



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

GB/T 1927.16-2022

**Test methods for physical and mechanical properties of small
clear wood specimens - Part 16: Method of testing in shearing
strength parallel to grain of wood**

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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 16 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 1937-2009 "Test method for shear strength of wood along the grain". Compared with GB/T 1937-2009, except for the structural

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

- a) Changed the scope of application (see Chapter 1, Chapter 1 of the.2009 edition);
- b) terms and definitions are added (see Chapter 3);
- c) Changed the range of the moisture content of the specimen and its control method (see Chapter 6, Chapter 5 of the.2009 edition);
- d) Added "The test is loaded at a uniform speed, the specimen is destroyed within 1min~3min, and the load reading is accurate to 10N" (see 7.4);
- e) The sampling method for the determination of moisture content after the failure of the specimen is added (see 7.5);
- f) Changed the range of moisture content used to determine the sample (see Chapter 8, Chapter 7 of the.2009 edition).

This document is revised and adopted ISO 3347.1976 "Determination of ultimate shear stress along the grain of wood".

Compared with ISO 3347.1976, this document has the following structural adjustments.

- a) Added "3 Terms and Definitions";
- b) Chapter 4 corresponds to Chapter 3 of ISO 3347.1976;
- c) Chapter 5 corresponds to Chapter 4 of ISO 3347.1976;
- d) Chapter 6 corresponds to Chapter 5 of ISO 3347.1976;

e) Chapter 7 corresponds to Chapter 6 of ISO 3347.1976;

f) Clause 8 corresponds to Clause 7 of ISO 3347.1976.

The technical differences between this document and ISO 3347.1976 and the main reasons are as follows.

a) Figure 1 and Figure 2 are added to help understand the test equipment and samples;

b) 6.3.1 adds the provisions for green wood samples, because it is necessary to measure the green wood samples, and it is consistent with the series of standards;

c) This document changes the test loading speed range (see 7.4), the loading speed still meets the requirements of ISO 3347.1976, and the historical

The version remains the same;

d) 8.2 specifies the moisture content range and adjustment factor of the specimen to facilitate the calculation of the test results.

The following editorial changes have been made to this document.

a) In order to harmonize with the existing standards, the name of the standard is changed to "Test methods for the physical and mechanical properties of wood with small samples without defects - Part 16. Wood

Determination of shear strength along grain";

b) Added Appendix A "Wood Shear Strength Test Record Table".

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 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,