INTERNATIONAL STANDARD 3348

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Wood — Determination of impact bending strength

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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 3348 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	South Africa, Rep. of
Bulgaria	India	Spain
Canada	Ireland	Sweden
Czechoslovakia	Netherlands	Thailand
Egypt, Arab Rep. of	New Zealand	Turkey
Finland	Norway	United Kingdom
France	Poland	U.S.S.R.
Germany	Romania	

No Member Body expressed disapproval of the document.

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Wood — Determination of impact bending strength

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for determination of the impact bending strength of wood using a pendulum impact testing machine.

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 impact strength by testing a test piece for cross-sectional bending under dynamic load application.

4 APPARATUS

4.1 Pendulum impact machine with a range of energy three to five times more than the work used for the impact break of the test piece and allowing the measurement of the energy to an accuracy of 1 J. The pendulum tup and test piece supports shall have a radius of curvature of 15 mm. The height of the supports shall be greater than 20 mm. The distance between the centres of the supports shall be 240 ± 1 mm.

4.2 Measuring instrument for determining the cross-sectional dimensions of test pieces to an accuracy of 0,1 mm.

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

5 PREPARATION OF TEST PIECES

5.1 Test pieces shall be made in the form of right prisms having a square cross-section 20 mm × 20 mm and length along the grain 300 mm. One face of the test piece shall lie in a radial plane and the other in a tangential plane.

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

6 PROCEDURE

6.1 Carry out the determination of impact strength by an impact, usually, on a radial surface (a tangential bending). It is permitted to carry out the determination by an impact on a tangential surface (a radial bending).

6.2 Before the test, measure the cross-sectional dimensions in the middle of the test piece to an accuracy of 0,1 mm.

6.3 The test piece, placed symmetrically on the supports, shall be broken by one impact. Measure the work absorbed by the test piece to the accuracy specified in 4.1. The form of fracture (conchoidal or chipped) shall be recorded in the test report. A conchoidal fracture shall be considered as one with projecting fibres of not more than 3 mm long.

6.4 After the test has been completed, determine the moisture content of the test pieces according to ISO 3130.

Take a portion 20 to 30 mm long, cut from near the fracture, as the sample for determination of moisture content. To determine the mean moisture content, it is permissible to use only some of the test pieces. The minimum number of test pieces for moisture content determination shall be determined in accordance with ISO 3129.

7 CALCULATION AND EXPRESSION OF RESULTS

7.1 The impact bending strength, A_W, of each test piece at a moisture content W at the time of test is given, in kilojoules per square metre, by the formula :

$$A_W = \frac{1\,000\,Q}{bh}$$

where

Q is the energy required for fracture of the test piece, in joules;

b and h are the dimensions of the test piece in the radial and tangential directions, in millimetres.

Express the result to an accuracy of 1 kJ/m².

1) At present at the stage of draft.