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

GB/T 44907-2024

**Technical criteria for the quality and performance evaluation of
biomass fired boilers**

生物质锅炉质量性能评价技术准则

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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 is required. 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/TC 262). This document was drafted by: Shanghai Industrial Boiler Research Institute Co., Ltd., Zhejiang Juneng Boiler Manufacturing Co., Ltd., Shanghai Special Equipment Supervision Inspection Technology Research Institute, Hangzhou Special Equipment Inspection Science Research Institute, Taishan Group Co., Ltd., Shanghai Boiler Factory Co., Ltd., Dongfang Boiler Co., Ltd. of Dongfang Electric Corporation, Shunde Inspection Institute of Guangdong Special Equipment Inspection Institute, Sichuan Special Equipment Inspection Institute Research Institute, Fujian Special Equipment Inspection Institute, Harbin Hadong Xinchun Boiler Co., Ltd., Hengyang Dacheng Boiler Co., Ltd., Wuxi Xineng Boiler Co., Ltd., Hangzhou Lanhe New Energy Engineering Technology Co., Ltd., Wuxi Huaguang Industrial Boiler Co., Ltd., Nantong Wanda Energy Power Power Technology Co., Ltd., Jianglian Heavy Industry Group Co., Ltd., Wuxi Zhongzheng Boiler Co., Ltd., Zhejiang Shuangfeng Boiler Manufacturing Co., Ltd., China Special Equipment Testing and Research Institute, Wuxi Huaguang Environmental Protection Energy Group Co., Ltd., Jiamusi University, Wafangdian Yongning Machinery Factory, Shanghai Power Generation Equipment Complete Design Institute Co., Ltd., Liaoning Changsheng Energy-Saving Boiler Co., Ltd., and Changchun Special Equipment Testing and Research Institute. The main drafters of this document are. Wang Shanwu, Li Jiangping, Zhu Yongzhong, Lü Yongming, Cai Xiaofeng, Zeng Yaochuan, Yang Wen, Jiang Peijun, Yin Huikun, Wang Huanan, Xiong Weidong, Xu Xiuqi, Zhou Xu, Wei Jiyong, Jiang Zhiming, Zhang Sheng, Zhang Zili, Zou Xian, Yang Qingsong, Geng Changping, Luan Jiye, Liang Yaodong, Fan Bingbing, Fang Zixun, Chen Zugen, Wen Jili, Chen Tao, Qiu Binbin, Liang Kui, Diao Xiaoguang, Da Yaodong, Chong Peian, and Wang

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In recent years, my country's biomass power generation and heating technology has developed rapidly, and the application areas and scale have continued to expand. There are many kinds of fuel and combustion methods, and the quality and performance of products vary. This document is guided by the "Action Plan for Green, Low-Carbon and High-Quality Development of Boilers". Next, from the actual development and application of biomass boiler technology in my country, as well as the successful practice of biomass boiler design, manufacturing, inspection, installation, operation, etc. Based on the practice and taking into full consideration the characteristics of biomass resource utilization in my country, a product quality evaluation index system based on the whole life cycle of biomass boilers was constructed. Standardization system and evaluation method. This document complies with the basic safety requirements and energy conservation requirements of TSG 11 "Technical Code for Boiler Safety" and TSG 91 "Technical Code for Boiler Energy Conservation and Environmental Protection". Energy and environmental protection requirements, and in line with the core construction standards of boilers, general product standards, and the requirements of GB/T 44906 "Technical Specifications for Biomass Boilers" Coordinate. This document serves as the basis for the evaluation and certification of the quality and performance of biomass boiler products, and is of great significance in guiding the technological innovation of biomass boilers and improving the quality of biomass boilers. The safety, energy-saving and environmentally friendly operation level of boilers, the continuous promotion of green, low-carbon and high-quality development of boilers, and the realization of the "dual carbon" goals are of great significance. Important significance. Technical criteria for quality and performance evaluation of biomass boilers

1 Scope

GB/T 44907-2024 sets the criteria for evaluating the quality and performance of a biomass fired boiler, the companion to the technical specification GB/T 44906. It is the document a purchase or an acceptance is settled against, and it is written around the property that makes a biomass boiler difficult to buy: its performance depends on the fuel, so a guarantee is meaningless unless the fuel it applies to is defined. The standard sets the evaluation indicators and their calculation, covering the thermal efficiency and the method by which it is determined, the output and the ability to hold it across the declared fuel range, the combustion efficiency and the unburnt carbon in the ash, the emissions of particulate, nitrogen oxides, sulfur dioxide and carbon monoxide, the auxiliary power consumption, the availability and the reliability, the slagging and fouling behaviour, and the safety and control functions, together with the test conditions, the measurement methods and the grading of the result. For a purchaser, a manufacturer or a testing body in China, this is the evaluation text.

This document specifies the technical indicators, evaluation methods and compliance

requirements for the quality performance evaluation of biomass boilers. This document applies to stationary biomass solid fuel biomass heat exchangers that use water or organic heat carrier as working fluid and meet the following conditions 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 and organic heat 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 Carrier boiler.

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 2900.48 Electrical terminology - Boiler

GB/T 10180 Thermal performance test procedures for industrial boilers

GB/T 10184 Performance test procedures for power station boilers

GB/T 15496 Enterprise Standard System Requirements

GB/T 15497 Enterprise Standard System Product Implementation

GB/T 15498 basic guarantee for enterprise standard system

GB/T 16507.3 Water-tube boilers Part

3 Structural design

GB/T 16507.6 Water-tube boilers Part

4 Manufacturing, inspection and acceptance

GB/T 19001 Quality Management System Requirements

GB/T 19022 Measurement management system - Requirements for measurement processes and measuring equipment

GB/T 19273 Evaluation and Improvement of Enterprise Standardization Work

GB/T 20000.6 Rules for Standardization Activities Part

6 Good Practice Guide

GB/T 23001 Requirements for the management system of integration of informatization and industrialization

GB/T 24001 Environmental Management System Requirements and Usage Guide

GB/T 44906 Technical Specification for Biomass Boilers

GB/T 45001 Occupational health and safety management system requirements and use guide

JB/T 3271 Technical requirements for chain grates NB/T 34012 Technical Specifications for Water-Cooled Vibrating Grate in Biomass Boilers NB/T 47013 (all parts) Non-destructive testing of pressure equipment NB/T 47034 Technical Requirements for Industrial Boilers NB/T 47050 Technical requirements for reciprocating grates NB/T 47051 Technical Specifications for Industrial Boiler Control Devices