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

**GB/T 34912-2024**

Replacing GB/T 34912-2017

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**Guide for the energy-saving design of industrial boiler systems**

工业锅炉系统节能设计指南

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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. This document replaces GB/T 34912-2017 "Guidelines for Energy-saving Design of Industrial Boiler Systems". In addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) The scope was changed and "Energy-saving Design for Plateau Environment" was added (see Chapter 1, Chapter 1 of the 2017 edition);

b) Added the application principles of new materials, new technologies and new processes, and changed the energy efficiency rating principles of industrial boiler system energy-using equipment (See 4.1.8, 4.1.8~

4.1.14 of the.2017 edition);

c) Added fuel quality principles for circulating fluidized bed boilers and biomass pellet fuel boilers (see

4.3.6 and 4.3.7);

d) Added the principles of multi-energy complementary systems of renewable energy and fossil energy, and energy storage systems (see 4.6);

e) Added the principle of "giving priority to renewable energy and clean fuels based on local policies and resource endowments" (see 5.1.3);

f) Deleted "Table

1 Requirements for coal quality of chain furnace" (see Table 1 of the.2017 edition);

g) The basic principles for boiler selection, the selection of layer-fired boilers, circulating fluidized bed boilers, pulverized coal industrial boilers, and oil and gas boilers have been changed. Principles (see

5.9 of the.2017 edition);

h) Added the selection principles for electrode-type electric heating boilers, electric thermal energy storage boilers, and biomass fuel boilers (see

## 1 Scope

GB/T 34912-2024 is the Chinese guide to designing an industrial boiler system for energy efficiency. Industrial boilers are the largest single category of coal and gas burning plant in China outside power generation, several hundred thousand of them, and most of the energy they waste is lost at the design stage rather than in operation: a boiler oversized for the load cycles on and off all day, a system designed without waste heat recovery cannot get it back later, and insulation and control specified late are specified badly. The guide is written in the order the design is done: the heat load, fuel and water quality data that have to be established first; the selection of the boiler by firing type, grate-fired, circulating fluidised bed, electrode electric, electric heat storage and biomass; the steam and water system; the fuel and ash handling including oil and gas storage and delivery; the air and flue gas system; waste heat recovery; the insulation of equipment and pipework; the monitoring and control; and the particular measures required at high altitude. The 2024 edition replaces GB/T 34912-2017.

This document provides the general principles for energy-saving design of industrial boiler

systems, boilers, steam-water systems and equipment, fuel and ash storage and transportation systems and Equipment, air and smoke systems and equipment selection, waste heat recovery, equipment and pipeline insulation, monitoring and control, plateau environment energy-saving design and industrial boilers Guidance on calculation methods of system energy-saving indicators, etc. This document is applicable to single boilers with water as the medium, rated outlet steam pressure of 0.1MPa~3.8MPa, and rated steam temperature less than Industrial steam boiler systems with a rated outlet water pressure of 0.1 MPa to

2.5 MPa and industrial hot water boiler systems with a rated outlet water pressure of 450°C or above Can design and transform.

## 2 Normative references

The contents of the following documents constitute 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 150.1 Pressure vessels Part