

ICS 65.020.99
CCS F 10

LY

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

LY/T 3158-2019

**Comprehensive energy consumption of wood-pulp production
(English Translation)**

Issued on: October 23, 2019

Implemented on: April 1, 2020

Issued by: State Forestry and Grassland Administration

Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and definitions
4 Classification of comprehensive energy consumption per unit of output
5 Statistical scope of energy consumption
6 Calculation principles and methods for energy consumption of wood pulp production
6.1 Calculation Principles of Energy Consumption for Wood Pulp Production
6.2 Calculation method of comprehensive energy consumption for wood pulp production
7 Energy management and measures

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the National Energy Foundation and Management Standardization Technical Committee of the Forestry Energy Management Sub-Technical Committee (SAC/TC20/SC7) and centralize.

This standard was drafted. Heilongjiang Forest Engineering and Environment Research Institute, Heilongjiang Paper Mill, Yunnan Yunjing Forest Paper Co., Ltd., Shandong Sun Paper Co., Ltd., Daxinganling Pulp and Paper Co., Ltd., Yueyang Forest Paper Co., Ltd., Guangxi Jingui Pulp and Paper Co., Ltd.

Division.

1 Scope

This standard defines the terms and definitions of the comprehensive energy consumption of wood pulp production, and specifies the statistical scope of the comprehensive energy consumption classification and energy consumption per unit of wood pulp production Environmental protection, energy consumption calculation principles and methods, energy management and measures.

This standard applies to the calculation and index assessment of the comprehensive energy consumption of wood pulp production enterprises.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 2589 General Calculation Rules for Comprehensive Energy Consumption GB/T 4687 paper, paperboard, pulp and related terms GB 17167 General Rules for the Provision and Management of Energy Measuring Instruments in Energy-Used Units GB 29454 Equipment and Management Requirements for Energy Measuring Instruments in Pulp and Paper Enterprises

3 Terms and definitions

The terms and definitions defined in GB/T 4687 and the following apply to this document.

Comprehensive energy consumption of wood-pulp production the actual amount of various energy sources actually consumed by wood pulp manufacturers during the statistical reporting period is discounted according to the prescribed calculation method and measurement unit Sum of standard coal.

Comprehensive energy consumption for unit output of wood-pulp production During the statistical reporting period, the ratio of the comprehensive energy consumption of wood pulp production to the output of qualified products in the same period was converted into tons of air-dried pulp (Adt).

Direct production system Refers to preparation, pulping, papermaking, packaging of finished products, etc.

Indirect production system Including auxiliary production systems and auxiliary production systems.

Auxiliary production system Processes, facilities, and equipment configured for direct production systems. Including power, electromechanical, mechanical repair, water supply, gas supply, heating, refrigeration and raw material sites in the plant, as well as safety and environmental protection devices. Auxiliary production systems do not include lime kilns.

Subsidiary production system the production command system configured for the direct production system and the auxiliary production system and the departments and units in the factory that serve production. Including office Room operation room, central control room, rest room, changing room, inspection room, etc.

4 Classification of comprehensive energy consumption per unit of output

4.1

Classification of comprehensive energy consumption per unit output of chemical wood pulp production the comprehensive energy consumption classification of unit output of chemical wood pulp production is shown in Table 1.

Table 1 Table 1 Comprehensive energy consumption classification of unit output of chemical wood pulp production

Units are kilograms of standard coal per ton of air-dried pulp Energy class Bleached chemical wood pulp a Commercial pulp commercial pulp First level $q \leq 120$ $q \leq 240$ $q \leq 80$ $q \leq 200$ Class $120 < q \leq 160$ $240 < q \leq 280$ $80 < q \leq 120$ $200 < q \leq 240$ Three levels $160 < q \leq 200$ $280 < q \leq 320$ $120 < q \leq 160$ $240 < q \leq 280$ Note. Coniferous pulp increased by 8%.

Includes alkali recovery system.

4.2

Classification of comprehensive energy consumption per unit output of chemical mechanical wood pulp production the comprehensive energy consumption classification of unit output of chemical mechanical wood pulp production is shown in Table 2.

Table 2 Classification of comprehensive energy consumption per unit output of chemical mechanical wood pulp production

Units are kilograms of standard coal per ton of air-dried pulp Energy grading grade Energy grading (self-use pulp) First class $q \leq 160$ Level $160 < q \leq 200$ Three levels $200 < q \leq 240$ Note. Coniferous pulp increased by 8%.

5 Statistical scope of energy consumption

5.1.1

The energy consumption of wood pulp production should be within the statistical period, the production system is in a normal operating state, the production trial operation, the entire system is down for maintenance, etc.

Energy consumption under normal operation is not in the statistical range.

5.1.2

The statistical scope of energy consumption shall include the primary energy, secondary energy consumed by the wood pulp direct production system, and the energy-consuming working medium consumed by production.

Of energy. The energy consumption and energy loss of auxiliary production systems and auxiliary production systems shall also be included in the energy consumption per unit of product.

5.1.3

The statistics and calculation of energy consumption shall include all production links of the production system, without duplication and leakage, and the enterprise directly recycles the production system.

The waste heat belongs to saving and recycling, which should be deducted according to the actual energy recovered. When the enterprise has an alkali recovery system, the alkali recovery device uses energy it should be included in the energy consumption, and the recovered energy (heat, electricity) should be converted according to the energy equivalent value and deducted from the energy consumption of the production system to avoid double counting.

6.1 Calculation Principles of Energy Consumption for Wood Pulp Production

The calculation of energy consumption for wood pulp production shall comply with the relevant regulations of GB/T 2589. The calorific value of various energy sources should be measured by the enterprise during the statistical reporting period the value shall prevail. If there is no measured value, please refer to Appendix A for standard coal coefficient conversion. The physical quantity of heat should correspond to the pressure and temperature of steam the enthalpy value is calculated by multiplying the mass of the steam by the megajoule (MJ).

6.2 Calculation method of comprehensive energy consumption for wood pulp production

The calculation of comprehensive energy consumption for wood pulp production is carried out according to formula (1) or (2).

$$Q_{\text{total}} = Q_{\text{direct}} + Q_{\text{indirect}} \quad (1)$$

In the formula.

Q_{total} --Comprehensive energy consumption for wood pulp production, in kilograms of standard coal (kgce);

Q_{direct} --Comprehensive energy consumption of direct production system, unit is kilogram standard coal (kgce);

Q_{indirect} --Integrated energy consumption of indirect production system, unit is kilogram standard coal (kgce).

Or $Q_{\text{total}} = Q_{\text{direct}} + Q_{\text{indirect}} \quad (2)$ in the formula.