INTERNATIONAL STANDARD 3350

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Wood — Determination of static hardness

Bois — Détermination de la dureté statique

First edition — 1975-08-15

UDC 674.03 : 539.533

Ref. No. ISO 3350-1975 (E)

Descriptors : wood, tests, hardness tests.

Price based on 2 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3350 was drawn up by Technical Committee ISO/TC 55, *Sawn timber and sawlogs,* and circulated to the Member Bodies in February 1974.

It has been approved by the Member Bodies of the following countries :

Belgium	Hungary	Romania
Bulgaria	India	South Africa, Rep. of
Canada	Ireland	Spain
Czechoslovakia	Netherlands	Sweden
Egypt, Arab Rep. of	New Zealand	Turkey
Finland	Norway	United Kingdom
France	Poland	U.S.S.R.

No Member Body expressed disapproval of the document.

Printed in Switzerland

Wood — Determination of static hardness

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the static hardness of wood.

2 REFERENCES

ISO 3129, *Wood — Sampling methods and general requirements for physical and mechanical tests.*[1)]

ISO 3130, *Wood — Determination of moisture content in physical and mechanical tests.*[1)]

3 PRINCIPLE

Determination of the resistance of a test piece to the penetration of a plunger to a specified depth under a gradually increasing load.

4 APPARATUS

4.1 Testing machine, ensuring the rate of movement of the loading head according to 6.1 and allowing measurement of the load to an accuracy of 1 %.

4.2 Device consisting of a body, a plunger with a hemispherical tip of radius 5,64 ± 0,01 mm, and an instrument for measuring linear movements to an accuracy of 0,01 mm.

4.3 Equipment for the determination of moisture content in accordance with ISO 3130.

5 PREPARATION OF TEST PIECES

5.1 The test pieces shall be made in the form of right prisms having a square cross-section 50 mm × 50 mm and length along the grain not less than 50 mm.

5.2 The preparation, moisture content and number of test pieces shall be in accordance with ISO 3129.

6 PROCEDURE

6.1 Indent the test piece with the plunger on the centre line of the radial, tangential and end surfaces of the test piece to a depth equal to the radius of the hemispherical tip of the plunger (5,64 mm) or, if splitting of the test piece occurs, to a depth of 2,82 mm, at a constant speed of 3 to 6 mm/min. When this depth of indentation is reached, read the load to the accuracy specified in 4.1.

6.2 After completing the test, determine the moisture content of the test pieces according to ISO 3130.

Take the portions of the test piece having indentation marks as the sample for determination of moisture content. To determine the mean moisture content, it is permissible to use only some of test pieces. The minimum number of test pieces for moisture content determination shall be in accordance with ISO 3129.

7 CALCULATION AND EXPRESSION OF RESULTS

7.1 The static hardness H_{Wc} of each test piece at a moisture content W at the time of test is given, in newtons, as the load necessary to obtain an indentation whose area of projection is equal to 1 cm², by the following formula :

$$H_{Wc} = K P$$

where

P is the load during the penetration of the plunger into the test piece to the specified depth, in newtons;

K is the coefficient equal to 1 and 4/3 in the case of penetration of the plunger to a depth of 5,64 mm and 2,82 mm respectively.

Express the result to an accuracy of 1 N.

7.2 When necessary, the static hardness of the test piece H_{Wc} shall be adjusted to a 12 % moisture content to an accuracy of 1 N by the formula which is valid for a moisture content of 12 ± 3 % :

$$H_{12c} = H_{Wc} [1 + \alpha (W - 12)]$$

where α is the correction factor for moisture content, whose value shall be obtained from national standards.

1) At present at the stage of draft.