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**NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC
OF CHINA**

中华人民共和国国家标准

GB/T 16507.1-2013

Partial replace GB/T 16507-1996

Water-tube Boilers—Part 1: General requirement

水管锅炉

第 1 部分：总则

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Foreword

GB/T 16507 "water-tube boilers" is divided into following eight parts:

- Part 1: General rules;
- Part 2: Materials;
- Part 3: Physical design;
- Part 4: Strength calculation of pressure parts;
- Part 5: Manufacturing;
- Part 6: Inspection, testing and acceptance;
- Part 7: Safety accessories and instruments;
- Part 8: Installation and operation.

This is Part 1 of GB/T 16507.

This Part is drafted in accordance with the rules given in GB/T 1.1-2009.

This Part partly replaces the content of GB/T 16507-1996. Compared with GB/T 16507-1996, the main technical content changes are as follows:

- Water tube boiler and shell boiler divided into two independent standards, water tube boiler is GB/T 16507 and shell boiler is GB/T 16508;
- Water tube boiler standard consists of eight parts such as general, material, construction design, strength calculation of compressed components, manufacturing, inspection, test and acceptance, safety accessories and instrument, installment and operating;
- Stipulated certification and duty from manufacturing unit, operation unit, installment unit;
- Defined the scope of boiler;
- Added the value stipulation of permissible stress of steel bolting materials;
- Added the requirements for installment and operating part;
- Added the requirements for energy-saving and

This Part is proposed by and is under the jurisdiction of the National Standardization Technical Committee of Boiler Pressure Vessel (SAC/TC 262).

The responsible drafting organization is Shanghai Power Equipment Packaged Design and Research Institute.

Units participating in the drafting of this Part include: Shanghai Boiler Factory Co., Ltd., Harbin Boiler Factory Co., Ltd, Dongfang Boiler Co., Ltd. of Dongfang Electric Group, Beijing Babcock & Wilcox Co., Ltd., Wuhan Boiler Co., Ltd, Hangzhou Boiler Group Co., Ltd, Wuxi Huaguang Boiler Co., Ltd., China Electricity Council and Shanghai Industry Boiler Research Institute.

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This Part replaces the following historical editions issued:
— GB/T16507-1996.

Introduction

GB / T 16507, as one of the common technical standards for boilers developed by and under the jurisdiction of the National Standardization Technical Committee of Boiler Pressure Vessel (hereinafter referred to as "the Committee"), is applied to regulate the related technical requirements on design, manufacturing, testing, acceptance and installation for boilers built or used within the territory of China.

Because it is unnecessary and impossible for this standard to include all the technical details about boiler construction and installation within the applicable scope, therefore on the premise of meeting the basic safety requirements regulated in the law, technical content not specifically mentioned in the standard shall not be prohibited.

This standard does not limit the advanced technology adopted in actual engineering design and construction, but engineers shall be able to make reliable judgments when using the advanced technology and methods to ensure it meets the regulation of this standard.

This standard neither requires nor prohibits that designing staff use computer programs for analysis or design of boilers. But when using computer programs for analysis or design, in addition to meeting the requirements of this standard, the following must also be acknowledged:

- 1) The rationality of technology assumption in the programs adopted;
- 2) The applicability of programs adopted on the designing content;
- 3) The correctness of input parameters and output results of the programs adapted for engineering design.

Inquiries concerning standard technical provisions shall be submitted to the Secretariat of the Committee in written form, with the obligation to provide information that may be required. Inquiries without direct relationship with the standard terms or can not be understood shall be considered as the scope of technical advice, and the Committee will have the right to refuse to answer.

The Committee will not take any responsibility for misunderstandings and consequences caused by the publicity and interpretation from other institutions without the written authorization or recognition of the Committee.

Water tube boiler

Part 1: General provisions

1 Scope

1.1 This part of GB / T 16507 provides common technical requirements for materials of water tube boilers, structural design, strength calculation of pressure parts, manufacturing, inspection, testing and acceptance, safety accessories and instrumentation, installation and other aspects.

1.2 This section applies to fixed water-tube boiler within the following range:

- a) Steam boilers with rated steam pressure $\geq 0.1\text{MPa}$;
- b) Hot water boilers with rated water pressure $\geq 0.1\text{MPa}$ or rated thermal power $\geq 0.1\text{MW}$;
- c) Flue-type or flue & pipe shell-type waste heat boilers with the main purpose of (waste) heat utilization.

1.3 This section does not apply to the water-tube boilers within the following range:

- a) Mobile water-tube boilers;
- b) Cooling device for cooling of equipment and processes.

2 Normative references

The articles contained in the following documents have become this document when they are quoted herein. For the dated documents so quoted, all the modifications (Including all corrections) or revisions made thereafter shall be applicable to this document.

GB/T 753 Steam condition series for utility boilers

GB/T 1921 Parameters for industrial steam boilers

GB/T 2900.48 Electrotechnical terminology of boilers

GB/T 3166 Parameters for hot water boilers

GB/T 10180 Thermal performance test code for industrial boilers

GB/T 10184 Performance test code for utility boiler

GB/T 10863 Thermal test method for gas pass heat recovery boiler

GB 13223 Emission standard of air pollutants for thermal power plants

GB 13271 Emission standard of air pollutants for boiler

GB/T 16507.2 Water-tube boilers—Part 2: Materials

GB/T 16507.3 Water-tube Boilers—Part 3: Structure design

GB/T 16507.4 Water-tube boilers—Part 4: Strength calculation of pressure parts

GB/T 16507.5 Water-tube Boilers—Part 5: Fabrication

GB/T 16507.6 Water-tube Boilers—Part 6: Inspection, testing and acceptance

GB/T 16507.7 Water-tube Boilers—Part 7: Safety appurtenances and instruments

GB/T 16507.8 Water-tube Boilers—Part 8: Installation and operation

GB/T 22395 Specification for design of boiler steel structures



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