



SLOVENSKI STANDARD SIST EN 311:1996

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Iverne plošče - Določanje trdnosti zunanjega sloja - Preskusna metoda

Particleboards - Surface soundness of particleboards - Test method

Spanplatten - Abhebefestigkeit von Spanplatten - Prüfverfahren

Panneaux de particules - Arrachement de la surface des panneaux de particules -
Méthode d'essai

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Ta slovenski standard je istoveten z: **EN 311:1992**

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ICS:

79.060.20 Vlaknene in iverne plošče Fibre and particle boards

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en

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EUROPEAN STANDARD

EN 311:1992

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 1992

UDC 674.815-41:620.176.2

Descriptors: Wooden boards, particle boards, area gluing, tear strength, tests

English version

**Particleboards - Surface soundness of particleboards
- Test method**

Panneaux de particules - Arrachement de la
surface des panneaux de particules - Méthode
d'essai

Spanplatten - Abhebefestigkeit von Spanplatten
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard was prepared by Working Group 1 "Particleboards" (Secretariat : Germany) of Technical Committee CEN/TC 112 "Wood-based panels" (Secretariat : Germany).

For this European Standard a mandate "Timber Structures" has been given to CEN by EC and EFTA in the framework of the Directive on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (89/106/EEC).

This standard is one of a series of standards which specify methods of test for determining dimensions and properties of wood-based panels.

No existing European Standard is superseded.

National Standards identical to this European Standard shall be published at the latest by 93-01-31 and conflicting national standards shall be withdrawn at the latest by 93-01-31.

In accordance with the CEN/CENELEC Common Rules, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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1 Scope

This European Standard specifies a method of assessing the surface soundness of uncoated particleboards ¹⁾.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard, only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 309 Particleboards - Definition and Classification

EN 326-1 Wood-based panels - Sampling, cutting and inspection
Part 1: Sampling, cutting of test pieces and evaluation of test results ²⁾

3 Definition

Surface soundness: face strength or quality of bonding between the particles on the surface of a board and the underlying material.

It is measured by the force required to pull a steel pad from the surface of the particleboard to which it has been bonded.

4 Principle

Square test pieces, 50 mm x 50 mm, are cut from the particleboard to be tested. A shallow circular groove is cut into the surface of the test piece and a steel pad bonded to the area within the groove. The force required to pull this pad from the surface is measured using a tensile testing machine.

5 Apparatus

5.1 Devices to produce a groove within the tolerance specified in 6.2.

5.2 Steel mushroom - shaped pad illustrated in figure 2.

5.3 Centring frame specified in figure 3.

5.4 Tensile testing machine capable of applying a maximum load of 2500 N.

5.5 Gimbal as illustrated in figure 4.

¹⁾ This method may also be used with surfaced particleboards, to assess the bond between the surfacing material (eg. veneer, laminated foil, or paint) and the underlying board. In this case, the surface soundness of the board is not being measured, but the bond between the surfacing material and the underlying board.

For testing surfaced boards, proceed as specified in clauses 6 and 7. However, the circular groove shall be cut through the surfacing material and into the underlying board to a maximum depth of 0,3 mm. The adhesive shall be selected according to the surfacing material.

²⁾ at present at the draft stage

6 Test pieces

6.1 Sampling and cutting

Carry out the sampling and cutting in accordance with EN 326-1.

10 test specimens, each 50 mm x 50 mm, shall be taken from each board to be tested.

6.2 Preparing the groove in the test piece

A circular groove shall be cut into the surface of the test pieces (see figure 1) by means of a milling tool (5.1).

On half of the test pieces this groove shall be on the upper face of the board and on the other half it shall be on the lower face.

The groove shall have an inside diameter of 35,7 mm (enclosing an area of 1000 mm²) and a depth of (0,3 ± 0,1) mm.

6.3 Conditioning

All test pieces shall be conditioned to constant mass in an atmosphere with a percentage relative humidity of (65 ± 5) % and a temperature of (20 ± 2) °C prior to the bonding of the steel mushroom-shaped pad (5.2) to the surface. Constant mass is considered to be reached when the results of two successive weighing operations, carried out at an interval of 24 h, do not differ by more than 0,1 % of the mass of the test piece.

7 Procedure

7.1 Bonding the steel pad to the surface

NOTE: The type of adhesive used, the quantity used, and the manner of application can all affect the measured strengths.

Use a hot-melt adhesive with a melting point under 150 °C at a maximum application of 0,3 g, spread evenly across the face of the heated steel pad. The centring frame is used to position the pad exactly on the test piece. Whilst in the centring frame the hot pad shall be pressed onto the surface of the test piece and held with a light pressure of 0,1 - 0,2 N/mm² until the adhesive has cooled and hardened.

If the particleboards to be tested are thinner than 10 mm the surface soundness test pieces shall be strengthened by bonding further pieces to the underside so that the total thickness is at least 10 mm.

7.2 Determination of force at fracture

After the adhesive has cooled the test piece shall be placed in the apparatus (5.5).

A force is applied so that fracture occurs in 30 to 90 seconds.

Record the force at fracture F to the nearest Newton.

8 Expression of results

The surface soundness (SS) for each test piece (in N/mm²) shall be calculated from the formula:

$$SS = F/A$$

where

F is the force at fracture in Newtons

A is the surface area given in 6.2 (1000 mm²).

Express the result to the nearest 0,01 N/mm².

9 Test report

As described in EN 326-1.

Dimensions in millimeters

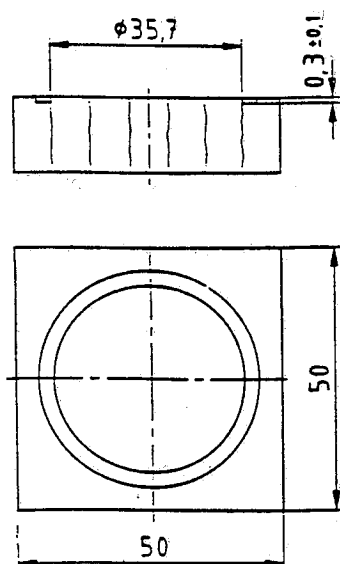


Figure 1: Test piece - showing circular groove

Dimensions in millimeters

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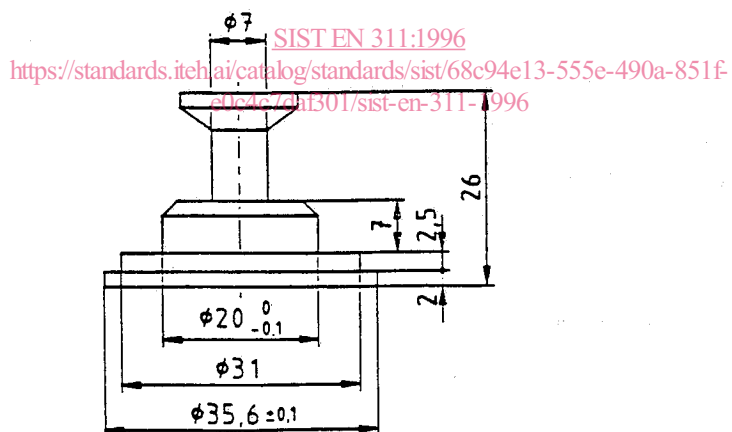


Figure 2: Steel mushroom-shaped pad