SLOVENSKI STANDARD
SIST EN 13354:2009

01-april-2009

Masivne lesne ploġ e - Kakovost zlepljenosti - 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: **EN 13354:2008**

ICS:

79.060.99 Druge lesne ploġ e Other wood-based panels

SIST EN 13354:2009 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13354

November 2008

ICS 79.060.99

Supersedes CEN/TS 13354:2003

English Version

Solid wood panels (SWP) - Bonding quality - Test method

Bois panneautés (SWP) - Qualité du collage - Méthode d'essai

Massivholzplatten (SWP) - Qualität der Verklebung - Prüfverfahren

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 13354:2008) has been prepared by Technical Committee CEN/TC 112 “Wood-based panels”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 13354:2003.

Compared to CEN/TS 13354:2003 the following changes have been made:

a) deliverability changed from CEN/TS to EN;

b) vacuum impregnation in 6.1 deleted.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard 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

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

3 Principle

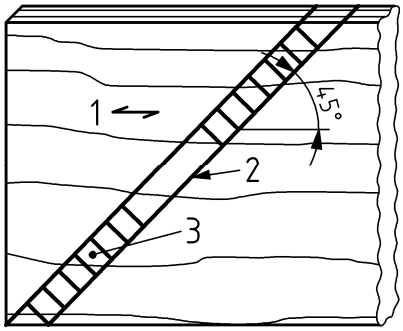
Test pieces of single and multi-layer solid wood panels are subjected to a pre-treatment, according to the service class as defined in EN 1995-1-1, and then strained to failure by a compressive shear force. The shear strength is calculated and the cohesive wood failure of the shear area is determined.

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

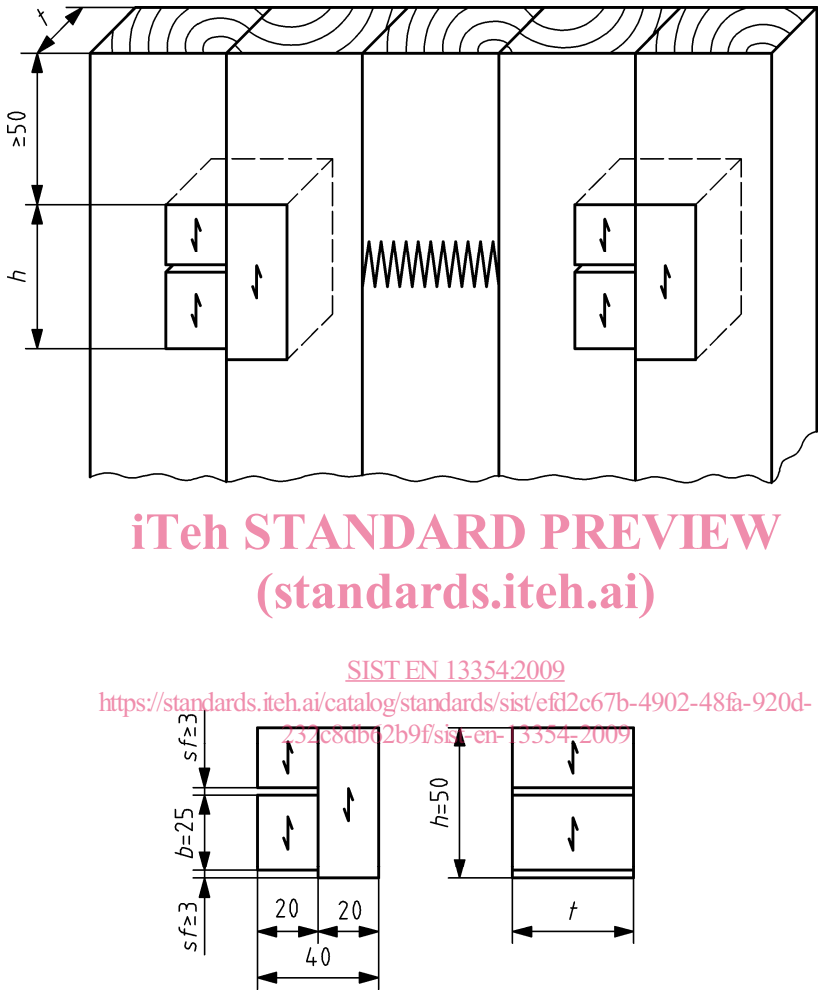
Figure 1 — Example for cutting plan for test pieces of a multi-layer solid wood panel

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



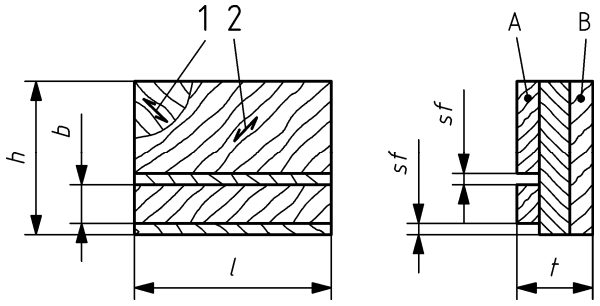
Key
- t panel thickness
- h height of test piece: 50 mm
- b shear width: 25 mm
- sf width of saw cuts (≥ 3 mm)

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

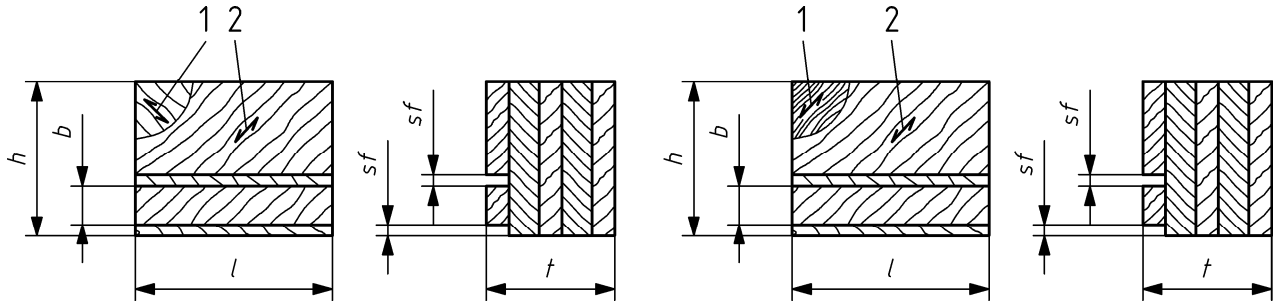
4.2.2 Multi-layer solid wood panels

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)
t 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) machine, capable of maintaining a constant rate of loading; or

b) machine with a constant cross head speed.

The accuracy of the measurement of the ultimate load shall be better than ± 2 %.

— Thermostatically controlled water bath 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.

— Shearing tool as shown in Figure 4.