



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

GB/T 1927.15-2022

**Test methods for physical and mechanical properties of small
clear wood specimens - Part 15: Determination of tensile
strength perpendicular to grain**

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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"

Drafting.

This document is part 15 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 11.Determination of compressive strength along grain;
- Part 12.Determination of transverse grain compressive strength;
- Part 13.Determination of compressive elastic modulus of transverse grains;
- Part 14.Determination of tensile strength along grain;
- Part 15.Determination of transverse grain tensile strength;
- Part 16.Determination of shear strength along grain;
- Part 17.Determination of impact toughness;
- Part 18.Determination of impact indentation;
- Part 19.Determination of hardness;
- Part 20.Determination of splitting resistance;
- Part 21.Determination of nail holding force.

This document replaces GB/T 14017-2009 "Test Method for Tensile Strength of Wood Horizontal Grain". Compared with GB/T 14017-2009,

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Added terms and definitions (see Chapter 3);
- Added the description and requirements that the moisture content of the sample can be green (see 6.3);
- Changed the requirements for the loading time range (see 7.3, 6.3 of the.2009 edition);
- Increase the sampling requirements for the measurement of moisture content and density after the tensile strength test of the transverse grain of the sample (see 7.5);
- Changed the accuracy requirements for cross-grain tensile strength results (see 8.1 and 8.2, 7.1 and 7.2 of the.2009 edition);
- Changed the effective range of sample moisture content when the tensile strength of the transverse grain of the sample is converted to a unified value (12% moisture content) (see 8.2,.2009

7.2 of the year edition);

- Added the specific content of the test result record and report (see Chapter 9);
- The test record table for transverse grain tensile strength of wood has been changed from a normative appendix to an informative appendix (see Appendix A,.2009 edition of Appendix A).

This document is modified to adopt ISO 13061-7.2014 "Test methods for the physical and mechanical properties of wood with small defect-free specimens - Part 7.Horizontal grain

Determination of Ultimate Tensile Stress.

The technical differences between this document and ISO 13061-7.2014 and the main reasons are as follows.

--- Updated the schematic diagram of the sample (see Figure 1). The schematic diagram of the sample is combined with ISO 13061-7 on the basis of GB/T 14017-2009.

In.2014, for the size requirements of the sample, a new sample size specification was formed, which is more conducive to understanding the test equipment and operation steps. step, and in line with international standards.

--- Follow the moisture content correction coefficient of GB/T 14017-2009 to make the transverse grain tensile strength of samples with different moisture contents in the radial and chord directions

The conversion is more precise.

The following editorial changes have 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 15.Horizontal

Determination of Grain Tensile Strength.

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 method standards 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 measurement.

--- 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 of small sample wood without defects.

--- Part 8.Determination of swelling. The purpose is to describe the measurement of radial,