SLOVENSKI STANDARD
SIST-TS CEN/TS 13354:2004

01-januar-2004

Masivne lesne ploġ e ï Kakovost zlepljenosti ï Preskusna metoda

Solid wood panels - Bonding quality - Test method

Massivholzplatten - Qualität der Verklebung - Prüfverfahren

Bois panneautés - Qualité du collage - Méthode d'essai

Ta slovenski standard je istoveten z: **CEN/TS 13354:2003**

ICS:

79.060.99 Druge lesne ploġ e Other wood-based panels

SIST-TS CEN/TS 13354:2004 **en**

TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 13354

May 2003

ICS 79.060.99

English version

Solid wood panels - Bonding quality - Test method

Massivholzplatten - Qualität der Verklebung - Prüfverfahren

This Technical Specification (CEN/TS) was approved by CEN on 31 February 2003 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Ref. No. CEN/TS 13354:2003 E

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Foreword

This document (CEN/TS 13354:2003) has been prepared by Technical Committee CEN/TC 112 “Wood-based panels”, the secretariat of which is held by DIN.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This Technical Specification specifies a test method for determining the bonding quality of single-layer and multi-layer solid wood panels by a shear test.

2 Normative references

This Technical Specification incorporates by dated of 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 Technical Specification, only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 314-1, *Plywood — Bonding quality — Part 1: Test methods.*

EN 326-1, *Wood-based panels — Sampling, cutting and inspection — Part 1: Sampling and cutting of test pieces and expression of test results.*

EN 350-2, *Durability of wood and wood-based products — Natural durability of solid wood — Part 2: Guide to natural durability and treatability of selected wood species of importance in Europe.*

EN 13353, *Solid wood panels (SWP) — Requirements.*

ENV 1995-1-1, *Eurocode 5 — Design of timber structures — Part 1-1: General rules and rules for buildings.*

3 Principle

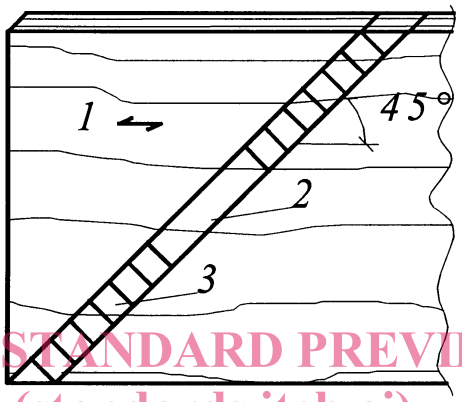
Test pieces of single and multi-layer solid wood panels are subjected to a pretreatment, according to the service class as defined in ENV 1995-1-1, and then strained to failure by a compressive shear force. The shear strength is calculated and the cohesive wood failure of the shear area is determined.

4 Test pieces

4.1 Sampling

From multi layer solid wood panels a series of at least 10 test pieces shall be cut from each panel to be tested. When cutting the sample strips the cutting plan should provide test pieces from both near the edge of the board and from the centre (see figure 1). The test pieces shall be free of defects (e.g. knots).

In case of single layer solid wood panels at least 10 glue lines shall be tested.



Key

1 grain direction of outer layer
2 sample strip
3 test piece

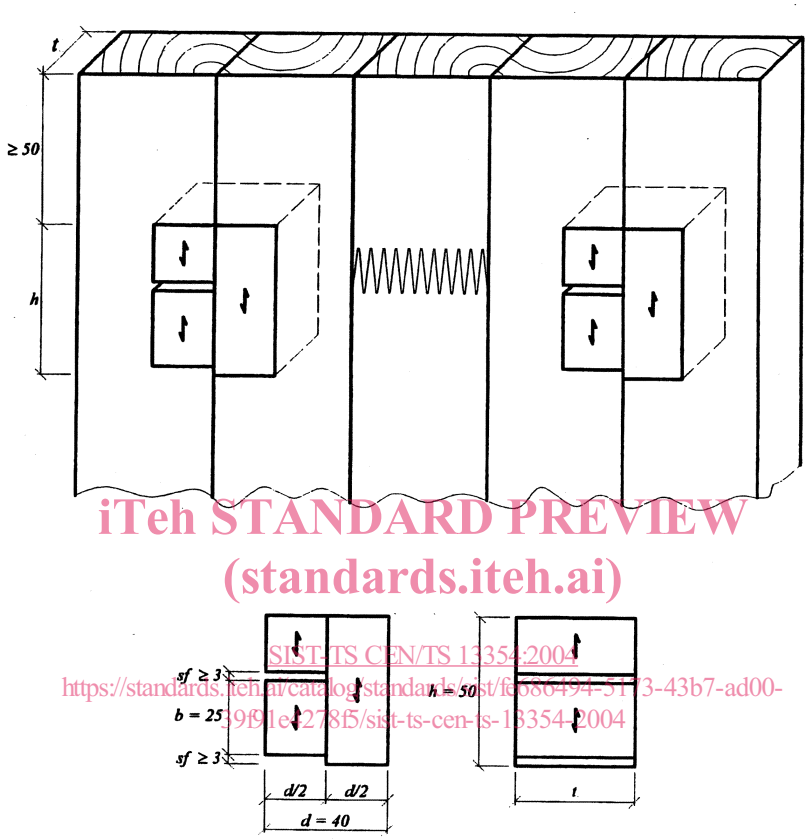
Figure 1 — Example for cutting plan for test pieces of a multi-layer solid wood panel

4.2 Form and dimensions of test pieces

4.2.1 Single-layer solid wood panels

The shape and dimensions of the test pieces shall be as shown in figure 2.

Dimensions in millimetres



Key

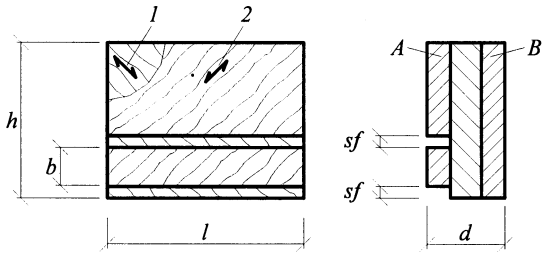
t panel thickness
h height of test piece: 50 mm
b shear width: 25 mm
sf width of saw cuts (≥ 3 mm)
d test piece thickness

Figure 2 — Example for cutting plan and test pieces for single layer solid wood panels (only two of ten necessary pieces shown)

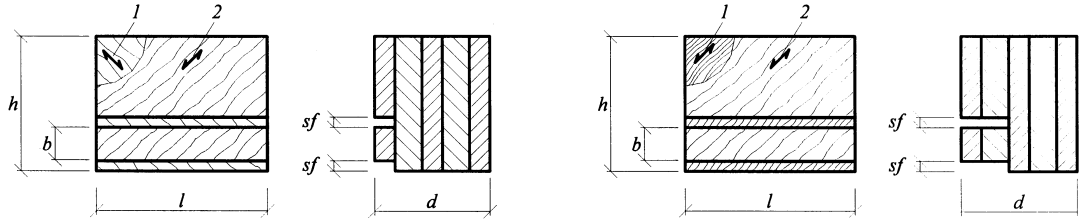
4.2.2 Multi-layer solid wood panels

The form and dimensions of test pieces shall be as shown in figure 3. For solid wood panels with three layers half the test pieces shall have the saw cuts in face A, and the remainder shall have the saw cuts in face B (see figure 3 a). For solid wood panels with more than three layers, at least 2 test pieces for each glue line shall be tested.

The saw cuts shall be parallel, exactly sawn and shall penetrate to the glue line.



a) three layer solid wood panels



b) five layer solid wood panel

Key

1 grain direction of the layer at the bottom of the saw cuts
2 grain direction of outer layer
l shear length and length of test piece: 50 mm
h height of test piece: 40 mm
b shear width: 10 mm
sf width of saw cuts (≥ 3 mm)
d panel thickness = test piece thickness

Figure 3 — Test pieces from multi-layer solid wood panel

5 Apparatus

— Compression testing machine fitted with a shearing tool. Either of the following types is suitable:

a) a machine, capable of maintaining a constant rate of loading; or
b) a machine with a constant cross head speed. The accuracy of the measurement of the ultimate load shall be better than ± 2 %.

— Thermostatically controlled waterbath suitable for immersing test pieces and capable of maintaining a temperature of (20 ± 3) °C.

— Boiling tank enabling the test piece to be immersed in boiling water.

— Ventilated drying oven capable of maintaining a temperature of (60 ± 3) °C at all points.

— Vacuum desiccator capable of reducing the pressure in the desiccator to below 30 kPa absolute.

— Shearing tool as shown in figure 4.