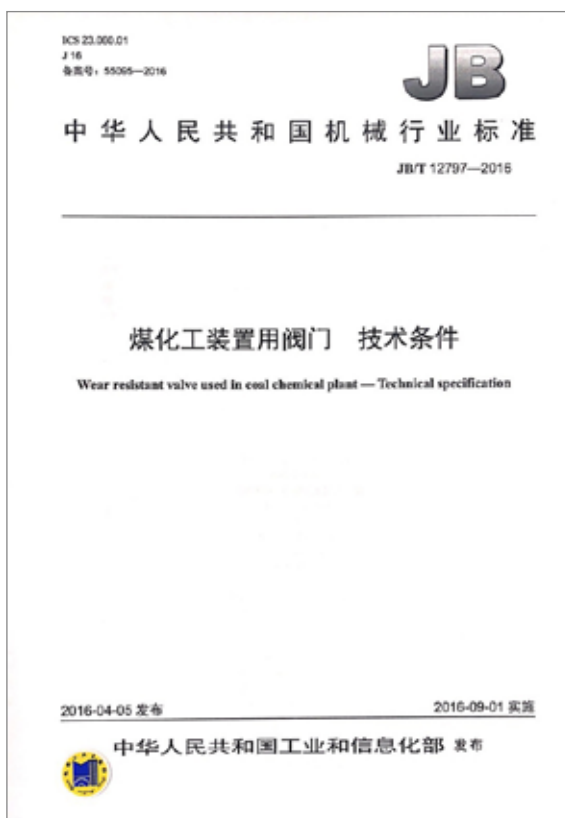
其他温度高于 -162℃ 的低温球阀亦可参照使用。

Ball valves for liquefied natural gas

This standard specifies structural types, technical requirements, test methods, inspection rules, marking, packaging and storage.

This standard is applicable to flanged and welded ball valves with nominal pressure PN16~PN 250, nominal size DN15~DN 700, class 150~Class 1500, nominal size NP S1/2~NPS 28 and the working medium is liquefied natural gas.

Other low-temperature ball valves with temperatures higher than -162℃ can also be used with reference to this standard.



### 136、JB/T 12797—2016 煤化工装置用阀门 技术条件

本标准规定了煤化工装置用耐磨阀门的术语和定义、技术要求、材料、试验方法、检验规则、标志、防护和包装。

本标准适用于煤化工装置用耐磨阀门，其适用的范围为：公称压力 PN16 ~ PN250，公称尺寸 DN25 ~ DN600；压力等级 Class150 ~ Class1500，公称管径 NPS1 ~ NPS24；使用温度 -29℃ ~ 538℃；适用介质为黑水、灰水、煤浆、煤渣、煤粉、飞灰的金属密封球阀、偏心半球阀、止回阀、旋塞阀等。

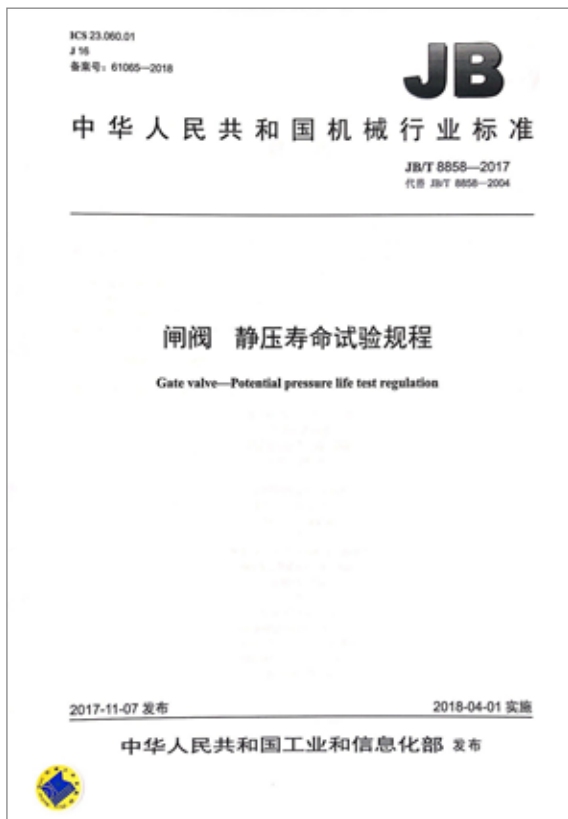
其它类似用途阀门可参照执行。

Vale used in coal chemical equipment technical specification

This standard specifies terms and definitions, technical requirements, test methods, inspection rules, marking, protection and packaging.

This standard is applicable to wear-resistant valves for coal chemical plant, and its applicable scope is as follows: nominal pressure PN16~PN 250, nominal size DN25~ DN600; Class 150~Class 1500, nominal pipe size NPS1~NPS24; working temperature is -29℃~538℃; Suitable medium are black water, grey water, coal slurry, coal cinder, pulverized coal, fly ash metal sealed ball valve, eccentric semi-ball valve, check valve, plug valve, etc.

Other valves for similar purposes can also be used with reference to this standard.



137、JB/T 8858-2017 闸阀 静压寿命试验规程

本标准规定了闸阀静压寿命试验的术语和定义、技术要求、试验方法以及静压寿命试验次数的确定。

本标准适用于闸阀的静压寿命试验。

Gate valve-Potential pressure life test regulation

This standard specifies the terms and definitions, technical requirements, test methods and determination of the number of potential pressure life tests for gate valves.

This standard is applicable to the potential pressure life test of gate valves.



138、JB/T 8859-2017 截止阀 静压寿命试验规程

本标准规定了截止阀静压寿命试验的术语和定义、技术要求、试验方法以及静压寿命试验次数的确定。

本标准适用于截止阀的静压寿命试验。

Globe valve-Potential pressure life test regulation

This standard specifies the terms and definitions, technical requirements, test methods and determination of the number of potential pressure life tests for globe valves.

This standard is applicable to the potential pressure life test of globe valves.



### 139、JB/T 8860—2017 旋塞阀 静压寿命试验规程

本标准规定了旋塞阀静压寿命试验的术语和定义、技术要求、试验方法以及静压寿命试验次数的确定。

本标准适用于旋塞阀的静压寿命试验。

Plug valve-Potential pressure life test regulation

This standard specifies the terms and definitions, technical requirements, test methods and determination of the number of potential pressure life tests for plug valves.

This standard is applicable to the potential pressure life test of plug valves.



### 140、JB/T 8861—2017 球阀 静压寿命试验规程

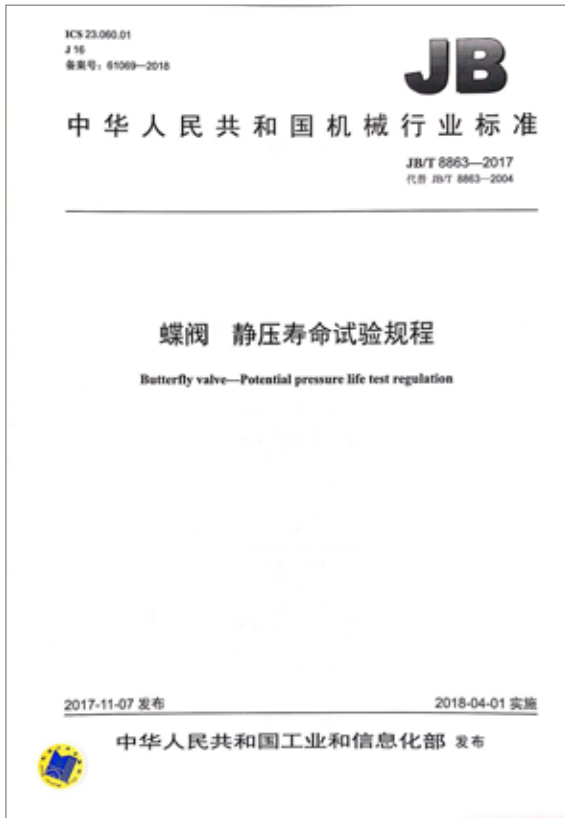
本标准规定了球阀静压寿命试验的术语和定义、技术要求、试验方法以及静压寿命试验次数的确定。

本标准适用于各类型球阀的静压寿命试验。

Ball valve-Potential pressure life test regulation

This standard specifies the terms and definitions, technical requirements, test methods and determination of potential pressure life test times for ball valves.

This standard is applicable to potential pressure life test of various ball valves.



#### 141、JB/ T 8863—2017 蝶阀 静压寿命试验规程

本标准规定了蝶阀静压寿命试验的术语和定义、技术要求、试验方法以及静压寿命试验次数的确定。

本标准适用于密封型蝶阀（非金属—金属、金属—金属密封副）的静压寿命试验。

butterfly valve-Potential pressure life test regulation

This standard specifies the terms and definitions, technical requirements, test methods and determination of the number of potential pressure life tests for butterfly valves.

This standard is applicable to potential pressure life test of sealed butterfly valves (nonmetal-metal, metal-metal sealing pair).



#### 142、GB/T 5894—2015 机械密封名词术语

本标准规定了机械密封及类型、零件、流体及循环辅助系统、常用设计、试验及性能等术语。

本标准适用于旋转轴用机械密封。

Terminology of mechanical seal

This standard specifies the terms of mechanical seals and types, parts, fluid, circulation system, design, test and performance.

This standard is applicable to mechanical seals for rotating shafts.



143、GB/T 6556—2016

机械密封的型式、主要尺寸、材料和识别标志

本标准规定了离心泵及类似旋转机械用机械密封的型式和主要尺寸、识别标志和材料代号。

本标准适用于单端面、双端面机械密封。

Type, main dimension, material and marking of mechanical seals

This standard specifies the type, main dimensions, material and marking of mechanical seals for centrifugal pumps and similar rotating machinery.

This standard is applicable to single and dual mechanical seal.



144、GB/T 10444—1989 机械密封产品型号编制方法

本标准规定了机械密封产品型号编制方法及有关规定。

本标准适用于各类机械密封产品。

Method of type establishment for mechanical seals

This standard specifies the method of type establishment for mechanical seals.

This standard is applicable to all kinds of mechanical seal products.





#### 145、GB/T 33509—2017 机械密封通用规范

本规范规定了机械密封术语和定义、密封结构、设计要求、材料要求、性能要求、循环保护（支持）系统、试验方法和包装、标志及贮存等。

本规范适用于泵用、釜用及类似旋转轴用机械密封。

#### General specification for mechanical seals

This specification specifies the terminologies of mechanical seal, sealing structure, design requirements, material requirements, performance requirements, circulation protection system, test method and packaging, marking and storage, etc.

This specification is applicable to mechanical seals for pumps, agitators and similar rotating equipments.



#### 146、JB/T 4127.1—2013 机械密封 第1部分：技术条件

本部分规定了机械密封产品结构、主要零件技术要求、性能要求、试验、安装与使用要求、标志与包装等。

本部分适用于离心泵及其它类似旋转式机械的机械密封。其工作参数一般为：密封腔压力为 0 ~ 10.0MPa；密封腔温度为 -20℃ ~ 150℃；轴（或轴套）外径为 10mm ~ 120mm；线速度不大于 30m/s；介质为清水、油类和一般腐蚀性液体。

#### Mechanical seal Part 1: Technical specification

This section specifies the structure of mechanical seal products, technical requirements of main parts, performance requirements, testing, installation and use requirements, marking and packaging, etc.

This part is applicable to mechanical seals of centrifugal pumps and other similar rotary machines. Its working parameters are as follows: the pressure of the sealing chamber is 0~10.0 MPa; the temperature of the sealing chamber is -20℃~150℃; the outer diameter of the shaft (or sleeve) is 10mm~120 mm; the linear velocity is not more than 30 m/s; the medium is clear water, oil and general corrosive liquid.



#### 147、JB/T 4127.2—2013 机械密封 第2部分：分类方法

本标准规定了机械密封的分类方法。

本标准适用于旋转轴用机械密封。

Mechanical seal Part 2: Classification method

This standard specifies the classification method of mechanical seals.

This standard is applicable to mechanical seals for rotating shafts.



#### 148、JB/T 6629—2015 机械密封循环保护系统及辅助装置

本标准规定了机械密封循环保护（支持）系统的分类与构成、冲洗冷却系统、急冷（吹扫）系统、冷却水系统、管道配置、辅助装置及检验等。

本标准适用于工作温度  $-100^{\circ}\text{C} \sim 400^{\circ}\text{C}$ ，轴径不大于 120mm，工作压力 0 MPa  $\sim$  6.3 MPa 的泵用机械密封循环保护系统。

Circulation protection system and the auxiliary device of mechanical seal

This standard specifies the classification and composition of mechanical seal circulation protection system, flushing cooling system, quenching system, cooling water system, pipe configuration, auxiliary devices and test, etc.

This standard is applicable to mechanical seal circulation protection system for pumps with working temperature  $-100^{\circ}\text{C} \sim 400^{\circ}\text{C}$ , shaft diameter not more than 120 mm and working pressure 0 MPa  $\sim$  6.3 MPa.



149、JB/T 6619.1-2018 轻型机械密封 第1部分：技术条件  
本部分规定了轻型机械密封结构、主要零部件技术要求、性能要求、检验规定、试验方法、安装与使用要求、标志与包装等。  
本部分适用于小型（功率小于7.5kW）的离心泵、旋涡泵、转子泵、喷射泵及其它类似旋转机械用轻型机械密封。

#### Light mechanical seals—Part 1: Specification

This part specifies the structure of light mechanical seals, technical requirements for main parts, performance requirements, test rules, test methods, installation and use requirements, marks and packaging, etc.

This part is applicable to the light mechanical seals of centrifugal pumps, scroll pumps, rotor pumps, jet pumps and other similar rotary machines with power less than 7.5 kW.



150、JB/T 6619.2-2018 轻型机械密封 第2部分：试验方法  
本部分规定了轻型机械密封产品检验分类、试验方法、试验条件、试验装置、安装和仪器仪表等。

本部分适用于小型（功率小于7.5kW）的离心泵、旋涡泵、转子泵、喷射泵及其它类似旋转机械用轻型机械密封。

#### Light mechanical seals—Part 2: Test method

This part specifies the test classification, test methods, test conditions, test devices, installation and instrumentation of light mechanical seals.

This part is applicable to the light mechanical seals of centrifugal pumps, scroll pumps, rotor pumps, jet pumps and other similar rotary machines with power less than 7.5 kW.



#### 151、GB/T 33920—2017 柔性石墨板试验方法

本标准适用于柔性石墨板灰分、固定碳含量、热失重、硫含量、氯含量和氟含量的测定，硫含量测定范围为 (50 ~ 10000)  $\mu\text{g/g}$ ，氯含量测定范围为 (1 ~ 100)  $\mu\text{g/g}$ ，氟含量测定范围为 (1 ~ 1000)  $\mu\text{g/g}$ 。

#### Test method for flexible graphite sheets

This standard is applicable to the determination of ash, fixed carbon content, weight loss by heated, sulfur content, chlorine content and fluorine content in flexible graphite sheets. Testing range for sulfur content is (50~10000)  $\mu\text{g/g}$ , for chlorine content is (1~100)  $\mu\text{g/g}$ , the fluorine content is (1~1000)  $\mu\text{g/g}$ .



#### 152、JB/T 9141.1—2013 柔性石墨板材 第1部分：密度测试方法

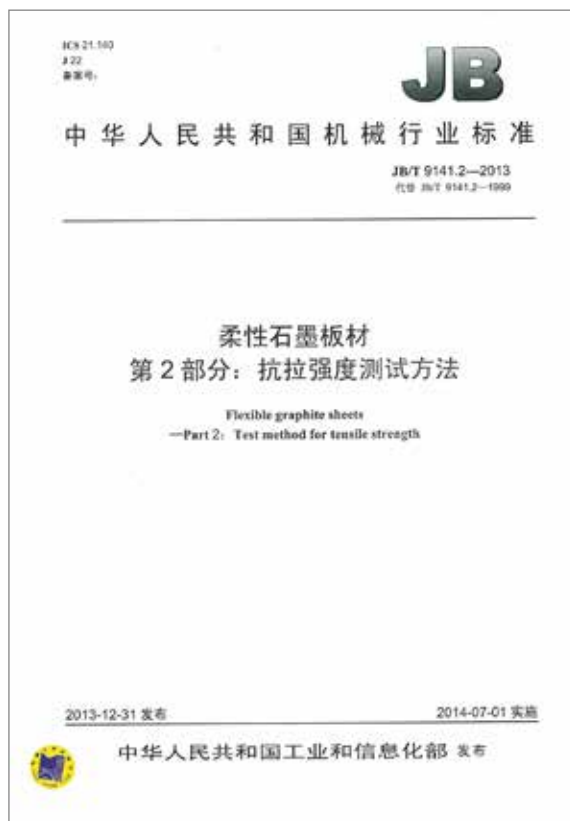
JB/T 9141 的本部分规定了测试柔性石墨板材密度的仪器、试样、试验步骤及试验结果的计算。

本部分适用于柔性石墨板材密度的测试。

#### Flexible graphite sheets—Part 1: Test method for density

This part of JB/T 9141 specifies the apparatus, sample, testing procedure and calculation of result for density test of flexible graphite sheet.

This section applies to density test of flexible graphite sheet.



153、JB/T 9141.2—2013

柔性石墨板材 第2部分：抗拉强度测试方法

JB/T 9141 的本部分规定了测试柔性石墨板材抗拉强度的试验设备、试样、试验步骤和试验结果的计算。

本部分适用于柔性石墨板材抗拉强度的测试。

Flexible graphite sheets—Part 2: Test method for tensile strength

This part of JB/T 9141 specifies the apparatus, sample, testing procedure and calculation of result for tensile strength test of flexible graphite sheet.

This section applies to tensile strength test of flexible graphite sheet.



154、JB/T 9141.7—2013

柔性石墨板材 第7部分：热失重测定方法

JB/T 9141 的本部分规定了测试柔性石墨板材热失重的仪器和设备、试样制备方法、试验步骤和试验结果的计算。

本部分适用于柔性石墨板材热失重的测定。

Flexible graphite sheets—Part 7: Test method for weight loss by heated

This part of JB/T 9141 specifies the apparatus, sample, testing procedure and calculation of result for weight loss by heated test of flexible graphite sheet.

This section applies to weight loss by heated test of flexible graphite sheets.



#### 155、JB/T 8560—2013 碳纤维 / 聚四氟乙烯编织填料

本标准规定了碳纤维与聚四氟乙烯割裂丝、生料带编织填料的分类、技术要求、检验、标志、包装和贮存。

本标准适用于碳纤维与聚四氟乙烯割裂丝、生料带混合编织并浸渍聚四氟乙烯乳液和润滑油的编织填料。

#### Carbonized fibre/polytetrafluoroethylene braided packing

This standard specifies the classification, technical requirements, inspection, marking, packaging and storage of carbonized fiber and PTFE filament/Teflon tape braided packing..

This standard is applicable to woven packing consisting of carbonized fiber and PTFE filament/Teflon tape with PTFE latex and lubricating oil treatment.



#### 156、JB/T 8559—2014 金属包垫片

本标准规定了金属包垫片的分类、要求、检验、标志、包装和贮存。  
本标准适用于金属包垫片。

#### Metallic envelope gaskets for pipe flanges

This standard specifies the classification, technical requirements, inspection, marking, packaging and storage of metal jacketed gasket.

This standard applies to metal jacketed gasket.



#### 157、JB/T 7370—2014 柔性石墨编织填料

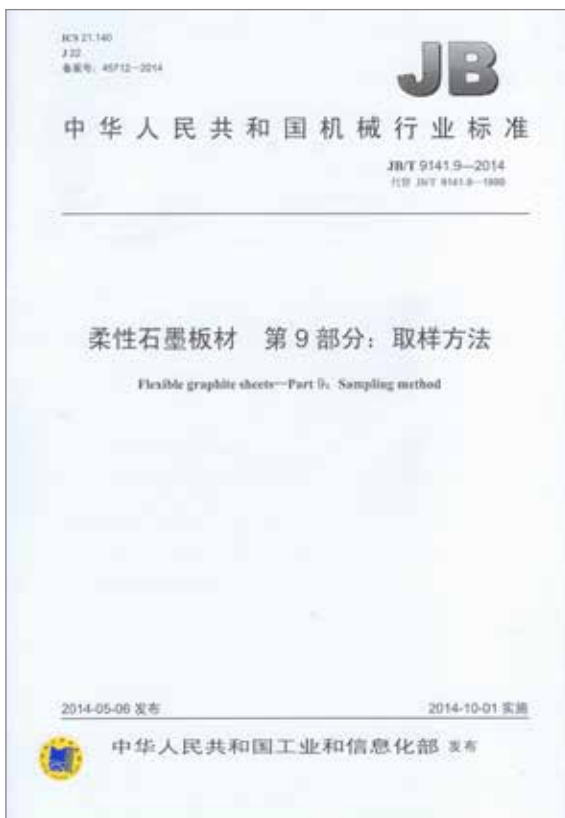
本标准规定了柔性石墨编织填料的分类、材料、要求、检验、标志、包装和贮存。

本标准适用于非金属纤维增强、非金属与金属增强、外部金属增强的柔性石墨编织填料及柔性石墨编织填料模压环。

#### Flexible graphite braided packing

This standard specifies the classification, materials, technical requirements, inspection, marking, packaging and storage of flexible graphite braided packing.

This standard is applicable to flexible graphite braided packing and die-molding ring of flexible graphite braided packing with reinforcement of non-metallic fibers/non-metallic and metallic material/external metal material.



#### 158、JB/T 9141.9—2014 柔性石墨板材 第9部分：取样方法

JB/T 9141 的本部分规定了柔性石墨板材性能测试用样品的取样方法。

本部分适用于柔性石墨板材性能测试用样品的取样。

#### Flexible graphite sheets—Part 9: Sampling method

This part of JB/T 9141 specifies the sampling method for flexible graphite sheets testing.

This part applies to the sampling of flexible graphite sheet for performance testing.





#### 159、JB/T 6617-2016 柔性石墨填料环技术条件

本标准规定了柔性石墨填料环的要求、检验、标志、包装和贮存。  
本标准适用于柔性石墨填料环。

##### Specification of flexible graphite ring

This standard specifies the technical requirements, inspection, marking, packaging and storage of flexible graphite packing rings.

This standard applies to flexible graphite packing ring.



#### 160、JB/T 6628-2016 柔性石墨复合增强(板)垫

本标准规定了柔性石墨复合增强垫和柔性石墨复合增强板产品的分类、标记、要求、检验及其方法、标志、包装和贮存。  
本标准适用于柔性石墨复合增强垫和柔性石墨复合增强板。

##### Reinforced flexible graphite (sheets) gaskets

This standard specifies the classification, marking, technical requirements, inspection and methods, marking, packaging and storage of reinforced flexible graphite gasket and reinforced flexible graphite sheet.

This standard applies to reinforced flexible graphite gasket and reinforced flexible graphite sheet.



#### 161、JB/T 12548—2015 外抽式真空包装机

本标准适用于采用塑料、复合薄膜等作为包装袋，在包装袋开口处插入抽气管，通过一定（某种）控制方式进行抽真空，当抽气时间达到设定值后对包装袋进行热封的真空包装机，广泛应用于食品、电子、医疗、纺织及化工等行业。

#### External vacuum packaging machine

This standard is applicable to the plastics and composite film as packing bags. The vacuum packaging machine has an exhaust tube which can be put into bag openings, pumping air into vacuum state through a certain (some) control manner, and heat sealing the bag openings when extraction time reaches the set value. This machine is widely used in food, electronics, medical, textile and chemical industry, etc.



#### 162、QC/T 1080—2017 科普宣传车

本标准适用于在已定型的汽车底盘或定型汽车上改装的科普宣传车。

#### Science caravan

This standard is applicable to the science caravan refitted on the fixed automobile chassis or the fixed automobile.

# 中国通用机械工程有限公司

China National General Machinery Engineering Corporation

## 公司名称：中国通用机械工程有限公司

Company Name: China National General Machinery Engineering Corporation

中国通用机械工程有限公司（简称中通公司），成立于 1979 年，隶属中国机械工业集团有限公司管理。中国机械工业集团有限公司为世界 500 强企业。

中通公司是集工程承包、设备集成、技术服务、进出口贸易为一体的专业工程公司。

中通公司拥有对外工程承包经营、进出口贸易、甲级设备监理资质、压力容器设计资质，是中国机电产品进出口商会、中国对外工程承包商会的会员单位。

中通公司业务涉及城市污水治理、工业废水废气及粉尘治理、城市湖泊水体治理、城市供水供热、轨道交通、电厂电站及石油化工、煤化工等领域。国内业务范围已遍及除西藏、台湾之外的各个省份；国际市场业务已涉及亚、非、欧、美等地区的 20 多个国家。

中通公司坚持诚信为本、创新为魂、客户至上、追求卓越，拥有一支经验丰富的工程设计和项目管理人才队伍，形成了完整的业务链条和工程项目组织管理模式。30 多年来，累计完成各类项目 3000 多个，获得国家级科学技术进步奖 4 项，省部级科技进步奖等各类奖项 68 项，已成为管理科学，资产优良，勇于承担社会责任的中央企业。

China National General Machinery Engineering Corporation(GME), established in 1979, is a subsidiary under China National Machinery Industry Corporation (SINOMACH) which is one of Fortune Global 500. GME is a professional engineering Corporation, mainly specializing in engineering works contracting(EPC), complete equipment supply, technical services and import and export trade, etc.

GME has Qualification Certificates, such as International Engineering Contracting (EPC), Import & Export Trade, Class A Equipment Supervision, Qualifications of Pressure Vessel Design. GME is a member of CCCME (China Chamber of Commerce for Import and Export of Machinery and Electronic Products) respectively.

The lines of GME's main business involves in the urban sewage treatment, industrial waste water/gas treatment and ash/dust removal, urban lake water pollution control, urban water supply & heat supply, URR (Urban Rapid Rail Transit), power plant and petrochemical, coal chemical industry and so on. GME's domestic business areas cover in all provinces except Tibet and Taiwan, and overseas business in the international market covered areas more than 20 countries and regions in Asia, Africa, Europe and America.

GME's core value is "Honesty, Customer First, Creativity and Striving for Excellence". GME has an experienced engineering design and project management team, and formed a complete chain of business and engineering project organization and management mode. More than 3,000 projects were completed in past 30 years. GME has won four National Science & Technology Progress Awards and 68 Provincial Awards of Scientific Research Advancement. Now GME has become a professional engineering company with a scientific management, qualified assets and a SOE with strong social responsibility.

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## 标准 Standards



### 1、锅炉和压力容器用钢板 GB 713—2014

注：本标准是中国通用机械工程有限公司参与修订的国家标准。  
本标准规定了锅炉和压力容器用钢板的订货内容、牌号表示方法、尺寸、外形、重量及允许偏差、技术要求、试验方法、检验规则、包装、标志和质量证明书等。

本标准适用于锅炉和中常温压力容器的受压元件用厚度为3mm~250mm 的钢板。

#### Steel plates for boilers and pressure vessels

This standard specifies the ordering information, grades designation, dimension, shape, mass and permissible tolerance, technical requirements, test methods, inspection rules, packing, marking, and quality certificate of steel plates and sheets for boilers and pressure vessels.

This standard is applicable to steel plates and sheets in thicknesses from 3 mm to 250 mm inclusive for pressurized parts of boiler and medium-to-ambient-temperature pressure vessels.

# 中国电器科学研究院股份有限公司

China National Electric Apparatus Research Institute Co., Ltd.

**公司名称：中国电器科学研究院股份有限公司**  
**Company Name: China National Electric Apparatus Research Institute Co., Ltd.**

中国电器科学研究院股份有限公司（简称中国电研）作为国家首批转制科研院所，前身为始建于1958年的第一机械工业部广州电器科学研究所，长期从事电器产品环境适应性基本规律与机理研究，致力于提升我国电器产品在不同的气候、机械、化学、电磁等复杂环境中的适应能力，提升电器产品质量水平。在环境适应性研究的基础上，践行国家创新驱动发展战略，中国电研围绕电器行业的标准规范、检测技术、系统集成技术、电能转换技术、先进控制技术、材料技术等质量提升共性技术研发，取得了一系列科技创新及核心技术成果，通过技术成果转化，为电器产品质量提升提供系统解决方案，具体包括质量技术服务、智能装备、环保涂料及树脂等三大业务领域。

中国电研建有工业产品环境适应性国家重点实验室、国家技术标准创新基地（家用电器及电器附件）、国家日用电器质量监督检验中心、国家智能汽车零部件质量监督检验中心等12个国家级科技研发和技术服务平台，拥有15个IEC国际标准对接平台和11个国家标准平台，是我国电器行业接轨国际、提高国际话语权的重要支撑平台，亦是国内电器领域领先的应用型研究机构和技术创新平台。

China National Electric Apparatus Research Institute Co., Ltd. (CEI) is one of the first batch of system-transformed scientific research institutes in the China. Its predecessor is Guangzhou Electric Apparatus Research Institute of the First Ministry of Machinery Industry, which was established in 1958. It has long been engaged in the research on the basic law and mechanism of environmental adaptability of electrical products, and is committed to improving the adaptability and quality of Chinese electrical products in climate, mechanical, chemical, electromagnetic and other complex environments. Implementing the national innovation-driven development strategy, on the basis of its environmental adaptability research, CEI makes efforts in researching and developing electrical industry common technologies involved in standards and regulation, testing technology, system integration technology, electric energy conversion technology, advanced control technology and material technology. In this process, CEI has achieved a number of scientific and technological innovations and core technological achievements, and transformed technological achievements into a systematic solution for improving the quality of electrical products. Its business areas mainly include quality technical service, intelligent equipment and environment-friendly coatings and resins.

CEI has 12 national science and technology research and development and technical service platforms, including the State Key Laboratory of Environmental Adaptability for Industrial Products, the National Technical Standard Innovation Base (Household Appliances and Accessories), the National Household Appliances Quality Supervision and Inspection Center and the National Intelligent Automotive Parts Quality Supervision and Inspection Center. CEI has 15 platforms interfacing with IEC international standards and 11 platforms of national standard. CEI not only serves as an important platform supporting China's electrical industry to have more voice on the international stage, but CEI is also a China's foremost application research institute and innovation platform in the electrical apparatus field.

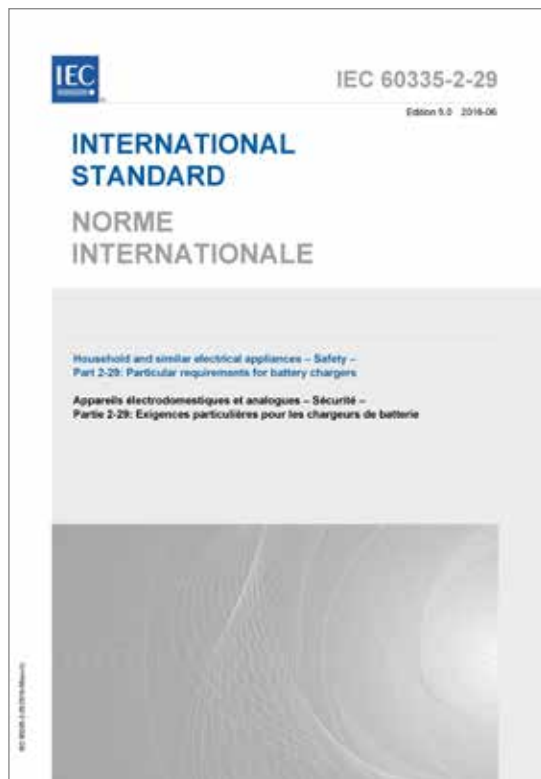
## 联系人及联系方式

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## 标准 Standards



### 1. IEC 60335—2—29

2016 家用和类似用途电器的安全第 2—29 部分：电池充电器的特殊要求

IEC 60335—2—29: 2016《家用和类似用途电器的安全第 2—29 部分：电池充电器的特殊要求》本标准规定了额定电压不超过 250V，无脉冲直流电不超过 120V 的家用及类似用途电池充电器的安全。

Household and similar electrical appliances - Safety - Part 2-29: Particular requirements for battery chargers

IEC 60335-2-29:2016 deals with the safety of electric battery chargers for household and similar use having an output not exceeding 120 V ripple-free direct current, their rated voltage being not more than 250 V.



### 2. IEC 62863: 2017 家用和类似用途电理发剪性能测试方法

IEC 62863: 2017《家用和类似用途电理发剪性能测试方法》本标准适用于可重复使用的家用电理发剪或修发器。本标准涉及的是额定电压不超过 250V 的家用电理发剪或修发器的性能测试方法。本标准不涉及安全或性能要求。

Methods of measuring performances of electric hair clippers or trimmers for household use

This document deals with the methods of measuring performances of electric hair clippers or trimmers for household use with a rated voltage not greater than 250 V. This document does not specify safety or performance requirements.

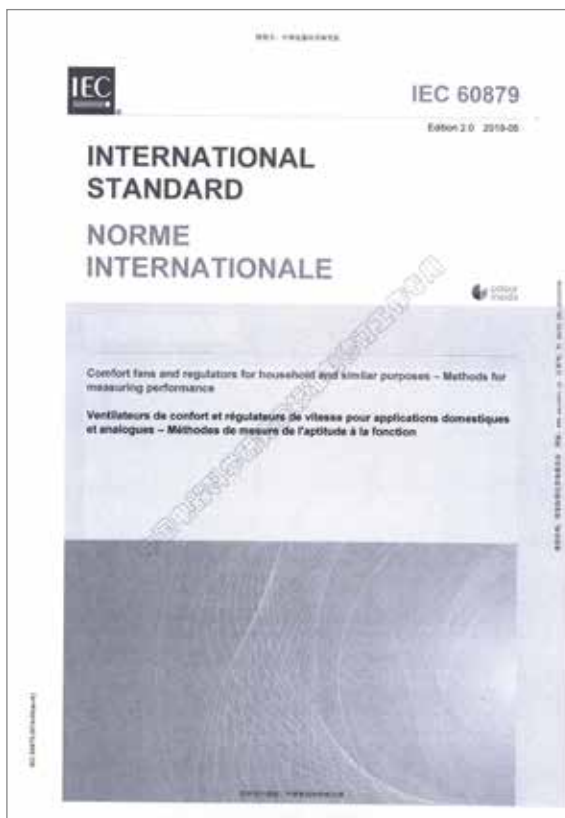


### 3. IEC 60665:2018 家用和类似用途交流换气扇及调速器性能测试方法

IEC60665:2018《家用和类似用途交流换气扇及调速器性能测试方法》本标准针对家用交流换气扇的轴承、调速器、工作电压、工作频率、工作电压变化范围、空气输送能力等指标，研究测试这些性能指标的试验方法及试验设备，并且规定了不同换气扇调速器至少的降速能力、调速器的结构、换气扇上应该标注的内容、不同种类的换气扇空气输送性能测试方法。

A.C. ventilating fans and regulators for household and similar purposes-Methods for measuring performance

IEC 60665:2018 is for the test of household bearings, governor, operating voltage, operating frequency, working voltage variation range, air transport capacity, etc., to test and test these performance indicators test methods and test equipment, and to specify different ventilation fan governors At least the speed reduction capability, the structure of the governor, the contents to be marked on the ventilation fan, and the different types of ventilation fan air delivery performance test methods.



### 4. IEC 60879: 2019 家用和类似用途的风机和调节器——性能测量方法

IEC60879:2019《家用和类似用途舒适风扇及调速器性能测试方法》主要研究国内外最新的电风扇技术及测试方法，研究各类家用风扇（包括台扇、壁扇、台地扇、落地扇、顶扇、转页扇、吊扇、柱式风扇及无叶风扇）的风量的测量方法和测试装备，包括测试室的空间尺寸的确定、被测风扇的摆放位置及方位、风速表的精度、体积及数量和布置形式、不同类型风扇的风量计算方法等；研究调速器调速范围指标以及确定方法；通过各国之间的试验验证，提出具有可复现性和一致性的测试方法及测试装备。

Comfort fans and regulators for household and similar purposes - Methods for measuring performance

IEC60879:2019 is about the latest electric fan technology and test methods at home and abroad, research various types of household fans (including table fans, wall fans, table fans, floor fans, ceiling fans, page fans, ceiling fans, column fans and leafless fans) Air volume measurement method and test equipment, including the determination of the space size of the test room, the position and orientation of the tested fan, the accuracy of the anemometer, the volume and quantity and arrangement, the calculation method of the air volume of different types of fans, etc. The speed regulation range indicator and the determination method; through the test verification between countries, the test method and test equipment with reproducibility and consistency are proposed.



# 重庆材料研究院有限公司

Chongqing Materials Research Institute Co.,Ltd.

## 公司名称：重庆材料研究院有限公司

Company Name:Chongqing Materials Research Institute Co.,Ltd.

重庆材料研究院有限公司（以下简称“重材院”，原重庆仪表材料研究所）创建于1961年，是原机械工业部直属一类研究所，1999年转制进入中国机械工业集团有限公司。

重材院是我国专门从事功能材料共性基础技术、工程技术研究与产业化开发的综合性研究机构，是全国仪表功能材料行业自律性组织和学术、技术组织的挂靠单位。重材院主办的《功能材料》中文核心期刊、《功能材料信息》技术期刊、“中国功能材料网”网站和“中国功能材料及其应用”大型系列学术会议已成为我国功能材料领域具有较高权威性和品牌地位的核心服务平台。并先后经国家批准建立了“国家仪表功能材料工程技术研究中心”、“国家企业技术中心”、“高性能测温材料国家地方联合工程实验室”、“工业（仪表功能材料）产品质量控制和技术评价实验室”、“材料物理与化学”博士学位授予点、博士后科研工作站、“重庆市院士工作站”、“两江学者”特聘岗位、“重庆市海智基地工作站”、“耐腐蚀合金重庆市重点实验室”、“稀贵金属及高效利用重庆市工程技术研究中心”等国家级和省部级科技创新平台，是重庆市第一批“创新型企业”、第二批“市级知识产权优势企业”和国家知识产权局授予的“国家级知识产权优势企业”。

重材院通过了GB/T 19001/ISO 9001质量管理体系和GJB 9001武器装备质量管理体系、武器装备科研生产单位保密资格、武器装备科研生产许可证、装备承制单位资格、军用核设施设计制造许可证及民用核安全电气设备设计制造许可证等认证。

建立以来，重材院相继进行了测温材料、贵金属材料、耐腐蚀材料、弹性材料、高温合金材料、磁性材料、精密电阻材料、应变电阻材料、难熔金属材料、金属陶瓷材料、传感器敏感材料等材料及应用技术和传感器技术、表面功能性覆层技术、厚膜工艺及浆料技术等众多领域的研究和开发。在测温材料及元件、高性能特种合金材料及元件、传感器敏感材料及元件的研究开发方面具有较强的技术优

Chongqing Materials Research Institute Co., Ltd. (CMRI, named as Chongqing Instrument Materials Research Institute) established in 1961, is A-class subsidiary of Chinese Mechanical Industrial department, which was transformed into China National Machinery Industry corporation in 1999.

Our company is a specialized comprehensive institute of functional materials generic technology, engineering technical research and industrialism development. CMRI occupies an important position. We run Chinese core periodicals "Journal of Functional Materials", technical bulletin "Functional Materials Information", "China Functional Materials Web" and large-scale academic conference "China Functional Materials and Its Application", which becomes the core service platform with supreme authority and brand position for national functional materials field. With the approval of the country, we have successively established science and technology innovation platform at national level and provincial and ministerial level, such as "National Instrument Functional Materials Engineering Technology Research Center", "National Enterprise Technology Center", "National and Local Joint Engineering Laboratory of High Performance Thermometric Materials", "Industrial (Instrument Functional Materials) Product Quality Control and Technical Evaluation Laboratory", Doctoral Degree Awarding Point and Postdoctoral Research Station of "Material Physics and Chemistry", "Chongqing Academician Workstation", Special Post of "Liangjiang Scholar", "Chongqing Haizhi Base Workstation", "Chongqing Key Laboratory of Corrosion Resistant Alloy" and "Chongqing Engineering Technology Research Center for Rare and Precious Metals and Their Efficient Utilization". Chongqing Instrument Materials Research Institute was selected as the first batch of "Chongqing Innovative Enterprises", the second batch of "Chongqing Municipal Intellectual Property Advantage Enterprises" and "National Intellectual Property Advantage Enterprises" awarded by the State Intellectual Property Office.

CMRI has passed the evaluation of the quality management system of GB/T 19001/ISO 9001 and GJB 9001 for weapon equipment, the national weaponry secret qualification of production unit of scientific research examine authentication, license for scientific research and production of weapons and equipment, qualification of equipment manufacturer, license for design and manufacture of military nuclear facilities and license for design and manufacture of civil nuclear safety electrical equipment.

During 50 years, CMRI researches and develops temperature measurement material, noble metal material, elastic material, high temperature alloy, magnetic material, precision resistance material,

势，居国内领先地位。建立以来，共取得科技成果近 1000 余项，先后获得国家级奖励 12 项，部、省级科技成果奖近 300 余项，成果广泛应用于机械、汽车、电子、能源、石化、冶金、轻工、舰船、航空、航天与国防军工等众多领域，解决了国家一系列重点工程、重大设备和军工配套所需的关键材料与元件，为我国国民经济的发展和国防军工技术进步做出卓越贡献。

重材院作为全国仪表功能材料标准化技术委员会 (SAC/TC419) 的秘书处单位，负责全国仪表功能材料领域标准化归口管理工作，制修订国家标准、国家军用标准、行业标准等各类标准 130 多项。重材院始终坚持标准与产业发展相结合、标准与质量提升相结合，坚持以标准引领行业技术进步，积极推动自主创新成果制定国家标准、国家军用标准、行业标准，有力地促进了我国仪表功能材料产业升级和质量提升，促进了行业健康发展。

strain resistance material, refractory metal base composite material, metal ceramic material, sensor material, and their application. In addition, we are specialized in sensor technology, surface functional coverage technology, thick-film and pulp technology. CMRI has strong advantage in temperature material & parts, high properties special alloy material & parts, sensor material & parts' R & D, and ranked in the top in nation. We got scientific and technological achievements nearly 1000 items, of which 12 items awarded by nation and around 300 items awarded by province. Meanwhile, these achievements are widely used in the industry of machine, automobile, electric, energy, petrochemical, metallurgical, light industry, ships and warships, aerospace, aviation, national defense military, etc., which supply a series key materials and parts for major engineer, major project in nation, as well as contribute to our national economic development and nation defense technology. As the secretariat unit of National Technical Committee 419 on Instrument Functional Materials of Standardization Administration of China (SAC/TC419), CMRI is responsible for the centralized management of standardization in the field of instrument functional materials, and the preparation and revision of more than 130 national, national military, industry and other standards. CMRI always adheres to the combination of standards and industrial development, and the combination of standards and quality improvement, firmly believes that standards lead the technological progress of the industry and actively promotes the development of national standards, national military standards and industrial standards for independent innovation achievements, which effectively promotes the upgrading and quality improvement of instrument functional material industry in China and the healthy development of the industry.

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## 标准 Standards

### 主持制定或参与的标准



#### 1 电阻温度计用铂丝 GB/T 5977—2019

本标准规定了电阻温度计用铂丝产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造标准铂电阻温度计、工业铂电阻感温元件、工业铂热电阻、标准铂电阻温度计引线、工业铂热电阻引线及其它仪器仪表用铂丝。

##### 1. Platinum wires for resistance thermometers

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of platinum wires for resistance thermometers.

This standard applies to manufacturing standard platinum resistance thermometer, industrial platinum resistance temperature sensors, industrial platinum resistance thermometers, Lead for standard platinum resistance thermometer, Lead for platinum resistance thermometers and platinum wire for other instruments.



#### 2. 铂铑 40— 铂铑 20 热电偶丝及分度表 GB/T 36010—2018

本标准规定了铂铑 40— 铂铑 20 热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于铂铑 40— 铂铑 20 热电偶丝。

##### 2. Platinum-40%rhodium/platinum-20%rhodium thermocouple wires and temperature-electromotive force(EMF) tables

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of platinum-40% rhodium/platinum-20% rhodium thermocouple wires.

This standard is applicable to platinum-40% rhodium/platinum-20% rhodium thermocouple wires.



3. 铠装连续热电偶电缆及铠装连续热电偶 GB/T 36016—2018  
本标准规定了铠装连续热电偶电缆及铠装连续热电偶的术语和定义、技术要求、试验方法、检验规则和包装、标志。  
本标准适用于工作温区为 80℃ ~ 800℃ 的铠装连续热电偶电缆及铠装连续热电偶。

3. Sheathed continuous thermocouple cables and sheathed continuous thermocouple  
This standard specifies the terms and definitions, technical requirements, test methods, inspection rules, packaging and marks of sheathed continuous thermocouple cables and sheathed continuous thermocouple.  
This standard is applicable to sheathed continuous thermocouple cables and sheathed continuous thermocouple with working temperature range of 80℃~800℃.



4. 油气工程用高强度耐蚀合金棒 GB/T 36026—2018  
本标准规定了油气工程用高强度耐蚀合金棒的订货内容、尺寸、外形、技术要求、试验方法、质量保证规定、包装、标志和质量证明书。

本标准适用于油气工程用公称直径为 15mm~400mm 锻制、热轧、冷拉（或冷拔）耐蚀合金棒材。

4. High-strength corrosion-resistant alloy bars for oil and gas engineering  
This standard specifies the ordering content, size, shape, technical requirements, test methods, quality assurance regulations, packaging, marks and quality certificates of high-strength corrosion-resistant alloy bars for oil and gas engineering.  
This standard is applicable to forged, hot-rolled or cold drawn (or cold drawn) corrosion-resistant alloy bars with nominal diameter of 15mm~400mm for oil and gas engineering.



##### 5. 铜－铜镍（康铜）热电偶丝 GB/T 2903—2015

本标准规定了铜－铜镍（康铜）热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造工业铜－铜镍（康铜）热电偶（T型热电偶）用合金丝。

##### 5. Copper/Copper-Nickel (Constantan) thermocouple wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of copper/copper-nickel (constantan) thermocouple wires.

This standard is applicable to the manufacture of the alloy wires for copper/copper-nickel (constantan) thermocouple (Type T thermocouple).



##### 6. 铁－铜镍（康铜）热电偶丝 GB/T 4994—2015

本标准规定了铁－铜镍（康铜）热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造工业铁－铜镍（康铜）热电偶（J型热电偶）用合金丝。

##### 6. Iron/Copper-Nickel (Constantan) thermocouple wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of iron/copper-nickel (constantan) thermocouple wires.

This standard is applicable to the manufacture of the alloy wires for Iron/copper-nickel (constantan) thermocouple (Type J thermocouple).



#### 7. 镍铬硅—镍硅镁热电偶丝 GB/T 17615—2015

本标准规定了镍铬硅—镍硅镁热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。  
本标准适用于制造工业镍铬硅—镍硅镁热电偶（N型热电偶）用合金丝。

#### 7. Nickel-chromium-silicon/nickel-silicon-magnesium thermocouple wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of nickel-chromium-silicon/nickel-silicon-magnesium thermocouple wires.

This standard is applicable to the manufacture of the alloy wires for nickel-chromium-silicon/nickel-silicon-magnesium thermocouple (Type N thermocouple).



#### 8. 热电偶用补偿导线 GB/T 4989—2013

本标准规定了热电偶用补偿导线的产品分类、技术要求、试验方法、检验规则、标识、包装等。

本标准适用于分度号为 S、R、K、N、E、J 和 T 的热电偶配用的补偿导线。补偿导线的绝缘层与护套以聚氯乙烯、无碱玻璃丝及聚四氟乙烯为主体材料。对于其他材料，若能满足本标准的技术要求，亦可采用。

#### 8. Extension and compensating cables for thermocouples

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of extension and compensating cables for thermocouples.

This standard is applicable to extension and compensating cables for Types S, R, K, N, E, J and T thermocouples. The insulating layer and sheath of extension and compensating cables are made of PVC, alkali free glass fiber and polytetrafluoroethylene. It is also applicable to other materials that can meet the technical requirements of this standard.





#### 9. 钨铼热电偶丝及分度表 GB/T 29822—2013

本标准规定了钨铼热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装和标识。

本标准适用于制造钨铼 3—钨铼 25 热电偶丝、钨铼 5—钨铼 26 热电偶丝、钨铼 5—钨铼 20 热电偶丝。

#### 9. Tungsten-rhenium thermocouple wires and temperature-electromotive force (EMF) tables

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of tungsten-rhenium thermocouple wires.

This standard is applicable to the manufacture of the alloy wires for Tungsten-3% Rhenium/ Tungsten-25% Rhenium thermocouples, Tungsten-5% Rhenium/ Tungsten-26% Rhenium thermocouples, Tungsten-5% Rhenium/ Tungsten-20% Rhenium thermocouples



#### 10. 铂铑 10—铂热电偶丝、铂铑 13—铂热电偶丝、铂铑 30—铂铑 6 热电偶丝

本标准规定了铂铑 10—铂热电偶丝、铂铑 13—铂热电偶丝、铂铑 30—铂铑 6 热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造铂铑 10—铂热电偶丝、铂铑 13—铂热电偶丝、铂铑 30—铂铑 6 热电偶用合金丝。

#### 10. Platinum-10%Rhodium/Platinum thermocouple wires—Platinum-13%Rhodium/Platinum thermocouple wires—Platinum-30%Rhodium/Platinum-6%Rhodium thermocouple wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of platinum-10%rhodium/platinum thermocouple wires, platinum-13%rhodium/platinum thermocouple wires, platinum-30%rhodium/platinum-6%rhodium thermocouple wires.

This standard is applicable to the manufacture of platinum-10%rhodium/platinum thermocouple wires, platinum-13%rhodium/platinum thermocouple wires, platinum-30%rhodium/platinum-6%rhodium thermocouple wires.





#### 11. 镍铬—镍硅热电偶丝 GB/T 2614—2010

本标准规定了镍铬—镍硅热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造工业镍铬—镍硅热电偶（K型热电偶）用合金丝。

#### 11. Nickel-Chromium/Nickel-Silicon thermocouple wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of nickel-chromium/nickel-silicon thermocouple wires.

This standard is applicable to the industrial manufacture of the alloy wires for nickel-chromium/nickel-silicon thermocouple (Type K thermocouple).



#### 12. 镍铬—金铁、铜—金铁低温热电偶丝 GB/T 2904—2010

本标准规定了镍铬—金铁、铜—金铁热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造工业镍铬—金铁、铜—金铁热电偶用合金丝。

#### 12. Nickel-Chromium/Gold-Iron, Copper/Gold-Iron low temperature thermocouple wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of nickel-chromium/gold-iron, copper/gold-iron low temperature thermocouple wires.

This standard is applicable to the industrial manufacture of the alloy wires for nickel-chromium/gold-iron, copper/gold-iron low temperature thermocouple.



### 13. 热电偶用补偿导线合金丝 GB/T 4990—2010

本标准规定了热电偶用补偿导线合金丝的产品分类、技术要求、试验方法、检验规则、标志、包装等。

本标准适用于分度号为 S、R、K、N、E、J 和 T 的热电偶配用的补偿导线合金丝。

#### 13. Alloy wires of extension and compensating cables for thermocouples

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of alloy wires of extension and compensating cables for thermocouples.

This standard is applicable to alloy wires of extension and compensating cables for Types S, R, K, N, E, J and T thermocouples.



### 14. 镍铬—铜镍（康铜）热电偶丝 GB/T 4993—2010

本标准规定了镍铬—铜镍（康铜）热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造工业镍铬—铜镍（康铜）热电偶（E 型热电偶）用合金丝。

#### 14. Nickel-Chromium/Copper-Nickel(Constatan) thermocouple wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of nickel-chromium/copper-nickel(constantan) thermocouple wires.

This standard is applicable to the industrial manufacture of the alloy wires for industry nickel-chromium/copper-nichel(nonstantan) thermocouple (Type E thermocouple).



#### 15. 锰铜、康铜精密电阻合金线、片及带 GB/T 6145—2010

本标准规定了锰铜、康铜精密电阻合金的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造各种标准电阻器、分流器、精密或普通的电阻元件的锰铜、康铜电阻合金的线材、片材及带材。

#### 15. Manganin and constantan alloy wires, sheet and rolled wires for precision electrical resistance

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of manganin and constantan alloy.

This standard is applicable to the manufacture of manganin and constantan alloy wires, sheet and rolled wires for precision electrical resistance for different kinds of standard resistors, shunt, precise or ordinary resistance element.



#### 16. 新康铜电阻合金 GB/T 6149—2010

本标准规定了新康铜电阻合金的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造各种电器变阻器和电阻元件的最高使用温度为 500℃ 的新康铜线材和带材。

#### 16. New constantan resistance alloy

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of new constantan resistance alloy.

This standard is applicable to the manufacture of new constantan wires and strip with the maximum service temperature of 500℃ for various electrical rheostat and resistance elements.



#### 17. 铠装热电偶电缆及铠装热电偶

GB/T18404—2001 idt IEC 61515:1995

本标准规定了铠装热电偶电缆及铠装热电偶的要求。但不包括参考端密封、接口、连接件及其他配件的要求。

本标准适用于由一对廉金属偶丝构成的一般工业用铠装热电偶电缆和铠装热电偶。套管内多芯及单芯的铠装热电偶电缆和铠装热电偶也可采用本标准，此时本标准中的具体规定可以不采纳。

本标准不适用于贵金属的铠装热电偶电缆及铠装热电偶。对于核场一回路应用的特殊要求由其他标准规定。

#### 17. Mineral insulated thermocouple cables and thermocouples

This standard specifies the requirements for mineral insulated thermocouple cables and for mineral insulated thermocouples, but does not specify cold end seals, terminations, connections and other accessories.

This standard deals only with cables and thermocouples having one pair of base-metal conductors and is intended for use in general industrial applications. This standard does not deal with precious metal cables and thermocouples. Mineral insulated cables and thermocouples also are available with more than one pair of conductors or where there is one conductor and a sheath. In these cases the detailed prescriptions in this standard the dimensions may not necessarily apply.

This standard is not applicable to mineral insulated metal sheathed thermocouple cables and thermocouples of precious metal. The special requirements for nuclear primary loop applications are dealt with in other standards.



#### 18. 仪表用弹性敏感元件合金带材 JB/T 10078—2015

本标准规定了弹性敏感元件用合金带材的合金分类及牌号，尺寸，技术要求，试验方法，检验规则及包装、标志、质量证明书。本标准适用于制造仪表用弹性敏感元件（如膜片、膜盒、波纹管、弹簧管、涡卷弹簧、游丝等）的合金带材。

#### 18. The elastic sensitive element alloy strip for instrument

This standard specifies the alloy classification, brand, size, technical requirements, test methods, inspection rules, packaging, marks and quality certificates of elastic sensitive element alloy strip.

This standard is applicable to the manufacture of the instrument of the alloy strip for elastic sensitive element (such as diaphragm, capsule, bellows, spring tube, scroll spring, hairspring, etc).



#### 19. 铂铱元件 JB/T 12511—2015

本标准规定了铂铱元件的技术要求、试验方法、检验规则及供应方式、包装及标志。

本标准适用于电磁流量计用铂铱元件。

#### 19. Platinum-iridium component

This standard specifies the technical requirements, test methods, inspection rules, supply methods, packaging and marks of platinum-iridium component.

This standard is applicable to platinum-iridium component for electromagnetic flowmeter.



#### 20. 磁流变液 JB/T 12512—2015

本标准规定了磁流变液的术语、技术要求、试验方法、检验规则以及包装、标志、运输、贮存。

本标准适用于磁流变液的生产、检验及供货。

#### 20. Magnetorheological fluid

This standard specifies the terms, technical requirements, test methods, inspection rules, packaging, marking, transportation and storage of magnetorheological fluid.

This standard is applicable to the production, inspection and supply of magnetorheological fluid.



21. 仪表用耐腐蚀弹性合金 第1部分：耐硫化物腐蚀 0Cr15Ni40MoCuTiAlB 弹性合金带材 JB/T 5329.1—2015

本标准规定了耐硫化物腐蚀 0Cr15Ni40MoCuTiAlB 弹性合金的适用范围、引用标准、技术要求、试验方法、检验规则及产品的供应方式、包装、标志和质量证明书。

本标准适用于应用在含有硫化氢等介质中的仪表弹性元件（如弹簧管、波纹管、膜片、螺旋簧、蝶簧、板簧及发条等）之 0Cr15Ni40MoCuTiAlB 合金带材。

21. Corrosion resistant elastic alloy for instrument—Part 1: Sulfide corrosion resistant 0Cr15Ni40MoCuTiAlB elastic alloy strip

This standard specifies the application scope, reference standards, technical requirements, test methods, inspection rules, supply methods, packaging, marks and quality certificates of resistance to sulfide corrosion 0Cr15Ni40MoCuTiAlB elastic alloy.

This standard is applicable to manufacturing 0Cr15Ni40MoCuTiAlB alloy strip. The strip can be applied to elastic elements of instruments (such as spring tube, bellows, diaphragm, spiral spring, butterfly spring, leaf spring and spring) in medium containing hydrogen sulfide, etc.



22. 仪表用耐腐蚀弹性合金 第2部分：耐盐酸腐蚀 00Ni70Mo28V 弹性合金带材 JB/T 5329.2—2015

本标准规定了耐盐酸腐蚀 00Ni70Mo28V 弹性合金的使用范围、引用标准、技术要求、试验方法、检验规则及产品的供应方式、包装、标志和质量证明书。

本标准适用于应用在含有盐酸等还原介质中的弹性敏感元件（如膜片、膜盒、波纹管及其它弹性元件）之 00Ni70Mo28V 合金带材。

22. Corrosion resistant elastic alloy for instrument—Part 2: Hydrochloric acid resistant 00Ni70Mo28V elastic alloy strip

This standard specifies the application scope, reference standards, technical requirements, test methods, inspection rules, supply methods, packaging, marks and quality certificates of resistance to hydrochloric acid 00Ni70Mo28V elastic alloy.

This standard is applicable to the manufacture of alloy strip with the brand of 00Ni70Mo28V. The tape can be used for elastic sensing elements (such as diaphragm, bellows, bellows and other elastic elements) in reducing medium such as hydrochloric acid.



23. 仪表用耐腐蚀弹性合金 第3部分: 耐氯化物腐蚀 00Cr15Ni60Mo16W4 弹性合金带材 JB/T 5329.3—2015

本标准规定了耐氯化物腐蚀弹性合金的适用范围、引用标准、技术要求、试验方法检验规则及产品的供应方式、包装、标志和质量证明书。

本标准适用于应用在湿氯、各种氯化物和卤化物, 以及其它氧化—还原性介质中的弹性敏感元件之 00Cr15Ni60Mo16W4 合金带材。

23. Corrosion resistant elastic alloy for Instrument—Part 3: Chloride corrosion resistant 00Cr15Ni60Mo16W4 elastic alloy strip

This standard specifies the application scope, reference standards, technical requirements, test methods, inspection rules, supply methods, packaging, marks and quality certificates of resistance to chloride corrosion of 00Cr15Ni60Mo16W4 elastic alloy.

This standard is applicable to manufacturing 00Cr15Ni60Mo16W4 alloy strip. The strip can be used in wet chlorine, various chlorides and halides, as well as in other oxidation-reduction media.



24. 仪表轴尖用钴 40 稀土合金丝 JB/T 5400—2015

本标准规定了仪表轴尖用合金丝的技术要求、试验方法、检验规则、包装及标志。

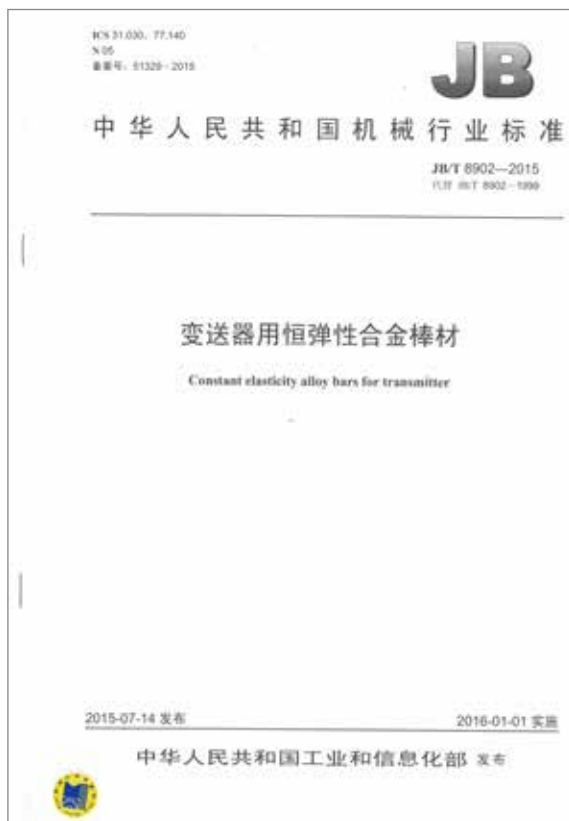
本标准适用于仪器仪表轴尖用钴 40 稀土合金丝。

24. Cobalt 40 rare earth alloy wires for the shaft tip of instrument

This standard specifies the technical requirements, test methods, inspection rules, packaging and marks of the instrument of the shaft tip with alloy wires.

This standard is applicable to the instrument of the shaft tip with cobalt 40 rare earth alloy wires.





## 25. 变压器用恒弹性合金棒材 JB/T 8902—2015

本标准规定了变压器用恒弹性合金棒材的技术要求、试验方法、检验规则、包装、标志和质量证明书。

本标准适用于电容式变送器及同类电容式变送器杯体用恒弹性合金冷拔磨光棒和锻态车光棒。

### 25. Constant elasticity alloy bars for transmitter

This standard specifies the technical requirements, test methods, inspection rules, packaging, marks and quality certificates of constant elasticity alloy bars for transmitter.

This standard is applicable to the manufacture of constant elastic alloy cold drawn polished rod and forged polished rod for capacitive transmitter and similar capacitive transmitter cup body.



## 26. 锗锰铜电阻合金裸线及聚酯漆包线 JB/T 5327—2014

本标准规定了锗锰铜电阻合金裸线和聚酯漆包线的品种、代号、尺寸规格、技术要求、试验方法、检验规则、标志、包装及贮存。本标准适用于制造使用温度范围为 0℃~70℃ 的标准电阻器和电阻元件用锗锰铜电阻合金裸线和聚酯漆包线。

### 26. Germanium-manganese-copper alloy wires for resistance and polyester enameled wires

This standard specifies the varieties, codes, dimensions, technical requirements, test methods, inspection rules, marks, packaging and storage of germanium-manganese-copper alloy wires for resistance and polyester enameled wires.

This standard is applicable to the manufacture of germanium-manganese-copper alloy wires for resistance and polyester enameled wires for standard resistors and resistance elements with using temperature range of 0℃~70℃.



#### 27. 镍铬基精密电阻合金裸线及聚酯漆包线 JB/T 5328—2014

本标准规定了镍铬基精密电阻合金裸线及聚酯漆包线的品种规格、技术要求、试验方法、检验规则和产品的供应方式、包装及标志。

本标准适用于制造精密线绕电阻元件的镍铬基精密电阻合金裸线及其聚酯漆包线，使用温度范围为  $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$ 。

#### 27. Ni-Cr-based bare wires and polyester wires for precision resistance alloys

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of Ni-Cr-based bare wires and polyester wires for precision resistance alloys.

This standard is applicable to the manufacture of Ni-Cr-based bare wires and polyester wires for precision resistance alloys with using temperature range of  $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$ .



#### 28. 直焊性聚氨酯漆包圆电阻线 JB/T 5403—2014

本标准规定了直焊性聚氨酯漆包圆电阻线的品种规格、技术要求、试验方法、检验规则和产品的包装及标志。

本标准适用于直焊性聚氨酯漆包锰铜和康铜圆电阻线。

#### 28. Solderable polyurethane enamelled round resistance wire

This standard specifies the product classification, technical requirements, test methods, inspection rules, packaging and marks of solderable polyurethane enamelled round resistance wire.

This standard is applicable to solderable polyurethane enamelled manganese copper and constantan round resistance wire.



#### 29. 热电偶用二硅化钼保护管 JB/T 7491—2014

本标准规定了二硅化钼热电偶保护管的技术要求、试验方法、检验规则、标志、包装和贮存。

本标准适用于氧化性、还原性或氧化—还原交替气氛、酸性气氛或酸性熔盐等各种腐蚀性介质中使用的二硅化钼保护管。

#### 29. Molybdenum disilicide protection tube for thermocouples

This standard specifies the technical requirements, test methods, inspection rules, marks, packaging and storage of molybdenum disilicide protection tube for thermocouples.

This standard is applicable to molybdenum disilicide protective tube for thermocouples, which can be used in various corrosive media, such as oxidizing, reducing or oxidation-reduction alternating atmosphere, acid atmosphere or acid molten salt.



#### 30. 热电偶用补偿电缆 JB/T 7495—2014

本标准规定了热电偶用补偿电缆的产品品种、技术要求、试验方法、检验规则等。

本标准适用于配用 S、R、K、E、J、T、N 型热电偶的补偿电缆，其绝缘层和护套均以聚氯乙烯作为主体材料。其它类型的热电偶补偿电缆也可参照采用。

#### 30. Extension and compensating cables for thermocouples

This standard specifies the product classification, technical requirements, test methods, inspection rules of extension and compensating cables for thermocouples.

This standard is applicable to compensating cables equipped with Types S, R, K, E, J, T, N thermocouples. PVC is used as the main material for the insulation layer and sheath. Other types of thermocouple compensation cable can also be used as reference.



### 31. 聚酯漆包圆电阻线 JB/T 9494—2014

本标准规定了制造温度指数为 155 的聚酯漆包圆电阻线的产品规格、技术要求、试验方法、检验规则、供应方式、包装及标志。本标准适用于温度指数为 155 的聚酯漆包圆电阻线的制造。

#### 31. Polyester enamelled round resistance wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of polyester enamelled round resistance wires with manufacturing temperature index of 155. This standard is applicable to the manufacture of polyester enamelled round resistance wires with manufacturing temperature index of 155.



### 32. 钨铼热电偶用补偿导线 JB/T 9496—2014

本标准规定了钨铼热电偶用补偿导线的产品分类、技术要求、试验方法、检验规则、标志、包装等。

本标准适用于与钨铼 3—钨铼 25 热电偶（简称 D 型）配用的补偿导线（型号为 DC）、与钨铼 5—钨铼 26 热电偶（简称 C 型）配用的补偿导线（型号为 CC）和与钨铼 5—钨铼 20 热电偶（简称 A 型）配用的补偿导线（型号为 AC）。补偿导线的绝缘层与护层以聚氯乙烯、无碱玻璃丝及聚四氟乙烯为主体材料。

#### 32. The compensating extension wires for tungsten—rhenium thermocouples

This standard specifies the product classification, technical requirements, test methods, inspection rules, packaging and marks of the compensating extension wires for tungsten—rhenium thermocouples.

This standard is applicable to the compensation conductor (model: DC) for Tungsten-3% Rhenium/ Tungsten-25% Rhenium thermocouples (referred to as Type D), the compensation conductor (model: CC) for Tungsten-5% Rhenium/ Tungsten-26% Rhenium thermocouples (referred to as Type C) and the compensation conductor (model: AC) for Tungsten-5% Rhenium/ Tungsten-20% Rhenium thermocouples (referred to as Type A). The insulating layer and protective layer of compensation conductor are made of PVC, alkali free glass fiber and polytetrafluoroethylene.



### 33. 包覆绝缘圆电阻线 JB/T 9498—2014

本标准规定了用蚕丝或浸渍无碱玻璃丝聚酯漆包或未漆包的圆电阻合金线的品种规格、技术要求、适应方法、检验规则和产品供应方式、包装及标志。

本标准适用于制造用蚕丝或浸渍无碱玻璃丝包覆绝缘的聚酯漆包或未漆包的圆电阻合金线。

#### 33. Covered insulation round resistance wires

This standard specifies the specifications, technical requirements, adaptation methods, inspection rules, supply methods, packaging and marks of round resistance alloy wires with silk or impregnated alkali free glass fiber polyester enamelled or unpainted.

This standard is applicable to polyester enamelled or unpainted round resistance alloy wire with silk or impregnated alkali free glass fiber for insulation.



### 34. 镍铬铁温度磁补偿合金带材 JB/T 9500—2014

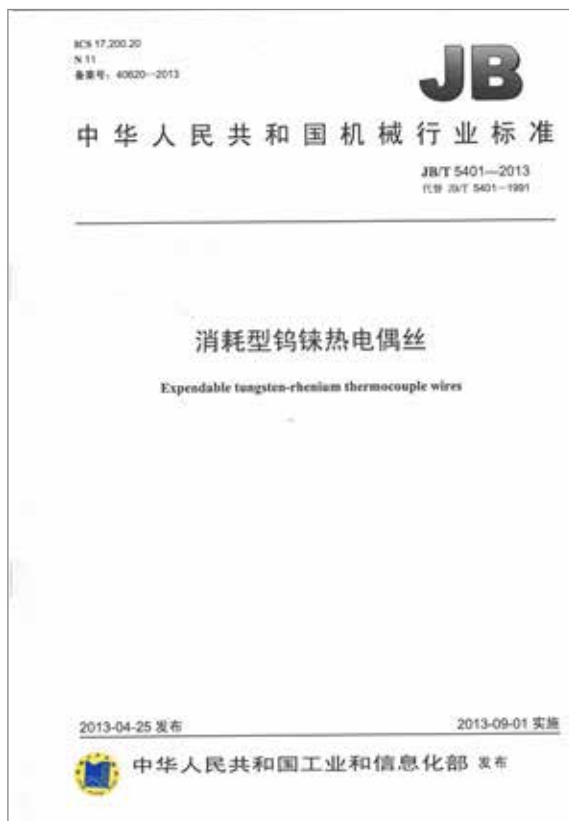
本标准规定了镍铬铁温度磁补偿合金冷轧带材的技术条件、试验方法、检验规则、标志、包装和质量证明书。

本标准适用于电度表及里程表用温度磁补偿合金冷轧带材。

#### 34. Ni-Cr-Fe alloyed strips for temperature-magnetic compensation

This standard specifies the technical conditions, test methods, inspection rules, marks, packages and quality certificates of Ni-Cr-Fe alloyed strips for temperature-magnetic compensation.

This standard is applicable to temperature magnetic compensation alloy cold rolled strip for watt hour meter and odometer.



### 35. 消耗型钨铼热电偶丝 JB/T 5401—2013

本标准规定了消耗型钨铼热电偶丝的产品分类、技术要求、试验方法、检验规则、供应方式、包装及标志。

本标准适用于制造消耗型钨铼 3—钨铼 25 (D 型)、钨铼 5—钨铼 26 (C 型) 热电偶用偶丝。

#### 35. Expendable tungsten-rhenium thermocouple wires

This standard specifies the product classification, technical requirements, test methods, inspection rules, supply methods, packaging and marks of expendable tungsten-rhenium thermocouple wires.

This standard is applicable to the manufacture of consumable tungsten-3% rhenium/tungsten-25% rhenium (Type D) and tungsten-5% rhenium/tungsten 26%- rhenium (Type C) thermocouple couple wires.

# 沈阳仪表科学研究所有限公司

## Shenyang Academy of Instrumentation Science Co.,Ltd.

**公司名称：沈阳仪表科学研究所有限公司**  
**Company Name:Shenyang Academy of Instrumentation Science Co.,Ltd.**

沈阳仪表科学研究所有限公司是始建于 1961 年 5 月 5 日的国家级科研院所，原隶属于机械工业部，现隶属于中国机械工业集团公司。从 2003 年开始，先后重组了杭州照相机械研究所、秦皇岛视听机械研究所、沈阳真空技术研究所，被国机集团定格为“核心业务企业”。

本公司是全国仪器仪表元器件和仪表工艺的归口单位，“传感器国家工程研究中心”、“国家仪器仪表元器件产品质量监督检验中心”、“国家照相机械产品质量检测中心”、“国家真空设备质量监督检验中心”、“机械工业仪器仪表元器件标准化技术委员会”、“机械工业电影和电教机械标准化技术委员会”、“中国仪器仪表学会仪器仪表元件分会、仪表工艺分会”、“中国仪器仪表行业协会传感器专业协会”、“中国文化办公设备制造行业协会电影电教设备专业分会”均设在本院。

本公司经过半个世纪的发展，共完成科研项目 1742 项，获得国家、部、省、市等各项奖励 366 项，其中国家级发明奖和国家科技进步奖 11 项，省部级科技进步奖 96 项，专利 189 项。我院作为四个标准化技术委员会的挂靠单位，多年来组织起草标准 300 多项，其中国家标准 70 多项，涵盖了我院的传感器、仪表、光学器件、弹性元件、金属波纹膨胀节、智能装备等产品。

本公司的主要产品及技術有：

传感器，变送器，智能仪器仪表，光—机—电一体化产品，仪表成套系统及相关技术；金属波纹管、膨胀节，特种民用或军用波纹管组件，换热器，弹性元件工艺装备及相关技术；物理、化学、电脉冲清洗设备及技术，管道仪器，传感器工艺装备，划片机等专用设备及相关技术；光学薄膜产品、滤光片、非球面透镜，数码镜头等光学元器件及相关技术。照相机，光学仪器，多种光学镜头的设计，制造技术；电影摄影机，放映摄影镜头，视听设备的设计及制造技术等处于国内领先优势，并且积累了一批市场潜力大的高技术产品。

本公司是沈阳市火炬型科研院所、高新技术企业、守

China United Engineering Corporation Limited is a large-scale scientific and technology company, its core division is the Second Design & Research Institute of the former Ministry of Machinery Industry. The corporation comprises many national Class A investigation and designing divisions, including the Third Design & Research Institute of the United Machinery Industry, the Eleventh Design & Research Institute of the United Machinery Industry (China United Northwest Engineering Design & Research Institute), China Jikan Geotechnical Institute, etc. The corporation belongs to a large state-owned industrial group reporting directly to the Central Government, and also a Top 500 enterprises-the China National Machinery Industry Corporation, which headquartered in Hangzhou.

CUC has over 6000 employees now, among which 95% are professional technical staffs. There once had been seven academicians from the Chinese Academy of Engineering and the Chinese Academy of Science and seven National Investigation and Designing masters who had worked in CUC. Staffs in service now including one academician from the Chinese Academy of Engineering, one National Investigation and Designing master, one specialist of the National "New Century Project of Thousands of Talents", 104 specialists enjoying the special government subsidy from the State Council, 1100 technical staffs with senior technical titles (including 166 professorate senior engineers), 1529 technical staffs own first-grade national registered engineering certificates of various different majors.CUC owns comprehensive certificates (Grade-A) of qualification for Engineering Design, Engineering Cost Consulting, General Contact Engineering Projects of Construction, comprehensive certificate of qualification for Project Supervision, comprehensive certificates (Grade-A) of qualification for Urban Planning, Multi-Industries Engineering Consulting, has license of Special Equipment Design, owns direct operation right of running and developing business.

As one of the earliest large state-owned comprehensive design enterprises, the business scope of CUC has been developed into over twenty industries of construction and power from the single mechanical industry through over 50 years of development and progress in difficulties. The service style also is expanded from engineering design to engineering consulting, investigation, planning, construction supervision, project management, building construction, procurement, trial run and general contract of project, etc. In recent years, to face the challenge after joining the WTO and fit for the new situation of the reform and development of the investigation and designing industry in



合同重信用单位、博士创业基地、沈阳市精神文明先进单位、辽宁省精神文明先进单位，国资委先进基层党组织。企业信用等级和银行资信等级 AAA 级。

本公司通过了 GB/T19001-2000 质量体系认证。弹性元件及传感器通过了军用 GJB9001A-2001 质量认证。企业已建立了全国性营销网络，产品已广泛应用于航天、石化、冶金、水电、供热、供电、煤炭、轻工、建筑、制药等行业，部分产品已远销国外。

China, the corporation regulates its business structure continuously. In addition to promote its consulting business, the corporation focuses on the development of general contract of the project and project management, improves its EPC capability greatly and takes active part in the international competition.

For many years, CUC follows the operation conception of "Create value for the client" and the quality policy of "Design consummation, construct classicality, exceed expectation and pursue excellence", completes over 20,000 projects; works out and take part in the establishment of over 100 national, local and industrial standards and specifications; obtains 28 awards of scientific & technological progress of China (two 1st rank awards), and over 100 awards of excellent engineering investigation and designing of China and over 1000 provincial awards.

CUC is awarded with "contract abiding & trustworthy enterprise" in successive years, and obtains the enterprise credit assessment with grade of AAA; the corporation is listed in the top one hundred enterprises of over 10,000 investigation and designing enterprises selected by the Ministry of Construction based on their comprehensive strength and business income in successive years; and the corporation is listed in the top 60 engineering designing enterprises concluded by the American Magazine ENR in successive years.

CUC will depend on the comprehensive advantages, providing the owners with all kinds of construction projects at home and abroad all-round services to the entire process.

## 联系人及联系方式

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## 标准 Standards

### 主持制定或参与的标准



#### 1、波纹金属软管通用技术条件 GB/T 14525—2010

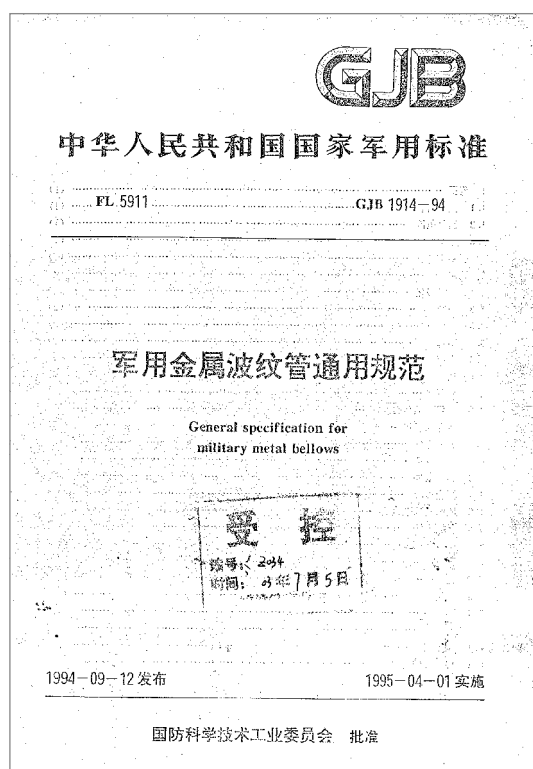
本标准规定了波纹金属软管的术语和定义，分类，要求，检验方法，检验规则，标志、包装、运输、和贮存。

本标准适用于管道系统中，为补偿位移和安装偏差、吸收振动及降低噪声所采用的波纹金属软管。

#### 1. General specification for corrugated metal hose assemblies

This standard specifies the terms and definitions, classification, requirements, inspection methods, inspection rules, marking, packaging, transportation and storage of corrugated metal hose.

This standard is applicable to corrugated metal hose used in pipeline system to compensate displacement and installation deviation, absorb vibration and reduce noise.



#### 2. 军用金属波纹管通用规范 GJB/T 1914—1994

本规范规定了军用金属波纹管的分类、要求、质量保证规定、交货准备等。

本规范适用于仪器仪表中作为弹性敏感元件、补偿元件、密封元件及连接元件等用的 U 型波纹管。

#### 2. General specification for military metal bellows

This specification specifies the classification, requirements, quality assurance provisions, delivery preparation, etc. of military metal bellows.

This specification is applicable to U-shaped bellows used as elastic sensing element, compensation element, sealing element and connecting element in instruments.



### 3. 军用电沉积波纹管通用规范 GJB/T 2817A-2012

本规范规定了采用电沉积方法制造的金属波纹管的要求、质量保证规定、交货准备和说明事项等。

本规范适用于在仪器仪表及传感器中作为弹性敏感元件、补偿元件、密封元件、连接元件用的波纹管。

#### 3. General specification for military electroforming bellows

This specification specifies the requirements, quality assurance regulations, delivery preparation and instructions of metal bellows manufactured by electroforming method. This specification is applicable to bellows used as elastic sensing element, compensating element, sealing element and connecting element in instruments and sensors.



### 4. 潜艇核动力装置阀用多层金属波纹管规范 GJB/T 5323-2004

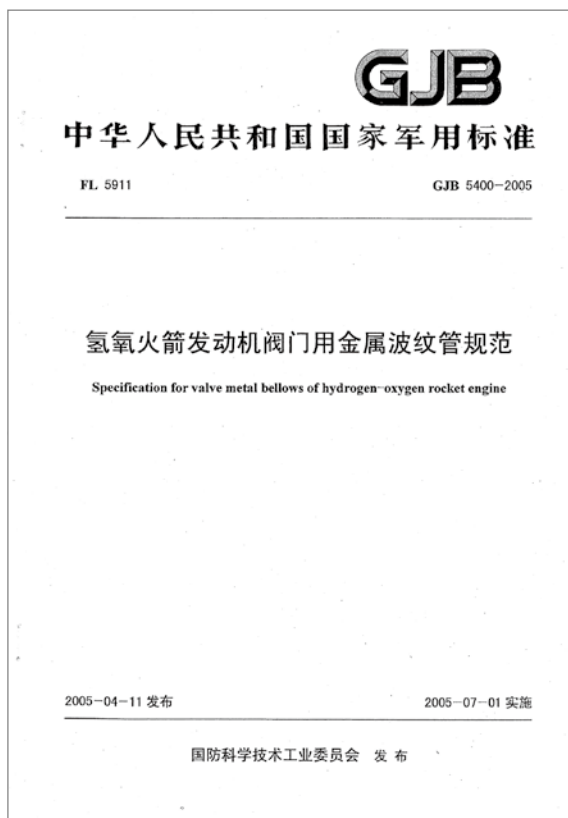
本规范规定了潜艇核动力装置阀用多层金属波纹管的要求、质量保证规定、交货准备等。

本规范适用于波纹管的设计、制造与验收。

#### 4. Specification for multiplayer metal bellows for submarine nuclear-powered installation valve

This specification specifies the requirements, quality assurance regulations, delivery preparation etc. of multilayer metal bellows ( for submarine nuclear power plant valves.

This specification is applicable to the design, manufacture and acceptance of bellows.



#### 5. 氢氧火箭发动机阀门用金属波纹管规范 GJB/T 5400-2005

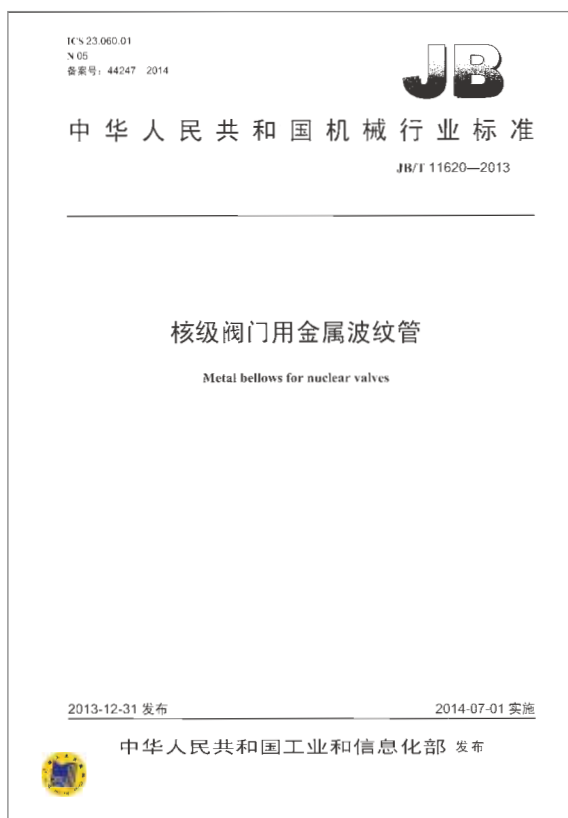
本规范规定了氢氧火箭发动机阀门用金属波纹管的要求、质量保证规定、交货准备等。

本规范适用于波纹管的试制、制造、检验与验收。

#### 5. Specification for valve metal bellows hydrogen-oxygen rocket engine

This specification specifies the requirements, quality assurance regulations, delivery preparation etc. of metal bellows for hydrogen oxygen rocket engine valves.

This specification is applicable to the trial production, manufacturing, inspection and acceptance of bellows.



#### 6. 核级阀门用金属波纹管 JB/T 11620-2013

本标准规定了核级阀门用金属波纹管及其组件的要求、试验方法、检验规则及标记与包装。

本标准适用于核级截止阀、闸阀用波纹管及其组件。其他类型核级阀用波纹管也可参照试用。

本标准不适用与非金属或低熔点材料制造的波纹管。

#### 6. Metal bellows for nuclear valves

This standard specifies the requirements, test methods, inspection rules, marking and packaging of metal bellows ( and its components for nuclear class valves.

This standard is applicable to bellows and its components for nuclear class stop valves and gate valves. Other types of bellows for nuclear valves can also be used for reference. This standard is not applicable to bellows made of non-metallic or low melting point materials.



#### 7. 金属波纹管 JB/T 6169—2006

本标准规定了金属环形波纹管的分类原则、系列划分原则和使用性能的基本要求及试验方法。

本标准适用于在仪器仪表及传感器中使用的波纹管（简称敏感类波纹管）；也适用于各类补偿器中使用的波纹管、密封隔离器件、弹性支承器件、减震器以及挠性连接器件中用的波纹管（简称通用类波纹管）。

#### 7. Metal bellows

This standard specifies the classification principle, series division principle, basic requirements and test methods for use performance of metal ring bellows.

This standard is applicable to the bellows used in instruments and sensors (hereinafter referred to as sensitive bellows); it is also applicable to the bellows used in various compensators, seal isolation devices, elastic support devices, shock absorbers and flexible connectors (hereinafter referred to as general bellows).



#### 8. 阀门用波纹管 JB/T 10507—2005

本标准规定了阀门用金属波纹管及其组件的术语和定义、分类与标记、要求、试验方法、检验规则及标记与包装。

本标准适用于截止阀、闸阀用波纹管及其组件。其他类型阀门用波纹管也可参照使用。

本标准不适用于非金属波纹管及非阀门用波纹管。

#### 8. The metal bellows for valves

This standard specifies the terms and definitions, classification and marking, requirements, test methods, inspection rules, marking and packaging of metal bellows (and its components for valves).

This standard is applicable to bellows and its components for stop valves and gate valves. Bellows for other types of valves can also be used as reference.

This standard is not applicable to non-metallic bellows and non valve bellows.



#### 9. 多层金属波纹管膨胀节 JB/T 6171—2013

本标准规定了多层金属波纹管膨胀节的术语和定义、产品分类、要求、试验方法、检验规则及标志、包装、贮存和运输。

本标准适用于多层金属波纹管膨胀节。

本标准代替 JB/T 6171—1992，于 2013 年 4 月 25 日发布，同年 9 月 1 日实施。

#### 9. Multiply metal bellows expansion joints

This standard provides multiply metal bellows expansion joints terms and definitions, product classification, requirements, test methods, inspection rules and marking, packaging, storage and transportation.

This standard is applicable to multiply metal bellows expansion joints.

This standard, which replaces JB/T 6171-1992, was issued on 25 April 2013 and implemented on 1 September 2013.



#### 10. 高压组合电器用金属波纹管补偿器 GB/T 30092—2013

本标准规定了高压组合电器用金属波纹管补偿器的产品分类、要求、试验方法、检验规则及标志、包装和贮存。

本标准适用于高压组合电器用金属波纹管补偿器。

本标准于 2013 年 12 月 17 日首次发布，2014 年 5 月 1 日实施。

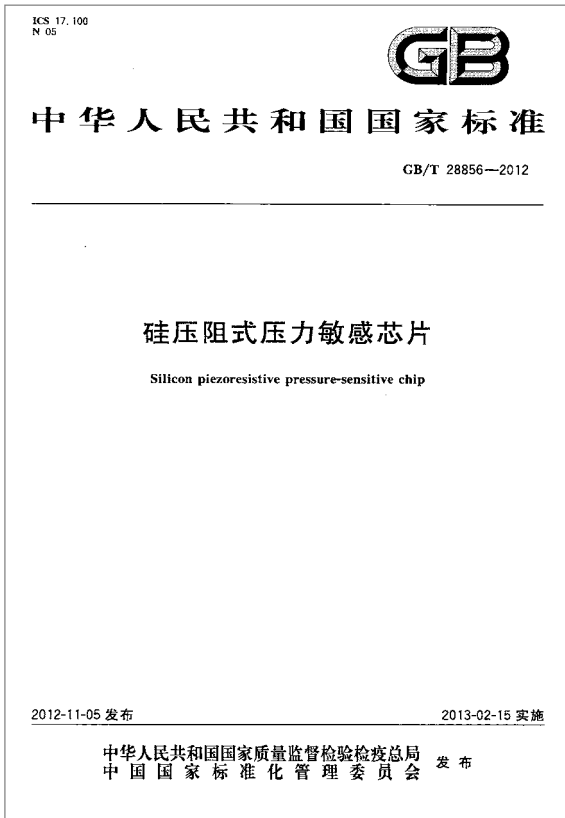
自标准实施以来，已被 GIS/GIL 制造商作为试验及验收的依据，行业影响力逐年提升。

#### 10. Metal bellows compensator used in high voltage combined electrical appliance

This standard specifies the metal bellows compensator used in high voltage combined electrical appliance product classification, requirements, test methods, inspection rules, marking, packaging and storage of metal bellows compensators for high voltage combined electrical appliances.

This standard is applicable to metal bellows compensators for high voltage combination electrical appliances.

This standard was first issued on December 17, 2013 and implemented on May 1, 2014. Since the implementation of the standard, it has been used by GIS/GIL manufacturers as the basis for testing and acceptance. The industry influence has been increasing year by year.



11. 硅压阻式压力敏感芯片 GB—T 28856—2012

本标准规定了硅压阻式压力敏感芯片术语和定义、分类、基本参数、要求、试验方法、检验规则、标志、包装、运输及贮存。

11. Silicon piezoresistive pressure-sensitive chip

This standard provides terms and definitions, classification, basic parameters, requirements, test methods, inspection rules, marking, packaging, transportation and storage of silicon piezoresistive pressure-sensitive chips.



12. 压力传感器试验方法 GB—T 15478—2015—bpg

本标准规定了压力传感器性能的试验条件、试验的一般规定、试验项目及试验方法、数据计算及处理。

12. Test methods of the performances for pressure transducer/ sensor

This standard provides test conditions, general requirements, test items and test methods, data calculation and processing for pressure sensor performance.



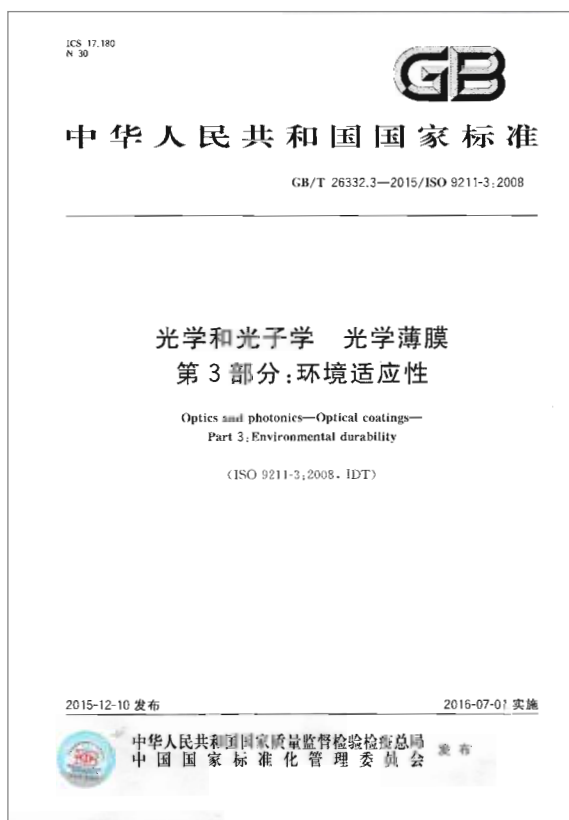


### 13. 光学和光子学光学薄膜第2部分: 光学特性 GB/T26332.2—2015

本标准规定了在光学元器件及基片表面镀制的光学薄膜的应用功能分类、技术指标的标准表述形式、常规特性及试验测量方法。

#### 13. Optics and photonics-Optical coatings-Part2:Optical properties

This standard specifies the classification of application functions, the standard expression form of technical indicators, general characteristics and test measurement methods of optical thin films coated on the surface of optical components and substrates.



### 14. 光学和光子学光学薄膜第3部分: 环境适应性 GB/T26332.3—2015

本标准规定了在光学元器件及基片表面镀制的光学薄膜的应用功能分类、技术指标的标准表述形式、常规特性及试验测量方法。

#### 14. Optics and photonics-Optical coatings-Part3: Environmental durability

This standard specifies the classification of application functions, the standard expression form of technical indicators, general characteristics and test measurement methods of optical thin films coated on the surface of optical components and substrates.

# 广州机械科学研究院有限公司

Guangzhou Mechanical Engineering Research Institute Co., Ltd.

## 公司名称：广州机械科学研究院有限公司

Company Name: Guangzhou Mechanical Engineering Research Institute Co., Ltd.

广州机械科学研究院有限公司是中央管理企业、世界500强——国机集团下属国机智能科技有限公司的全资子公司，是原机械部直属大型综合转制科研院所。公司拥有产业技术基础公共服务平台、国家机器人检测与评定中心（广州）、国家自动化装备质量监督检验中心、国家橡塑密封工程技术研究中心、高端橡塑密封元件研发检测服务平台、工业摩擦润滑技术国家地方联合工程研究中心、博士后科研工作站、院士工作站、省级重点实验室等一系列科技创新和行业服务平台，同时是国家机器人标准化总体组和咨询专家副组长单位、国家智能制造标准化总体组和咨询专家单位、中国液压气动密封标准化技术委员会委员单位、机械工业橡塑密封件标准化技术委员会主任委员单位。公司承担了大批科技攻关项目，取得科研成果千余项，有200多项成果荣获各级奖励。

公司是国家首批创新型企业、国家高新技术企业、国家火炬计划重点高新技术企业、全国企事业知识产权试点单位和广东省装备制造业重点培育企业。截止2018年底，公司拥有400余名研发人员，其中7名国务院津贴专家，32名教授级高工，30余名博士，从事基础应用技术、平台技术、前瞻性技术和工程应用技术的研发，同时外聘5位院士和4位国内外行业知名专家作为特聘科技专家。

公司主营业务主要有智能、检测、三基三大业务板块，形成了大特精专橡塑密封产业、润滑产业、液压元件和液压装备（系统）产业、机电一体化、汽车零部件检测、设备状态检测、工业机器人产业等七个独立的产业创新基地。近60年来公司伴随着国家科技创新的步伐，开拓进取，潜心于技术创新并保持优势，实行富有活力的内部管理机制，各个产业不断做大做强，在机械基础技术、基础材料、基础元件领域形成了扎实的行业技术积淀，在工业机器人及智能制造、液压、密封、润滑、设备润滑状态监测、汽车零部件检测、工业机器人检测等建立起很高的行业技术地位和很强的核心竞争力，各产业在同行中所处的地位名列前茅。其中设备润滑状态监测产业地位位居全国第一，

Guangzhou Mechanical Engineering Research Institute Co., Ltd. is a wholly-owned subsidiary company of SINOMACH Intelligent Technology Co., Ltd., SINOMACH is a central management enterprise and a top 500 company in the world. It is a large-scale integrated transformation research institute directly under the former Ministry of Machinery. The company has the basic public service platform of industrial technology, the National Robot Inspection and Evaluation Center (Guangzhou), the National Automation Equipment Quality Supervision and Inspection Center, the National Rubber and Plastic Sealing Engineering Research Center, the high-end Rubber and Plastic Sealing Component Research and Development Service Platform, and the National and Local Joint Engineering Research of Industrial Friction and Lubrication Technology. Research center, post-doctoral research workstation, academican workstation and provincial key laboratory are a series of scientific and technological innovation and industry service platforms. At the same time, they are the National Robot Standardization Group and the Deputy Leader of Consulting Experts Unit, the National Intelligent Manufacturing Standardization Group and Consulting Experts Unit, and the Standardization Technology of Hydraulic and Pneumatic Seals in China. Members of the Technical Committee and Chairman of the Technical Committee for Standardization of Rubber and Plastic Seals in Machinery Industry. The company undertakes a large number of key scientific and technological projects, has achieved more than 1000 scientific research achievements, more than 200 achievements have been awarded at all levels.

The company is the first batch of innovative enterprises, national high-tech enterprises, key high-tech enterprises of the National Torch Plan, pilot units of intellectual property rights of enterprises and institutions nationwide, and key cultivation enterprises of equipment manufacturing industry in Guangdong Province. By the end of 2018, the company has more than 400 R&D personnel, including 7 State Council special sticker experts, 32 professor-level senior engineers and more than 30 doctorates, engaged in research and development of basic application technology, platform technology, forward-looking technology and engineering application technology. At the same time, 5 academicians and 4 well-known experts from domestic and foreign industries are employed as special science and technology experts.

The company's main business is mainly intelligent, testing and three basic business sectors, forming seven independent industrial innovation bases, such as rubber and plastic sealing industry, lubrication industry, hydraulic components and hydraulic equipment (system) industry, mechatronics, automotive parts testing, equipment status testing, industrial robotics industry and so on. In the past 60

工业机器人及智能制造产业销售规模全国第二，大特精密封技术水平及产业地位位居全国第一，金属加工润滑材料产业地位居全国前三。

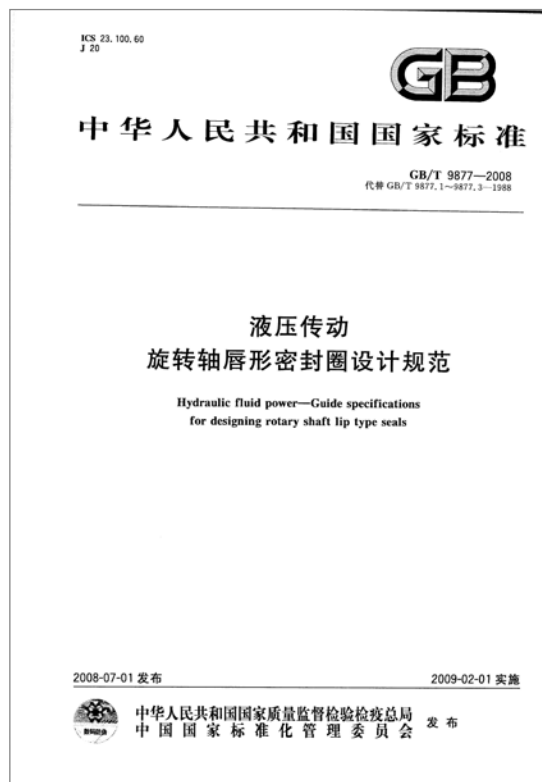
years, with the pace of national scientific and technological innovation, the company has been pioneering and enterprising, devoted to technological innovation and maintained its advantages, implemented a dynamic internal management mechanism, and the various industries have been expanding and strengthening continuously. It has formed a solid accumulation of industrial technology in the field of mechanical basic technology, basic materials and basic components, and has been applied in industrial robots. Intelligent manufacturing, hydraulic, sealing, lubrication, equipment lubrication condition monitoring, automotive parts testing, industrial robot testing and other industries have established a high technical status and strong core competitiveness, each industry ranks first in the same industry. Among them, equipment lubrication status monitoring industry ranks first in the country, industrial robots and intelligent manufacturing industry sales scale is second in the country, technology level and industrial status of large and super precision sealing industry ranks first in the country, and metal processing lubrication material industry ranks the top three in the country.

## 联系人及联系方式 Contact Person and Information

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## 标准 Standards



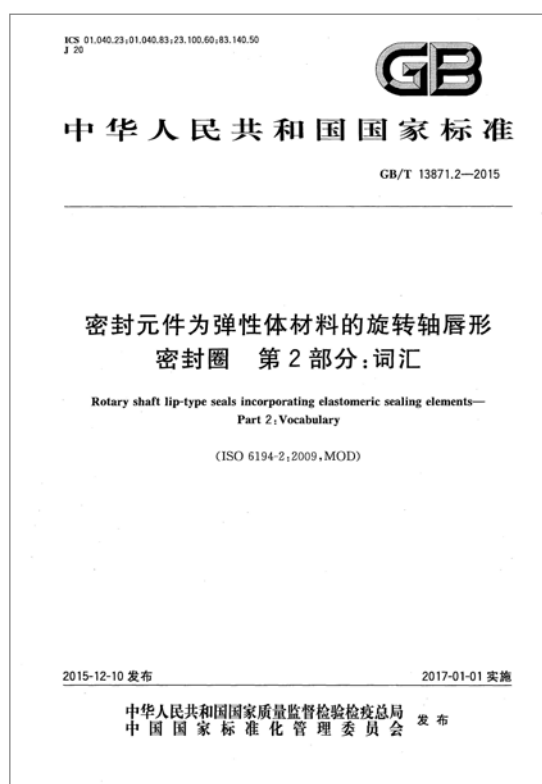
1. GB/T 9877—2008 液压传动 旋转轴唇形密封圈设计规范（主持修订）

本标准规定了旋转轴唇形密封圈结构设计的基本要求，包括基本尺寸符合 GB/T 13871.1 的旋转轴唇形密封圈的装配支撑部、主唇、副唇、骨架、弹簧等的设计要求及尺寸系列。此外，本标准还给出了常规设计的主要参数和特殊设计参数（如唇口回流形式设计等）。

本标准适用于安装在设备中的旋转轴端，对液体或润滑脂起密封作用的旋转轴唇形密封圈，其密封腔压力不大于 0.05MPa。

Hydraulic fluid power - Guide specifications for designing rotary shaft lip type seals  
This standard specifies the basic requirements for the structural design of the rotary shaft lip type seals, including the design requirements and size series of the assembly support part, main lip, auxiliary lip, skeleton, spring of the rotary shaft lip type seals in accordance with GB/T 13871.1. In addition, the main parameters of conventional design and special design parameters (such as lip reflux design, etc.) are given in this standard.

This standard is applicable to the rotary shaft lip type seals installed in the equipment, which can seal the liquid or grease. The pressure of the sealing chamber is not more than 0.05 MPa.



2. GB/T 13871.2—2015 密封元件为弹性体材料的旋转轴唇形密封圈 第2部分：词汇（参与制定）

本部分界定了密封元件为弹性体材料的旋转轴唇形密封圈的词汇，其中部分术语和定义见 GB/T 17446。

本部分适用于低压状态（空气侧压力为大气压，液体侧压力高于大气压（0 KPa ~ 30KPa）（参见 ISO 6194-1:2007 的 6.1）下使用的密封元件为弹性体的旋转轴唇形密封圈。

Rotary shaft lip-type seals incorporating elastomeric sealing elements—Part 2: Vocabulary

This section defines the vocabulary of rotary shaft lip type seals incorporating elastomeric sealing elements. For some terms and definitions, see GB/T 17446.

This part is suitable for rotary shaft lip type seals incorporating elastomeric sealing elements under low pressure (air side pressure is atmospheric pressure, liquid side pressure is higher than atmospheric pressure (0 KPa-30 KPa) (see ISO 6194-1:2007 6.1).



3. GB/T 13871.5—2015 密封元件为弹性体材料的旋转轴唇形密封圈 第5部分：外观缺陷的识别（参与制定）

本部分规定了密封元件为弹性体材料的旋转轴唇形密封圈的外观缺陷的类型。这些外观缺陷可能会减弱密封圈的作用。其目的是便于制造商和用户探讨这些缺陷在不同场合下使用的密封圈的影响。

本部分适用于低压状态（空气侧压力为大气压、液体侧压力高于大气压（0 KPa ~ 30KPa）下使用的密封元件为弹性体的旋转轴唇形密封圈。

Rotary shaft lip-type seals incorporating elastomeric sealing elements—Part 5: Identification of visual imperfections

This section specifies the type of appearance defect of rotary shaft lip type seals incorporating elastomeric sealing elements. These appearance defects may weaken the function of the sealing ring. The purpose is to facilitate manufacturers and users to explore the impact of these defects on sealing rings used in different situations.

This part is suitable for rotary shaft lip type seals incorporating elastomeric sealing elements under low pressure (air side pressure is atmospheric pressure, liquid side pressure is higher than atmospheric pressure (0 KPa-30 KPa)).



4. GB/T 21283.6—2015 密封元件为热塑性材料的旋转轴唇形密封圈 第6部分：热塑性材料与弹性体包覆材料的性能要求（参与制定）

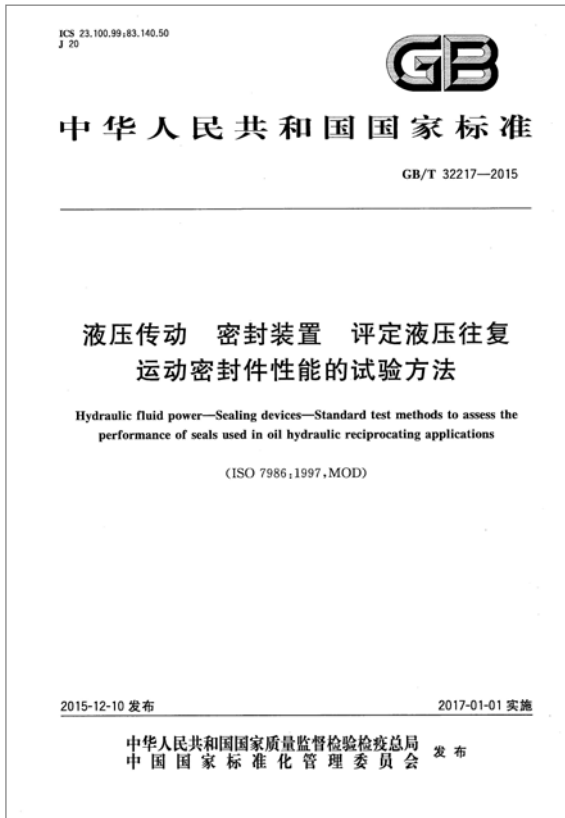
本部分规定了密封元件为热塑性材料的旋转轴唇形密封圈用热塑性材料聚四氟乙烯（简称PTFE）与弹性体包覆橡胶材料的分类、要求、检验规则及包装和贮存。

本部分适用于密封元件是以热塑性材料聚四氟乙烯为基材制成的旋转轴唇形密封圈。

Rotary shaft lip-type seals incorporating thermoplastic sealing elements—Part 6: Properties requirements for the thermoplastic and elastic material

This section specifies the classification, requirements, inspection rules, packaging and storage of thermoplastic PTFE and elastomer-coated rubber materials for rotary shaft lip type seals incorporating thermoplastic sealing elements.

This part is suitable for rotary shaft lip type seals made of thermoplastic PTFE as base material.



5. GB/T 32217—2015 液压传动 密封装置 评定液压往复运动密封件性能的试验方法（主持制定）

本标准规定了评定液压往复运动密封件性能的试验条件和方法。本标准适用于以液压油液为传动介质的液压往复运动密封件性能的评定。

Hydraulic fluid power—Sealing devices—Standard test methods to assess the performance of seals used in oil hydraulic reciprocating applications  
This standard specifies the test conditions and methods for evaluating the performance of hydraulic reciprocating motion seals.  
This standard is suitable for evaluating the performance of hydraulic reciprocating motion seals with hydraulic oil as transmission medium.



6. GB/T 33154—2016 风电回转支承用橡胶密封圈（参与制定）

本标准规定了风电回转支承用橡胶密封圈的要求、检验规则以及标志、包装、运输、贮存。

本标准适用于风电变桨与偏航回转支承用橡胶密封圈。

Rubber seals of slewing bearing used in the wind power industry  
This standard specifies the requirements, inspection rules, signs, packaging, transportation and storage of rubber sealing rings for wind power slewing bearings.  
This standard is applicable to rubber sealing rings for wind power pitch and yaw slewing support.





7. GB/T 15242.1-2017 液压缸活塞和活塞杆动密封装置尺寸系列 第 1 部分：同轴密封件尺寸系列和公差（主持修订）

本部分规定了液压缸活塞和活塞杆动密封装置中活塞用同轴密封件、活塞杆用同轴密封件的术语和定义、字母代号、标记、尺寸系列和公差。

本部分适用于以水基或油基为传动介质的液压缸活塞和活塞杆动密封装置用往复运动同轴密封件。

Dimensions series of rod and piston dynamic seals for hydraulic cylinders—Part 1: Dimensions and tolerances of co-axial seals for reciprocating applications

This section defines the terms and definitions, alphabetical code, mark, dimension series and tolerance of coaxial seals for piston and piston rod in dynamic sealing device of hydraulic cylinder piston and piston rod.

This part is suitable for reciprocating coaxial seals for hydraulic cylinder piston and piston rod dynamic seals with water-based or oil-based transmission media.



8. GB/T 15242.2-2017 液压缸活塞和活塞杆动密封装置尺寸系列 第 2 部分：支承环尺寸系列和公差（主持修订）

本部分规定了液压缸活塞和活塞杆动密封装置用支承环的术语和定义、代号、系列号、标记、尺寸系列和公差。

本部分适用于以水基或油基为传动介质的液压缸密封装置中采用的聚甲醛支承环、酚醛树脂夹织物支承环和填充聚四氟乙烯 (PTFE) 支承环，使用温度范围分别为  $-30^{\circ}\text{C} \sim +100^{\circ}\text{C}$ 、 $-60^{\circ}\text{C} \sim +120^{\circ}\text{C}$ 、 $-60^{\circ}\text{C} \sim +150^{\circ}\text{C}$ 。

Dimensions series of rod and piston dynamic seals for hydraulic cylinders—Part 2: Dimensions and tolerances of bearing rings

This section specifies the terms and definitions, codes, serial numbers, markings, size series and tolerances of supporting rings for piston and piston rod dynamic sealing devices of hydraulic cylinders.

This part is suitable for the polyformaldehyde supporting ring, phenolic resin-clad fabric supporting ring and filled polytetrafluoroethylene (PTFE) supporting ring used in the hydraulic cylinder sealing device with water or oil-based transmission medium. The operating temperature ranges from  $-30^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ ,  $-60^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ ,  $-60^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$ .





9. GB/T 36520.1—2018 液压传动 聚氨酯密封件尺寸系列 第1部分: 活塞往复运动密封圈的尺寸和公差 (参与制定)

本部分规定了液压传动系统中活塞往复运动聚氨酯密封圈的术语和定义、符号、结构型式、尺寸和公差、标识。

本部分适用于液压缸中的活塞往复运动聚氨酯密封圈。

Hydraulic fluid power—Dimensions and tolerances of polyurethane seals—Part 1: Dimensions and tolerances of seals used in hydraulic reciprocating applications for piston

This section specifies the terms and definitions, symbols, structural types, dimensions, tolerances and labels of the piston reciprocating polyurethane seals in the hydraulic transmission system.

This part is suitable for piston reciprocating polyurethane sealing ring in hydraulic cylinder.



10. GB/T 36520.2—2018 液压传动 聚氨酯密封件尺寸系列 第2部分: 活塞杆往复运动密封圈的尺寸和公差 (参与制定)

本部分规定了液压传动系统中活塞杆往复运动聚氨酯密封圈的术语和定义、符号、结构型式、尺寸和公差、标识。

本部分适用于液压缸中的活塞杆往复运动聚氨酯密封圈。

Hydraulic fluid power—Dimensions and tolerances of polyurethane seals—Part 2: Dimensions and tolerances of seals used in hydraulic reciprocating applications for piston rod

This section defines the terms and definitions, symbols, structural types, dimensions, tolerances and labels of polyurethane seals with reciprocating motion of piston rods in hydraulic transmission systems.

This part is suitable for the piston rod reciprocating motion polyurethane sealing ring in the hydraulic cylinder.



11. GB/T 36879—2018 全断面隧道掘进机用橡胶密封件（参与制定）

本标准规定了全断面隧道掘进机主驱密封件、铰接密封件、气囊密封件的术语和定义、要求、试验方法、检验规则及标志、包装、运输、贮存。

本标准适用于全断面隧道掘进机用主驱密封件、铰接密封件、气囊密封件。

Rubber seals used for full face tunnel boring machine

This standard specifies the terms and definitions, requirements, test methods, inspection rules and signs, packaging, transportation and storage of main drive seals, articulated seals and airbag seals for full-face tunnel boring machines.

This standard is applicable to main drive seals, articulated seals and airbag seals for full-face tunnel boring machines.

## 苏州电加工机床研究所有限公司

Suzhou Electromachining Machine Tool Research Institute Co., Ltd.

### 公司名称：苏州电加工机床研究所有限公司

Company Name: Suzhou Electromachining Machine Tool Research Institute Co., Ltd.

苏州电加工机床研究所有限公司（以下简称“苏州电加工”）创建于1958年秋，原隶属机械工业部。1999年，由科研事业单位转制为企业，进入中国机械装备（集团）公司（现中国机械工业集团有限公司）。2008年，进行主辅分离改制，建立苏州电加工机床研究所有限公司。2016年，与中国机械工业集团有限公司属下国机智能科技有限公司重组，成为国机智能控股子公司。2018年，作为主体成立国机智能（苏州）有限公司。

经过60年的发展和沉淀，苏州电加工逐步发展成为一家以电加工技术及设备的研发、生产和销售为主营业务，产品集精密机械、脉冲电源、检测控制和计算机数控技术为一体的国家高新技术企业，产品主要包括：数控电火花微小孔加工机床、数控电火花线切割机床、数控电火花成形机床、数控电火花轮胎模具加工机床以及各种电加工、特种加工专用设备，主要立足于解决导电材料零件因材料特殊、形面复杂或结构微细等传统加工无法解决的制造难题，并广泛应用于航天、航空、军工、能源、IT、微型机械、医疗器械、模具、汽车和钢铁等行业。

苏州电加工作为行业归口所和行业研发、信息和服务中心，担负着全国特种加工行业发展规划、产品标准、产品质量监督检测等行业工作，出版国内外公开发行的《电加工与模具》杂志。中国机械工程学会特种加工分会、中国机床工具工业协会特种加工机床分会、全国特种加工机床标准化技术委员会、机械工业特种加工机床产品质量监督检测中心、中国模具工业协会装备委员会等行业组织及机构均设立或挂靠在本所。

苏州电加工获得的重点资质包括国家高新技术企业，江苏省创新型企业等。建有机械工业电加工机床工程（技术）研究中心、机械工业电加工技术重点实验室、江苏省电加工工程（技术）研究中心，结合重大科研项目，建设了“电火花微小孔”“电火花成形”“电化学”“电火花线切割”等实验室，具有所有电加工核心技术的研发能力，为科研项目的开展提供有力支撑，是国内特种加工行业中综合实

Suzhou Electromachining Machine Tool Research Institute Company Limited (hereinafter referred to as “Suzhou Electricmachining”) was founded in 1958 and was originally part of the Ministry of Machinery Industry. In 1999, Suzhou Electricmachining was transformed into company from scientific research institution and became a part of China Machinery Equipment (Group) Company Limited, now the China Machinery Industry Group Company Limited. In 2008, the main and auxiliary separation and reformation were carried out, and Suzhou Electricmachining Tool Research Institute Co., Ltd. was established. In 2016, it reorganized with Sinomach Intelligent Technology Company Limited, which was under China National Machinery Industry Group Company Limited, became a subsidiary of SINOMACH. Then in 2018, it was established as the main body of Sinomach Intelligence (Suzhou) Company Limited.

Over 60 years' development, Suzhou Electricmachining has gradually become a high-tech company focused on research, development, production and sales of electrical processing technology and equipment. The products are integrated with precision machinery, pulse power supply, detection control and numerical control technology. At present, the main products of company is including numerical control electrical discharge micro hole processing machine tools, wire cutting machine tools, machine tools, tire mold processing machine tools and a variety of non-traditional processing equipment. Suzhou Electricmachining is mainly established in solving the manufacturing problems that the traditional technology cannot solve due to the special materials, complex shapes or micro structures. The products of company are widely used in aerospace, aviation, military, energy, IT, micro-machinery, medical equipment, mould, automotive and steel industries.

As the industry repositories, information and service center, Suzhou Electricmachining is responsible for the development of national non-traditional processing industry development planning, product standards, product quality supervision and testing, and also publishes the magazine “Electricmachining and Mould”, which is publicly released at home and abroad. The China Machinery Engineering Society Non-traditional Processing Branch, China Machine Tool & Tool Industry Association Non-traditional Processing Machine Tool Branch, National Non-traditional Machine Tool Standardization Technical Committee, Machinery Industry Electricmachining Machine Tool Product Quality Supervision and Inspection Center, and China Die & Mould Industry Association Equipment Committee are established or affiliated to the Suzhou Electricmachining.

The key qualifications obtained by Suzhou Electricmachining include

力最强的研发机构，具有较强工程化研究和成果转化的能力，先后荣获省部级科技进步奖近 20 项，获得国内专利 35 项和近十项软件著作权。

近十年来主持和参与的重大项目主要包括工信部的“高档数控机床与基础制造装备”科技重大专项课题 7 项；科技部 863 计划 3 项；江苏省科技支撑计划 2 项。其中，项目“固定工作台式五轴联动精密数控电火花成型加工机床”性能指标基本达到目前国外同类机床先进水平，典型应用于我国航空航天发动机高温耐热合金带冠整体式扭曲叶片涡轮盘的加工，解决了该类零件加工设备的“卡脖子”问题，项目获得中国机械工业集团科学技术奖一等奖。

national high-tech enterprises and innovative enterprises in Jiangsu Province. A list of the Machinery Industry Electricmachining Machine Tool Engineering (Technology) Research Center, the Machinery Industry Electricmachining Technology Key Laboratory, and the Jiangsu Province Electricmachining Engineering (Technology) Research Center have been built in combination with major scientific research laboratories of "electric sparks micro holes" "spark forming" "electrochemistry" and "electric discharge wire cutting". Suzhou Electricmachining is the strongest comprehensive research mechanism in the domestic non-traditional industry, and provides strong support for the development of scientific research projects. The organization has strong engineering research and ability to transform achievements, which has won near upon 20 provincial and ministerial-level scientific and technological progress awards, and obtained 35 domestic patents and nearly ten software copyrights.

The major projects hosted and participated in the past ten years mainly include seven major scientific and technological projects of "Superior CNC Machine Tools and Basic Manufacturing Equipment" of MIIT, three projects of the 863 Program of the Ministry of Science and Technology, and two science and technology support programs of Jiangsu Province. Among them, the performance index of the project "fixed work bench five-axis linkage precision numerical control EDM machine tool" basically reaches the advanced level of similar foreign machine tools at present, which is typically applied in the processing of heat-resistant alloy crown-integrated twisted blade turbine disk of aerospace engine. The key problem of processing equipment was solved, and the project won the first prize of China Machinery Industry Group Science and Technology Award.

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## 标准 Standards



1、GB/T 14896.1—2009《特种加工机床 术语 第1部分：基本术语》

标准应用于各类特种加工机床。

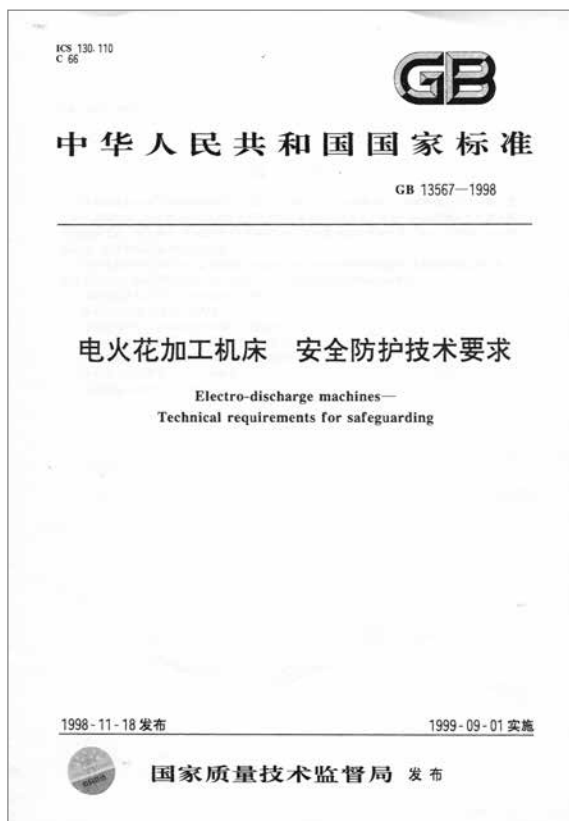
Non-traditional machines—Terminology—Part 1: Basic terminology  
The standard applied in various types of non-traditional processing machines.



2、GB/T 14896.2—2009《特种加工机床 术语 第2部分：电火花加工机床》

标准应用于各种电火花加工机床。

Non-traditional machines—Terminology—Part 2: Electro-discharge machines  
The standard applied in various types of electric discharge machine.



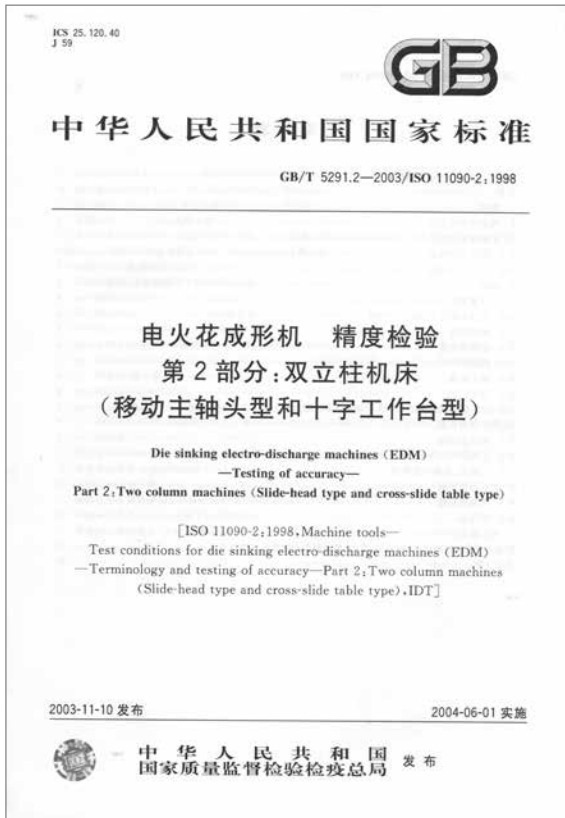
3、GB 13567—1998《电火花加工机床 安全防护技术要求》标准应用于电火花成形机、电火花线切割机、电火花磨床、电火花穿孔机及其他电火花加工机床。

Electro-discharge machines—Technical requirements for safeguarding  
The standard applied in forming machines, wire cutting machines, grinding machines, piercers and other EDM machines.



4、GB/T 5291.1—2001《电火花成形机 精度检验 第1部分：单立柱机床（十字工作台型和固定工作台型）》标准应用于十字工作台型和固定工作台型的单立柱电火花成形机床。

Die sinking electro-discharge machines (EDM)—Testing of accuracy—Parts 1: Single column machines (cross slide table type and fixed table type)  
The standard applied in single-column EDM machine with cross table type and fixed table type.



5、GB/T 5291.2—2001《电火花成形机 精度检验 第2部分：双立柱机床（移动主轴头型和十字工作台型）》  
标准应用于移动主轴头型和十字工作台型的双立柱电火花成形机床。

Die sinking electro-discharge machines (EDM)—Testing of accuracy—Parts 2: Two column machines (slide-head type and cross-slide table type)  
The standard applied in double-column EDM machine for moving spindle head type and cross table type.

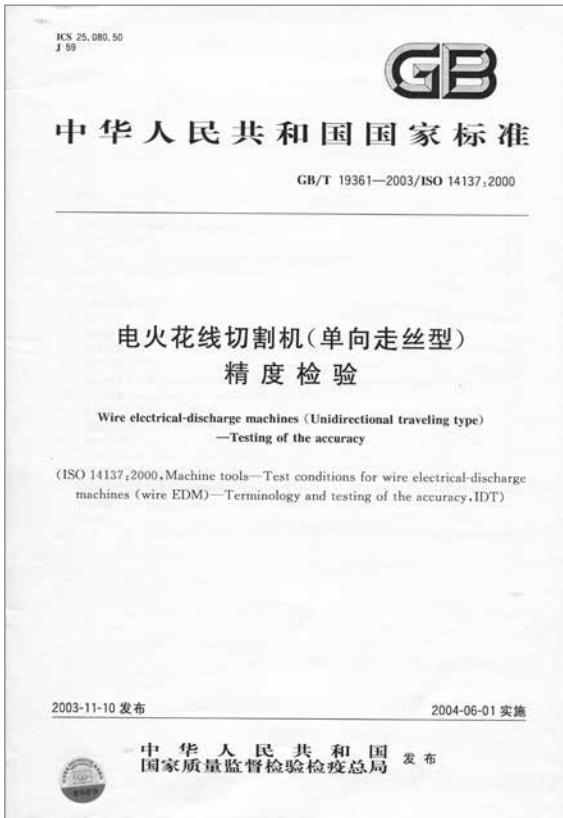


6、GB/T 7926—2015《数控往复走丝电火花线切割机床 精度检验》

标准应用于一次切割成形的数控往复走丝电火花线切割机床，包括十字工作台型单立柱机床和双立柱机床。

NC reciprocating traveling type wire electrical-discharge machines—Testing of the accuracy  
The standard applied in disposable cutting and forming CNC reciprocating wire cutting machine, including cross table type single column machine and double column machine.



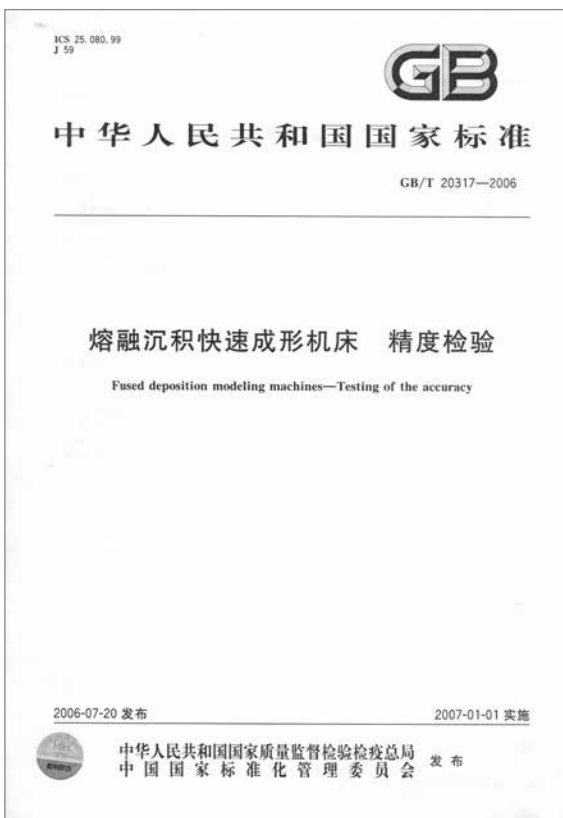


7、GB/T 19361—2003《电火花线切割机（单向走丝型） 精度检验》

标准应用于十字工作台型单立柱、双立柱型的单向走丝电火花线切割机。

Wire electrical-discharge machines (Unidirectional traveling type)—Testing of the accuracy

The standard applied in one-way wire EDM machine of cross table type single column, double column type.



8、GB/T 20317—2006《熔融沉积快速成形机床 精度检验》

标准应用于增材制造设备中的熔融沉积成形机床。

Fused deposition modeling machines—Testing of the accuracy

The standard applied in fused deposition forming machine in additive manufacturing equipment.



9、GB/T 23480.1—2009《电火花小孔高速加工机床 第1部分：术语和精度检验》

标准应用于电火花小孔高速加工机床。

Small hole high speed drilling electro-discharge machines—Part 1: Terminology and testing of accuracy

The standard applied in electric spark small hole high speed machine.



10、GB/T 25633—2010《电火花加工机床 电磁兼容性试验规范》

标准应用于电火花加工机床的电磁骚扰限制测量试验和抗扰度试验。

Electro-discharge machines—Test specification for electromagnetic compatibility  
The standard applied in electromagnetic disturbance limit measurement test and immunity test of EDM machine tools.



11、GB/T 25634.1—2010《电火花轮胎模加工机床 第1部分:精度检验》  
标准应用于电火花轮胎模加工机床。

Tire mould electro-discharge machines—Part 1: Testing of accuracy  
The standard applied in EDM tire mold machine.



12、GB/T 25635.1—2010《电解去毛刺机床 第1部分:精度检验》  
标准应用于电解去毛刺机床。

Electrochemical deburring machines—Part 1: Testing of accuracy  
The standard applied in electrolytic deburring machine.

# 机械工业第六设计研究院有限公司

SIPPR Engineering Group Co., Ltd

**公司名称：机械工业第六设计研究院有限公司**

**Company Name: SIPPR Engineering Group Co., Ltd**

机械工业第六设计研究院有限公司（以下简称中机六院）创建于1951年，是拥有工程设计综合甲级资质的国家大型综合设计研究院，隶属世界500强企业、中央大型企业集团——中国机械工业集团有限公司。

中机六院现有8个职能管理部门、24个生产部门（其中7个子公司），近2100名员工，其中中国工程院院士1人、中国工程设计大师1人、英国皇家特许建筑设备注册工程师协会荣誉资深会员1人、享受政府特殊津贴专家22人、研究员级高级工程师75人、高级工程师566人、各类国家注册工程师1037人次。

六十余年来，公司完成大中型工程项目20000余项，主编、参编国家和行业标准、规范33项；荣获中国土木工程创新最高奖詹天佑奖2项、国家科技发明二等奖1项、国家科技进步及优秀工程设计金、银、铜奖25项、鲁班奖12项、各类省部级奖千余项；获得国家授权专利158项，其中发明专利17项，软件著作权登记146项。

中机六院拥有国家住房和城乡建设部颁发的工程设计综合甲级资质、工程监理综合资质、建筑工程施工总承包一级资质、工程造价咨询甲级资质；国家商务部援外设计、援外监理等资格；质量技术监督局颁发的压力容器、压力管道设计许可证；同时还拥有城市规划、机电设备安装等资质。

中机六院可承接工程设计全部21个行业和8个专项资质范围内的所有工程咨询、设计、工程总承包、项目管理和工程监理业务。21个行业包括机械行业、建筑行业、市政行业、冶金行业、建材行业、铁道行业、轻纺行业、公路行业、煤炭行业、化工石化医药行业、石油天然气（海洋石油）行业、电力行业、军工行业、商物粮行业、核工业行业、电子通信广电行业、水运行业、民航行业、农林行业、水利行业、海洋行业；8个专项资质包括建筑装饰、建筑智能、建筑幕墙、轻型钢结构、风景园林、消防设施、环境工程、照明工程。

中机六院是国内机床工具、烟草、民用建筑、铸造、

SIPPR Engineering Group Co., Ltd (Abbreviated as SIPPR) established in 1951 is a large-sized national comprehensive Grade A design institute in China subordinated to central enterprise group---China National Machinery Industry Corporation, one of Fortune Global 500 enterprises.

SIPPR has 8 administrative departments, 24 design departments (including 7 branches) and about 2100 staff, including 1 academican of Chinese Engineering Academy, 1 Chinese engineering design masters, 22 experts enjoying special subsidy from State Department, 76 senior engineers at researcher level, 586 senior engineers and 1037 all kinds of national certified engineers.

During these 6 decades, SIPPR has finished more than 20000 large & middle-sized projects, attended the compilation of 33 national, local & industry standards and won 2 Zhan Tianyou Prize---the highest prize of China civil engineering projects, 1 2nd Prize of National Scien-tech Invention, 25 National Gold, Silver & Copper Prizes, 12 Lu Ban Prizes & about a thousand Ministerial & Provincial Prizes. Obtained 158 national patents, 17 invention patent among those; 146 records of software copy right.

SIPPR has the comprehensive grade A design qualification, comprehensive project supervision qualification, grade A building intelligence design & construction qualification, grade A project cost consultation qualification; China aid consultation, design and supervision qualifications issued by the national ministry of commerce; pressure vessel, pressure piping design license issued by Quality and technology supervision Bureau; and also has the city planning, mechanical and electrical equipment installation qualifications etc.

SIPPR can undertake all the consultation, design, EPC, project management and construction supervision work within the 21 engineering industries and 8 professional qualifications. The 21 industries including machinery industry, construction industry, coal industry, chemical, petroleum & medicine industry, petroleum gas (marine oil) industry, electricity industry, metallurgy industry, military industry, commercial food industry, nuclear industry, electronics, communication & broadcasting industry, light & textile industry, construction material industry, railway industry, highway industry, water transport industry, civil aviation industry, municipal industry, agriculture & forestry industry, water conservancy industry and ocean industry. The 8 professional qualifications are construction decoration, building intelligence, building curtain wall, light steel structure, landscape &

无机非金属材料、煤矿机械、重型机械、风电机械、轨道交通装备、石化机械等行业和领域的设计强院，在信息智能化、绿色工业建筑、大型工厂和园区规划、企业生产流程再造、高难度结构、暖通空调、工业除尘、市政和环境工程等许多方面具有国内一流的工程技术。

中机六院秉承“敢为人先，永争一流”的企业精神，竭力“打造国内一流的绿色与智能工程服务商”，为客户提供工程建设领域的全过程、全方位服务，为社会、客户、员工创造更大价值！

garden, freighting devices, environmental protection projects, and lighting.

SIPPR is one of the strongest design institutes in machine tool industry, inorganic nonmetal industry tobacco, casting, coal mining, petroleum machinery, wind power machinery, heavy-duty machinery, engineering machinery, rail transportation equipment and agriculture machinery industry; the strong design institute in civil projects, municipal project, military project and textile industry. What more, SIPPR has special advantages in the design of information & intelligence, green industrial buildings, large-sized plants & plant planning, enterprise manufacturing process reengineering, highly difficult structure, HVAC, industrial dedusting, municipal & environmental protection projects, etc.

SIPPR sticks to the concept of “Dare to be the first, Striving for Excellence”, take the purpose of “Creating the First-class Green & Intelligent Engineering Service Supplier in China” as self responsibility, sincerely looks forward to provide the all round and full range service to the client domestically and globally through the advanced technology, talent and management.

## 联系人及联系方式 Contact Person and Information

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Phone: +8637167606091

## 标准 Standards

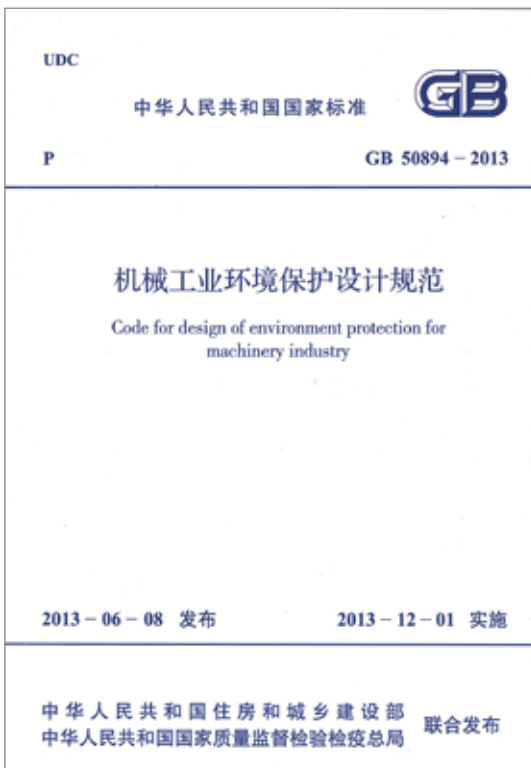


### 1. 铸造防尘技术规程

本标准适用于铸钢、铸铁、有色金属铸造车间的新建、改建、扩建建设项目和技术改造、技术引进项目的设计和管理。现有铸造车间也应遵照本标准执行。生产铸造设备和为铸造车间服务的企事业单位也应遵照本标准执行。

#### Dust Control Code for Foundry

The provisions of this code shall apply to the new constructions, alterations, enlargements of casting plant projects which manufacture cast steel, cast iron or non-ferrous metal castings and the design and management of technology reformation or new technology introduction projects. The casting plants that have been built previously shall comply with the provisions of this code. The companies and public institutions who offer casting equipment products or service to casting plants shall also perform in accordance with the provisions of this code.

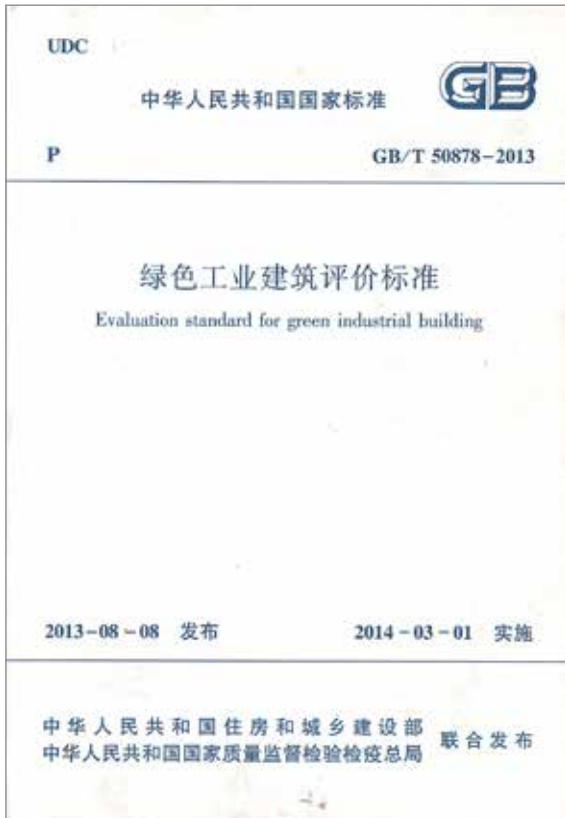


### 2. 机械工业环境保护设计规范

本标准适用于机械工业新建、改建、扩建和技术改造项目的环境保护设计。

#### Design Code for Environmental Protection of Machinery Industry

The provisions of this code shall apply to the environmental protection design of the new constructions, alterations, enlargements of buildings and technology reformation projects of machinery industry.

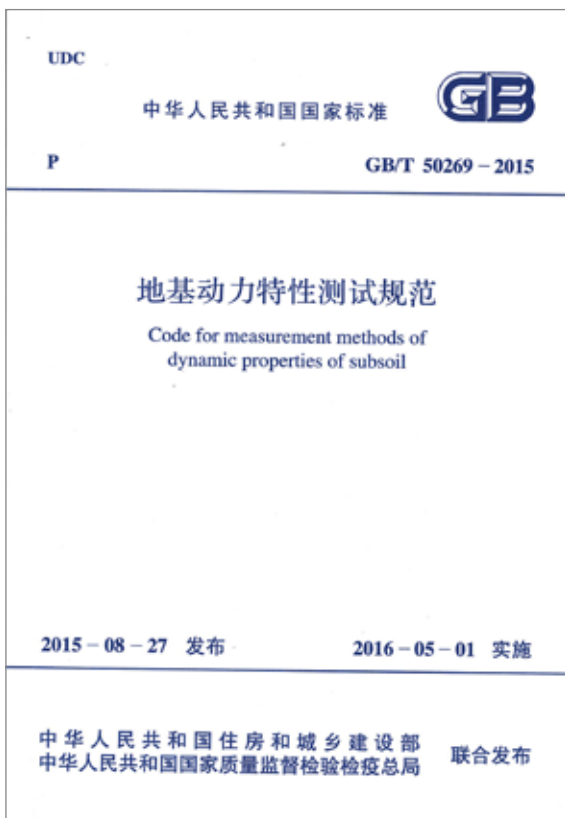


### 3. 绿色工业建筑评价标准

本标准适用于新建、扩建、改建、迁建、恢复的建设工业建筑和既有工业建筑的各行业工厂或工业建筑群中的主要生产厂房、各类辅助生产建筑的评价。

#### Evaluation Standard for Green Industrial Building

The provisions of this standard shall apply to the evaluation of the new constructions, enlargements, alterations, relocations, renovations of industrial buildings and the existing industrial buildings including factories in various industries and main industrial manufacturing plant as well as varieties of ancillary manufacturing buildings in industrial complexes.



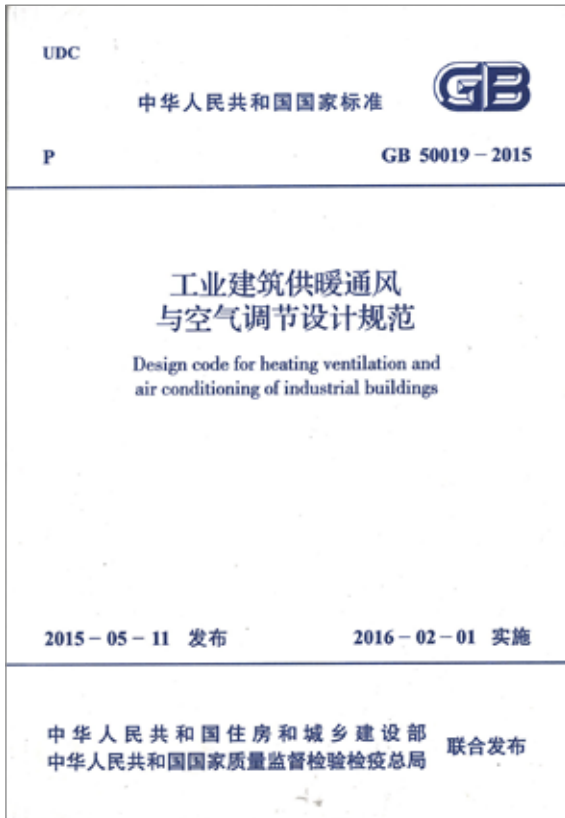
### 4. 地基动力特性测试规范

本规范适用于各类建筑物和构筑物的天然地基和人工地基的动力特性测试。

#### Code for Measurement Methods of Dynamic Properties of Subsoil

The provisions of this code shall apply to the measurement methods of dynamic properties of natural or artificial subsoil for various types of construction works.





##### 5. 工业建筑供暖通风与空气调节设计规范

本规范适用于新建、扩建和改建的工业建筑物及构筑物的供暖、通风与空气调节设计。本规范不适用于有特殊用途、特殊净化与特殊防护要求的建筑物、洁净厂房以及临时性建筑物的设计。

##### Design Code for Heating Ventilation and Air Conditioning of Industrial Buildings

The provisions of this code shall apply to the heating ventilation and air conditioning design of the new constructions, enlargements and alterations of industrial buildings and structures. This code shall not apply to the design of buildings, cleaning rooms and temporary buildings with requirements of special usage, special purification or special protection.



##### 6. 机械工程项目职业安全卫生设计规范

2. 规范适用于新建、改建和扩建机械工程建设项目职业安全卫生设计。

##### Code for Design of Occupational Safety and Health in Machinery Industry

The provisions of this code shall apply to the design of the occupational safety and health of the new constructions, alterations and enlargements of projects in machinery industry.



#### 7. 工业建筑节能设计统一标准

2. 本标准适用于新建、改建及扩建工业建筑的节能设计。特殊行业和有特殊要求的厂房或部位的节能设计，应按其专项节能设计标准执行。

Unified Standard for Energy Efficiency design of industrial buildings

The provisions of this standard shall apply to the energy efficiency design of the new constructions, alternations and enlargements of industrial buildings. Where in any specific industry or there is a specific requirement of energy efficiency design of factories and any part of them, the provisions of the related specific energy efficiency design standard should be applicable.



#### 8. 工业通风排气罩

本图集适用于通风除尘系统、有害气体收集、净化系统、高温气体排除系统以及其他需设通风排气罩的场所。

Industrial Ventilation Exhaust Hood

This atlas shall apply to ventilation and dust removing system, harmful gas and vapor collection, purification system, high-temperature gas exhaust system as well as other places required for ventilation exhaust hoods.

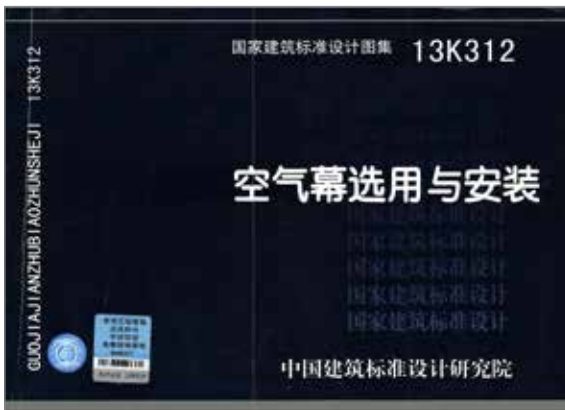


#### 9. 供暖空调水处理设备选用与安装

本图集适用于各类供暖空调机组及管道中循环水的腐蚀控制、结垢控制及微生物控制等水处理设备选用与安装。

Selection and Installation of Heating and Air Conditioning Water Treatment Equipment

This atlas shall apply to the selection and installation of various types of heating and air conditioning sets and water treatment equipments for corrosion control in water-circulating pipes, scaling control, microorganisms control, etc.

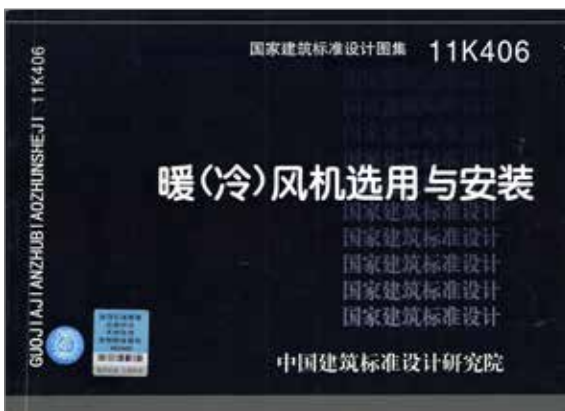


#### 10. 空气幕选用与安装

适用于新建、改建、扩建的工业、民用建筑及既有建筑中空气幕的选用与安装。

##### Selection and Installation of Air Curtain

This atlas shall apply to the selection and installation of air curtain of the new constructions, alterations, enlargements of industrial or civil buildings to be built or been built previously.

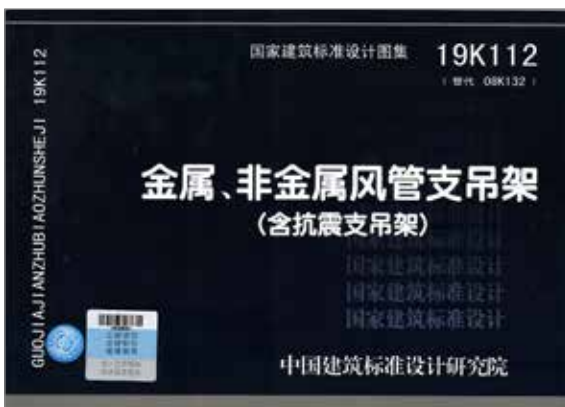


#### 11. 暖冷风机的选用与安装

本图集适用于新建、改建和扩建的工业厂房、民用建筑中暖(冷)风机供暖(冷)系统的选用与安装。

##### Selection and Installation of Heating (Cooling) Fan

This atlas shall apply to the selection and installation of heating (cooling) fan of heating (cooling) systems of the new constructions, alterations and enlargements of industrial factories as well as civil buildings.



#### 12. 金属、非金属风管支吊架

本图集适用于新建、改建、扩建的民用与工业建筑通风、空调、防排烟等工程中的风管支吊架的设计选用与施工，不适用于有腐蚀、高温等特殊环境。

##### Metal and Non-metal Support and Hunger of Duct

This atlas shall apply to the selection and construction of support and hunger of duct used in ventilation, air conditioning, smoke control and extraction, etc. projects which belong to the new constructions, alterations, and enlargements of industrial and civil buildings. This atlas shall not apply to special cases such as corrosion or high-temperature environment.



### 13. 打叶复烤厂设计规范

本标准适用于打叶复烤厂的技术改造工程设计。

Design Specification for Threshing and Redrying Factory

The provisions of this standard shall apply to the design of technology reformation projects of threshing and redrying factory.



### 14. 焊接作业厂房供暖通风与空气调节设计规范

本规范适用于新建、扩建、改建和既有厂房专项技术改造的焊接作业厂房的供暖通风与空气调节设计。

Code for Design of Heating Ventilation and Air Conditioning of Welding Operation Plant

The provisions of this code shall apply to the design of heating ventilation and air conditioning of welding operation plant used for the new constructions, alterations, enlargements of industrial plants and technology reformation of existing plants.



#### 15. 烟草及烟草制品、仓库、设计规范

本标准适用于新建、改建、扩建的原烟仓库、片烟仓库、烟梗仓库、碎叶仓库、再造烟叶仓库、卷烟成品仓库和烟用材料仓库。

#### Tobacco and Tobacco Products- Warehouse-Design Specification

The provisions of this standard shall apply to the new constructions, alterations, enlargements of warehouses, including cured tobacco warehouses, strips warehouses, stem warehouses, crushed leaves warehouses, reconstituted tobacco warehouses, cigarette product warehouses, and tobacco material warehouses.

## 中机三勘岩土工程有限公司

China Machinery TIDI Geotechnical Engineering Co., Ltd.

### 公司名称：中机三勘岩土工程有限公司

Company Name: China Machinery TIDI Geotechnical Engineering Co., Ltd.

中机三勘岩土工程有限公司（原机械工业第三勘察设计院），创建于1952年，是新中国成立后最早组建的综合性勘察设计单位之一，现隶属于中国农业机械化科学研究院（集团）、中国机械工业集团有限公司。

公司持有建设部核发的工程勘察综合类甲级证书，国家测绘局核发的甲级测绘证书等。依托公司在勘察及岩土工程领域的技术优势，1996年成立了中机三勘岩土工程有限公司的全资子公司“武汉国机岩土工程有限责任公司”，并于当年持有建设部核发的地基与基础施工壹级企业资质证书。中机三勘岩土工程有限公司全资子公司“湖北中机三勘工程技术有限公司”具有地基基础检测等相关项目的资质证书。我公司通过质量、职业健康安全、环境三合一管理体系的认证和计量认证。

公司曾被建设部授予“全国工程勘察先进单位”、被湖北省建设厅授予“勘察设计业百强单位”、被武汉市建委授予“岩土工程施工先进企业”称号。我公司现为中国岩土工程研究中心副主任单位、中国机械工业勘察设计协会常务理事单位、湖北省勘察设计协会甲级会员单位、武汉市勘察设计协会常务理事单位和湖北省测绘行业协会理事单位等，是国防机械工业科技情报网的创始成员和相关技术交流文献与期刊的轮值主编单位之一。

公司创建60多年来，在全国完成各类工程勘测项目上万余项，其中国家重点骨干工程和其它重特大与技术复杂工程800余项、完成地基基础施工、工程检测等项目3000余项。公司设有岩土工程勘察，岩土工程施工、深基坑支护设计施工、工程测量与大地测绘，建筑工程全寿命监控与监测，水文地质勘察，应用地球物理勘探，岩土（水）试验，凿井与降水设计与施工，工程咨询，工程监理，地质钻探及原位测试设备修造与技术研发等生产与研究部门。现有高级工程师以上职称40人，各类专业技术及注册人员占公司总人数的90%，享受政府特殊津贴的专家8人，被认定为有突出贡献的中青年专家5人；我国工程勘察界最高学术与荣誉称号——勘察大师的获得者中，有7人曾先后在我公司工作过或在我公司工作期间获得此项殊荣。

China Machinery TIDI Geotechnical Engineering Co., Ltd, founded in 1952, is one of the earliest integrated survey and design units of China. It is the subsidiary of SINOMACH.

The company holds Class A Certificate of Comprehensive Engineering Survey issued by the Ministry of Construction, Class A Surveying and Mapping Certificate issued by the National Surveying and Mapping Bureau etc. Own whole-owned subsidiary Wuhan National Machinery Geotechnical Engineering Co., Ltd, which was established in 1996, held the Class A certificate of foundation and foundation construction approved by the Ministry of Construction. Another wholly-owned subsidiary SINMACH Sankan Geotechnical Engineering Co., Ltd has the certificate of foundation testing. Our company has passed the certification of quality, occupational health and safety and environment management system.

The company has been awarded "National Advanced Unit of Engineering Survey" by the Ministry of Construction, "Top 100 Units of Survey and Design Industry" by the Construction Department of Hubei Province, and "Advanced Enterprise of Geotechnical Engineering Construction" by the Construction Commission of Wuhan. Our company is the deputy director unit of China Geotechnical Engineering Research Center, the executive director unit of China Machinery Industry Survey and Design Association, the first-class member unit of Hubei Province Survey and Design Association, the executive director unit of Wuhan Survey and Design Association and the director unit of Hubei Survey and Mapping Industry Association, etc. It is the founding member of the National Defense Machinery Industry Science and Technology Information Network and the related technical exchange literature and periodicals.

Over 60 years since its establishment, the company has completed more than 10,000 projects of various types of engineering survey at home and abroad, including more than 800 key national projects and other large and technically complex projects, more than 3000 projects of foundation construction and engineering testing. The company has a number of production and research departments covering many geological prospecting specialties, such as geotechnical engineering survey, geotechnical engineering construction, deep foundation pit support design and construction, engineering survey and geodetic mapping, construction engineering life-cycle monitoring and monitoring, hydrogeological survey, applied geophysical exploration, geotechnical (water) test, well drilling and dewatering design and construction,

engineering consultation, engineering supervision, geological drilling. There are 40 senior engineers and above, 90% of the employees are professional technicians and registered personnel, 8 experts who enjoy special government allowances and 5 young and middle-aged experts who have been recognized as outstanding contributions. Seven of them have been awarded the highest academic and honorary title in the field of engineering investigation in China, the Master of Investigation.

## 联系人及联系方式

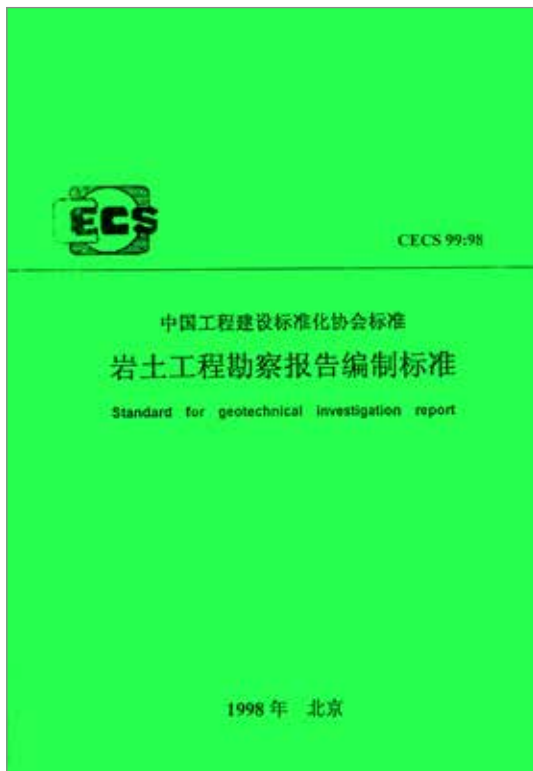
Contact Person and Information

联系人：曹岩  
联系电话：13971634707

Contact: yan cao  
Phone: 13971634707



## 标准 Standards

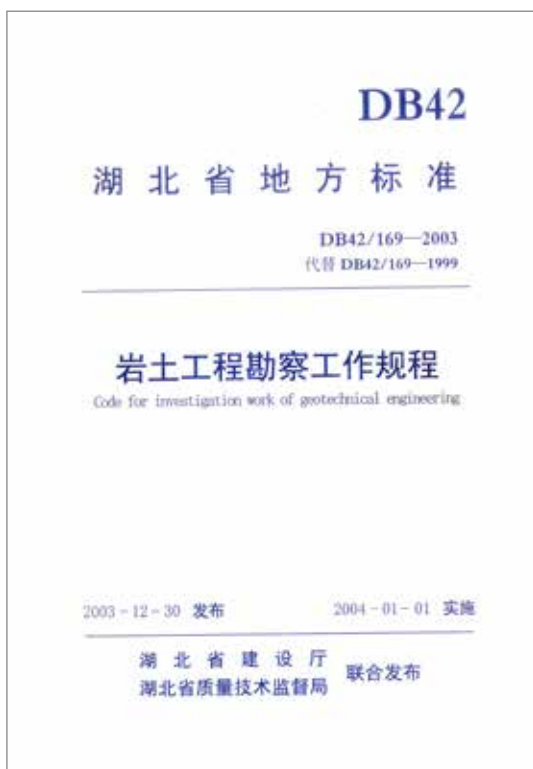


### 1、《岩土工程勘察报告编制标准》（CECS99：98）

适用于除水利工程、铁道工程、公路工程及核电站工程以外的工程建设岩土工程勘察报告。

#### 1.“Standard for geotechnical investigation reports” (CECS99:98)

It is applicable to the geotechnical engineering investigation reports of engineering construction except the water conservancy engineering, railway engineering, highway engineering and nuclear power station engineering.

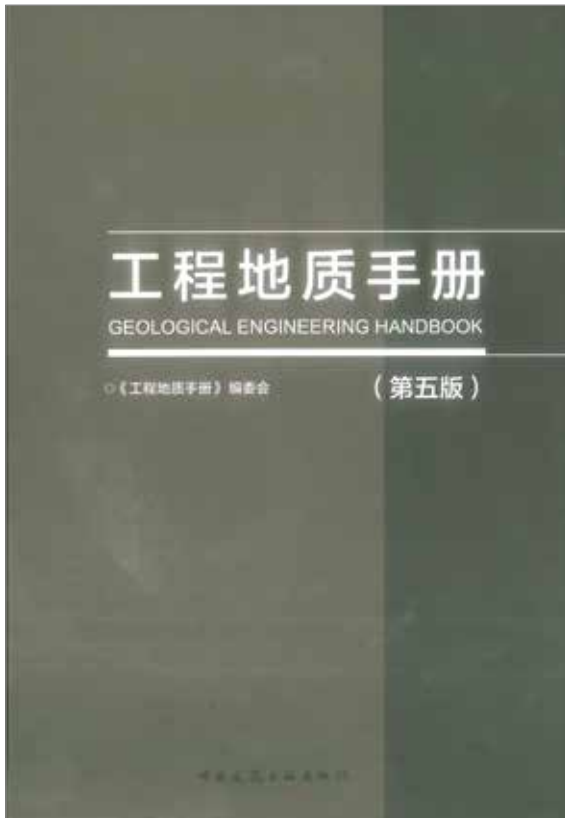


### 2、《岩土工程勘察工作规程》（DB42/169—1999）

适用于湖北省内从事除水利、铁路、公路和桥隧等工程以外的工程建设岩土工程勘察。

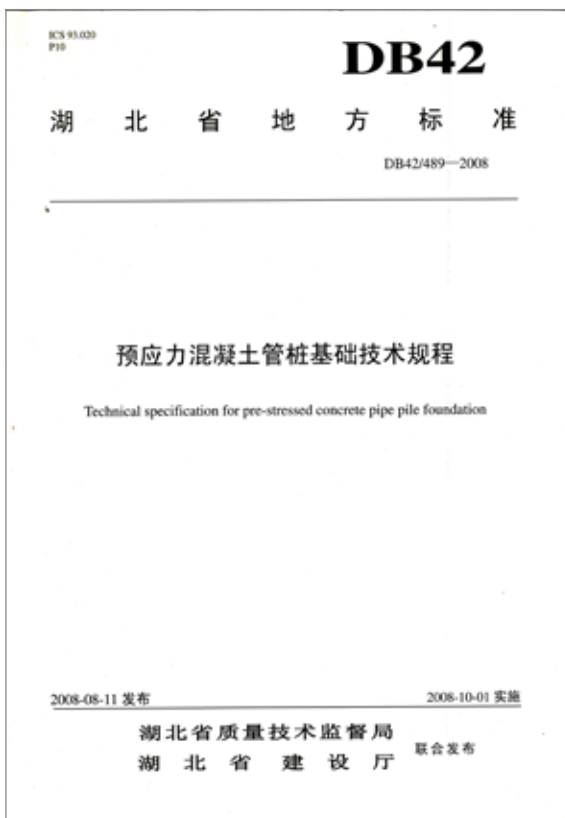
#### 2.“Code for investigation work of geotechnical engineering” (DB42/169-1999)

It is applicable to geotechnical engineering survey except the engineering construction of water conservancy, railways, highways, bridges and tunnels in Hubei Province.



3、《工程地质手册》（第五版）  
适用于工程地质勘测及岩土工程。

3. "Geological engineering handbook"  
It is applicable to engineering geological survey and geotechnical engineering.



4、《预应力混凝土管桩基础技术规程》（DB42/489—2008）  
适用于湖北省建筑工程预应力混凝土管桩基础的勘察、设计、  
制作、施工、检测及监测工作。

4. "Technical specifications for prestressed concrete pipe pile foundation" (DB42/489-2008)  
It is applicable to the survey, design, production, construction, testing and monitoring of prestressed concrete pipe pile foundation of construction engineering in Hubei Province.



5、《三岔双向挤扩灌注桩设计规程》（JGJ 171—2009）

适用于工业与民用建（构）筑物三岔双向挤扩灌注桩基础的设计、检查与检测。

5. "Design specification for cast-in-place piles with expanded branches and bells by 3-way extruding arms" (JGJ 171-2009)

It is applicable to the design, inspection and testing of the triple bifurcation and bidirectional squeezed and expanded pile foundation for industrial and civil construction.



6、《武汉地区岩土工程勘察统一技术措施》

适用于武汉地区岩土工程勘察工作。

6. "Unified technical measures for geotechnical investigation in Wuhan"

It is applicable to geotechnical engineering survey work in Wuhan area.

## 武汉市基坑工程设计文件编制规定

WBJ-1-2014  
代替WBJ-1-2001

2014-10-21 发布

2015-01-01 实施

武汉市城乡建设委员会

发布

7、《武汉市基坑工程设计文件编制规定》（WBJ-1-2014）  
适用于武汉市建筑及市政基础设施等基坑工程设计文件的编制。

7. "Foundation pit engineering design document preparation regulations in Wuhan" (WBJ-1-2014)

It is applicable to the preparation of design documents for foundation pits of construction and municipal infrastructure in Wuhan.

## 武汉地区TRD及CSM工法 设计与施工技术导则

2018-12-05发布

2019-01-01实施

武汉市城乡建设委员会 发布

8、《武汉地区 TRD 及 CSM 工法设计与施工技术导则》（2018）  
适用于武汉地区基坑工程与其他隔渗工程中 TRD 及 CSM 工法等  
厚度水泥土搅拌墙的勘察、设计、施工、质量检验与验收。

8. "Technical specifications for design and construction of TRD and CSM methods in Wuhan" (2018)

It is applicable to the survey, design, construction, quality inspection and acceptance of thick cement-soil mixing walls such as TRD and CSM construction methods in foundation pit engineering and other seepage engineering in Wuhan.





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