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CCS F01



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

GB 31825-2024

Replacing GB 31825-2015

**Norm of energy consumption per unit production of pulp and
paper**

制浆造纸单位产品能源消耗限额

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1 Scope

GB 31825-2024 is the Chinese national standard on norm of energy consumption per unit production of pulp and paper, in the field of energy and heat transfer engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 29 April 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2025.

Classification: ICS 27.010, CCS F01. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the limit levels, technical requirements, statistical scope for energy consumption per unit product (hereinafter referred to as energy consumption) of pulp, machine-made paper, paperboard; describes the calculation method. This document applies to the calculation and assessment of energy consumption per unit product of pulp, machine-made paper, paperboard made primarily from plant fibers, as well as the energy consumption control of new and expanded projects.

2 Normative references

The following documents, through normative references herein, constitute essential provisions of this document. For dated references, only the edition cited applies; for undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 12723 General principles for establishing allowance of energy consumption per unit throughput

GB 17167 General rules for energy measuring instrument equipping and managing of energy user

GB/T 29454 Specification for equipping and managing of the measuring instrument of energy in the pulp and paper enterprise

3 Terms and definitions

The terms and definitions defined in GB/T 12723, as well as the following terms and definitions apply to this document.

3.1 Main production system of pulp The complete technological process and equipment comprising the relevant steps from the metering and preparation of fiber raw materials, through chemical, mechanical, and other methods, to the production of pulp or commercial pulp and its storage.

3.2 Main production system of machine-made paper and board The complete technological process and equipment comprising all steps from pulp preparation (from metering) of self-use pulp or commercial pulp to papermaking into finished paper or paperboard, finally to warehousing.

3.3 Auxiliary production system The technological processes, facilities, equipment configured for the main production system.

Note. Includes power, electromechanical, machine repair, water supply, gas supply, heating, refrigeration, raw material storage areas within the plant, safety and environmental protection devices.

3.4 Ancillary production system The production command system and departments and units within the plant that serve production, configured for the main and auxiliary production systems.

Note. Includes offices, control rooms, central control rooms, rest rooms, changing rooms, inspection rooms, etc.

4 Energy consumption limit levels

4.1 Pulp energy consumption limit levels See Table 1 for the unit product energy consumption limit levels for pulp, with Level 1 having the lowest energy consumption.

5 Technical requirements

5.1 Energy consumption limits Existing pulp and paper enterprises shall meet the Level 3 requirements in Table 1 or Table 2 for their unit product energy consumption limits.

5.2 Energy consumption access values Newly built, renovated, expanded pulp and paper enterprises shall meet the Level 2 requirements in Table 1 or Table 2 for their unit product

energy consumption access values.

6.1 General rules

6.1.1 Energy consumption per unit product in pulp and paper manufacturing is statistically calculated separately for pulp energy consumption, machine-made paper, paperboard energy consumption.

6.1.2 During the statistical period, the production system shall be in normal operation. Energy consumption during trial operation, system maintenance, repairs, etc., is not included in the statistical scope.

6.1.3 Energy consumed by self-owned thermal power plants of pulp and paper manufacturing enterprises is not included in the statistical scope. Electricity or heat supplied by self-owned thermal power plants to the pulp and paper production system is calculated as purchased electricity or purchased heat.

6.1.4 The consumption of various energy sources and energy-consuming working materials input into the production system is converted to standard coal equivalent. The calorific value of various energy sources is based on the actual measured value of the enterprise during the statistical reporting period. If no actual measured value is available, the conversion factors in Appendix A can be used for conversion. Electricity and heat are converted according to the corresponding energy equivalent value; the coefficients are shown in Appendix A. The conversion factors for energy-consuming working materials are shown in Appendix B.

6.1.5 Energy consumption statistics and calculations cover all production stages of the production system, ensuring neither duplication nor omission. Waste heat recovered from the main production system is considered a form of energy conservation and recycling, which is deducted based on the actual energy recovered. Energy consumption by waste heat recovery and utilization devices is included in energy consumption, while waste heat recovered by auxiliary and subsidiary production systems is not deducted. If the enterprise has an alkali recovery system, the energy consumption of the alkali recovery device is included in the main pulp production system. For enterprises that simultaneously produce self-use pulp and commercial pulp, the energy recovered by the alkali recovery device is deducted according to the production ratio of self-use pulp and commercial pulp. The energy (heat, electricity) recovered by the alkali recovery device is considered a form of energy conservation and recycling. The energy (heat, electricity) supplied by the alkali recovery device to the pulp and paper production system is converted to its corresponding energy equivalent value and deducted from the energy consumption of the main pulp production system, to avoid double counting.