



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

GB/T 1927.18-2021

**Test methods for physical and mechanical properties of small
clear wood specimens - Part 18: Determination of resistance to
impact indentation**

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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 of Standardization Documents"

drafted:

This document is part 18 of GB/T 1927 "Test Methods for Physical and Mechanical Properties of Small Specimens of Wood without Defects": GB/T 1927 has been issued

The following parts are distributed:

- Part 1: Collection of test materials;
- Part 2: Sampling methods and general requirements;
- Part 3: Determination of growth ring width and latewood rate;
- Part 4: Determination of moisture content;
- Part 5: Density determination;
- Part 6: Determination of dry shrinkage;
- Part 7: Determination of water absorption;
- Part 8: Determination of swelling properties;
- Part 9: Determination of flexural strength;
- Part 10: Determination of flexural modulus of elasticity;
- Part 12: Determination of transverse grain compressive strength;
- Part 17: Determination of impact toughness;
- Part 18: Determination of impact indentation;

--- Part 19: Determination of hardness;

--- Part 20: Determination of splitting resistance:

This document is modified to adopt ISO 13061-11:2017 "Wood physical and mechanical test methods for small test specimens with flawless properties - Part 11: Impact resistance Hit Indentation Determination":

This document has structural changes from ISO 13061-11:2017:

--- Added "Terms and Definitions" (see Chapter 3):

The technical differences between this document and ISO 13061-11:2017 and their reasons are as follows:

--- Regarding normative reference documents, this document has made adjustments with technical differences to adapt to the technical conditions of our country and the circumstances of the adjustment:

The situation is reflected in Chapter 2 "Normative References", and the specific adjustments are as follows:

* Added GB/T 1927:1-2021;

* Replace ISO 3129:2019 with GB/T 1927:2-2021 which is modified to adopt international standard (see 6:1);

* Replace ISO 13061-1:2014 with GB/T 1927:4-2021 which is modified to adopt international standard (see 6:2);

* Replace ISO 13061-2:2014 with GB/T 1927:5-2021 which is modified to adopt international standard (see 6:3);

* Deleted ISO 24294, the term of logs and sawn timber is not involved in this document, so this reference standard is deleted:

--- Added the principle (see Chapter 4), which is consistent with other parts of the standard of the test method for the physical and mechanical properties of wood with small samples without defects:

--- Added the schematic diagram of the falling ball impact testing machine (see Chapter 5), which is helpful for understanding the testing equipment:

--- Increase the number of defect-free small sample wood samples in the falling ball impact test (see 6:4), and calculate the coefficient of variation from the test data as

15%, and obtained in accordance with 5:1:1 in GB/T 1927:2-2021:

The following editorial changes have also been made to this document:

--- In order to harmonize with the existing standards, the name of the standard is changed to "Test methods for physical and mechanical properties of wood with small samples without defects - Part 18: Resistance to

Impact Indentation Determination":

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

The standard of test methods for physical and mechanical properties of wood is used in wood scientific research, teaching, wood inspection, wood structure design, wood processing and production, etc:

It is widely used and is an important basic standard in the wood industry: In 1980, my country issued the first edition of the test methods for physical and mechanical properties of wood:

The domestic standard (GB/T 1927~GB/T 1943) was revised twice in:1991 and:2009 respectively: In recent years, with the development of wood science and technology

The development of technology, ISO 3129:2012 "Sampling methods for wood physical and mechanical tests of small samples of wood without defects and

"General Requirements" has been revised, ISO 3130:1975 "Determination of moisture content by physical and mechanical tests of wood", ISO 3131:1975 "Wood

15 international standards for test methods such as "Determination of Density in Physical and Mechanical Tests" have been integrated and revised: Based on this, in order to be in line with international standards, this time

The third revision was made to the national standard for test methods for physical and mechanical properties of wood in my country, and the 22 scattered test methods were integrated and adjusted to

The sub-part document of GB/T 1927 adopts the latest version of the international standard in the revision:

GB/T 1927 aims to establish a test method for the physical and mechanical properties of small sample wood without flaws, and is intended to be composed of 21 parts:

--- Part 1: Collection of test materials: The purpose is to describe the sample collection method for testing the physical and mechanical properties of wood with small samples without defects:

--- Part 2: Sampling methods and general requirements: The purpose is to establish a suitable test for the physical and mechanical properties of small wood samples without

defects:

Specimen sawing, interception methods and general requirements to be observed when testing methods:

--- Part 3: Determination of growth ring width and latewood rate: The purpose is to characterize the growth ring width and latewood rate of small samples of clear wood

method of determination:

--- Part 4: Determination of moisture content: The purpose is to describe a method for the determination of the moisture content of small wood samples without defects:

--- Part 5: Density determination: The purpose is to describe the density, air-dry density, absolute dry

Methods for the determination of density and basic density:

--- Part 6: Determination of dry shrinkage: The purpose is to describe the measurement of radial, chordwise and volume drying shrinkage of unblemished small sample wood:

determined method:

--- Part 7: Determination of water absorption: The purpose is to describe the determination method of 6h, 24h and the maximum water absorption rate of small sample wood without defect:

--- Part 8: Determination of swelling: The purpose is to describe the measurement of radial, chordwise and volumetric swell of unblemished small wood samples:

determined method:

--- Part 9: Determination of flexural strength: The purpose is to describe a method for the determination of the flexural strength of small wood samples without defects:

--- Part 10: Determination of flexural modulus of elasticity: The purpose is to describe a method for the determination of the flexural modulus of elasticity of small wood samples without defects:

--- Part 11: Determination of compressive strength along grain: The purpose is to describe a method for the determination of the compressive strength along the grain of small wood samples without defects:

--- Part 12: Determination of transverse grain compressive strength: The purpose is to describe the transverse grain compressive proportional ultimate strength of small unblemished wood samples, including

Methods for the determination of the total compressive proportional ultimate strength of the horizontal grain and the partial compressive proportional ultimate strength of the horizontal grain: