

ICS 27.060.30

CCS J98



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

GB/T 44906-2024

Technical specification for biomass fired boilers

生物质锅炉技术规范

Issued on: October 26, 2024

Implemented on: May 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and Definitions	2
4 Parameter series and model compilation method	2
5 General Requirements	3
6 Fuel	3
7 Performance	4
8 Design	6
9 Auxiliary machines and systems	8
10 Manufacturing, Inspection and Testing	10
11 Painting, packaging, logo, nameplate and accompanying documents	10
12 Installation, commissioning and acceptance	10
11 Reference	12

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document is proposed and coordinated by the National Technical Committee for Standardization of Boilers and Pressure Vessels (SAT/TC262). This document was drafted by: Shanghai Industrial Boiler Research Institute Co., Ltd., Zhejiang Tefu Development Co., Ltd., Guangdong Special Equipment Testing and Research Institute Co., Ltd. Shunde Testing Institute of the Institute of Special Equipment, Hengyang Dacheng Boiler Co., Ltd., Hangzhou Special Equipment Inspection and Scientific Research Institute, Shanghai Special Equipment Supervision and Inspection Institute Test Technology Research Institute, Nantong Wanda Energy Power Technology Co., Ltd., Dongfang Electric Corporation Dongfang Boiler Co., Ltd., Zhejiang Centron Energy Technology Co., Ltd., Zhejiang Shuangfeng Boiler Manufacturing Co., Ltd., Jianglian Heavy Industry Group Co., Ltd., Suzhou Hailu Heavy Industry Co., Ltd. Company, Sichuan Special Equipment Inspection Institute, Harbin Hongguang Boiler General Factory Co., Ltd., Wuxi Huaguang Environmental Protection Energy Group Co., Ltd. Co., Ltd., Wuxi Xineng Boiler Co., Ltd.,

Jiangsu Sifang Clean Energy Equipment Manufacturing Co., Ltd., Harbin Hadong Xinchun Boiler Co., Ltd., Hangzhou Lanhe New Energy Engineering Technology Co., Ltd., Shanghai Boiler Factory Co., Ltd., Wuxi Zhongzheng Boiler Co., Ltd., Wuxi Huaguang Industrial Boiler Co., Ltd. Co., Ltd., Yingkou Boiler and Pressure Vessel Inspection and Research Co., Ltd., Changzhou Energy Equipment Co., Ltd., Taishan Group Co., Ltd. Hailun Limin Energy Saving Boiler Manufacturing Co., Ltd., Shanghai Power Generation Equipment Complete Design and Research Institute Co., Ltd., Fujian Special Equipment Inspection Institute, China Special Equipment Inspection Institute, Zhejiang Juneng Boiler Manufacturing Co., Ltd., Wafangdian Yongning Machinery Factory, Harbin Industrial University, Yingkou Lvyuan Boiler Machinery Equipment Co., Ltd., Nanjing Ruikong Automation Co., Ltd., Changchun Special Equipment Testing Institute, Liaoning Changsheng Energy Saving Boiler Co., Ltd. The main drafters of this document are. Wang Shanwu, Yang Wen, Cai Xiaofeng, Li Jiangping, Cai Yongxiang, Mao Jun, Geng Changping, He Rong, Jiang Zhiming, Dong Yizhen, Wang Huanan, Xu Xiuqi, Lu Jiayi, Qian Jun, Pan Ruilin, Lan Zhongxiang, Su Jianping, Zou Xian, Li Qiumei, Han Peng, Jiang Peijun, Yang Qingsong, Li Changzheng, Bie Rushan, Chen Xiaohan, Wang Hongliang, Luan Zhongxin, Dai Guodong, Lü Xueyan, Yang Jupeng, Ding Hong, Fang Zixun, Diao Xiaoguang, Liang Kui, Chong Pei'an, Wan Xianjun, Qian Linfeng, Fan Bingbing, Da Yaodong, Ren Qiang, Wen Jili, Deng Qigang, Lin Heyong, Du Yongming, and Xu Fu.

In the context of global energy transformation and achieving climate change targets, accelerating the development and utilization of renewable energy such as biomass energy has become a It is a universal consensus and concerted action of all countries in the world. In recent years, my country's biomass power generation and heating technology has developed rapidly, with application areas and scales This document was formulated under the guidance of the "Action Plan for Green, Low-Carbon and High-Quality Development of Boilers", taking full account of the biomass boilers in my country. The application status and development trend of biomass boilers are put forward, including the design, manufacture, inspection and testing, installation and Technical requirements for acceptance, operation, etc. This document complies with the basic safety requirements and energy conservation requirements of TSG11 "Boiler Safety Technical Regulations" and TSG91 "Boiler Energy Conservation and Environmental Protection Technical Regulations". It not only meets the requirements of energy conservation and environmental protection, but also coordinates with the requirements of boiler core construction standards and other general boiler standards. This document aims to help my country innovate biomass energy utilization technology, accelerate the green and low-carbon transformation of boilers and promote high-quality development of the industry. It provides technical support for the safe, energy-saving and environmentally friendly operation of material boilers and their systems, and helps achieve the country's "dual carbon" goals. Technical Specifications for Biomass Boilers

1 Scope

GB/T 44906-2024 is the Chinese technical specification for biomass fired boilers. Burning straw, wood chip, husk and pellet is not the same problem as burning coal, and the standard exists because treating it as though it were is what ruins these boilers: biomass has a high and variable moisture content, low bulk density, and an ash rich in alkali metals and chlorine that slags the furnace and corrodes the superheater at temperatures a coal boiler would find unremarkable. The document sets the classification and the parameters, the requirements on the design of the furnace and the combustion system for the fuel range declared, on the heating surfaces and their arrangement and material selection against high temperature corrosion, on the fuel handling and feeding system, on the ash and slag removal, on the flue gas cleaning and on the control and safety systems, together with the requirements on materials, manufacture, inspection and testing, and the marking and documentation. Its companion GB/T 44907 covers the quality evaluation. For a boiler maker, a plant operator or a specifier in China, this is the governing text.

This document specifies the parameter series and model compilation method of biomass boilers and their systems, fuel, performance, design, auxiliary equipment and systems, Manufacturing, inspection and testing, painting, packaging, marking, nameplate and accompanying documents, installation, commissioning and acceptance and operation requirements. This document is applicable to stationary biomass solid fuel-burning heat exchangers that use water or organic heat carrier as a medium and meet one of the following conditions. Material boiler and its system.

a) Steam boilers with a rated working pressure greater than or equal to

0.1 MPa (gauge pressure) and a rated evaporation capacity greater than 2 t/h;

b) Hot water boilers or organic heat load boilers with a rated working pressure greater than or equal to

0.1 MPa (gauge pressure) and a rated thermal power greater than

1.4 MW Body boiler. The following fixed biomass boilers using water or organic heat carrier as the medium and burning pure biomass solid fuel can be used for reference.

--- Steam boilers (or hot water boilers and organic heat carriers) with a rated evaporation capacity of 2t/h (or rated thermal power of 1.4MW) and below boiler);

---Hot water boilers or organic heat carrier boilers with a rated working pressure of less than

0.1 MPa (gauge pressure).

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 753 Steam parameters for power plant boilers

GB/T 1576 Industrial boiler water quality

GB/T 1921 Industrial Steam Boiler Parameter Series

GB/T 2900.48 Electrical terminology - Boiler

GB/T 3166 Hot water boiler parameter series

GB/T 10180 Thermal performance test procedures for industrial boilers

GB/T 10184 Performance test procedures for power station boilers

GB/T 12145 Water vapor quality for thermal power generating units and steam power equipment

GB 13223 Emission Standard of Air Pollutants from Thermal Power Plants

GB 13271 Boiler Air Pollutant Emission Standard

GB/T 16507 (all parts) Water tube boilers

GB/T 16508 (all parts) Shell boilers

GB/T 17410 Organic heat carrier furnace