



SLOVENSKI STANDARD

SIST EN 1087-1:1996

01-marec-1996

Iverne plošče - Ugotavljanje odpornosti proti vlagi - Preskus z vrenjem

Particleboards - Determination of moisture resistance - Part 1: Boil test

Spanplatten - Bestimmung der Feuchtbeständigkeit - Teil 1: Kochprüfung

Panneaux de particules - Détermination de la résistance à l'humidité - Partie 1: Essai à l'eau bouillante

(standards.iteh.ai)

Ta slovenski standard je istoveten z: EN 1087-1:1995

<https://standards.iteh.ai/catalog/standards/sist/d6454ce8-9263-4674-aa5f-a81846d6ce3d/sist-en-1087-1-1996>

ICS:

79.060.20 Vlakenne in iverne plošče Fibre and particle boards

SIST EN 1087-1:1996

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 1087-1:1996](#)

<https://standards.iteh.ai/catalog/standards/sist/d6454ee8-9263-4674-aa5f-a81846d6ce3d/sist-en-1087-1-1996>

EUROPEAN STANDARD

EN 1087-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 1995

ICS 79.060.20

Descriptors: wooden boards, fibreboards, particle boards, moisture proofing, immersion tests, boiling water, tensile strength

English version

**Particleboards - Determination of moisture
resistance - Part 1 : Boil test**

Panneaux de particules - Détermination de la
résistance à l'humidité - Partie 1 : Essai à
l'eau bouillante

Spanplatten - Bestimmung der
Feuchtebeständigkeit - Teil 1 : Kochprüfung

(standards.iteh.ai)

SIST EN 1087-1:1996

<https://standards.iteh.ai/catalog/standards/sist/d6454ce8-9263-4674-aa5f-a81846d6ce3d/sist-en-1087-1-1996>

This European Standard was approved by CEN on 1994-10-31. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

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

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

© 1995

All rights of reproduction and communication in any form and by any means reserved in all countries to CEN and its members.

Ref. No. EN 1087-1:1995 E

Contents

	Page
Foreword	2
1 Scope	3
2 Normative references	3
3 Principle	4
4 Apparatus	4
5 Test pieces	5
6 Procedure	6
7 Expression of results	6
8 Test report	6

Foreword

This European Standard was prepared by the Technical Committee CEN/TC 112 "Woodbased panels" of which the secretariat 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 August 1995, and conflicting national standards shall be withdrawn at the latest by August 1995.

According to the CEN/CENELEC Internal Regulations, 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, United Kingdom.

1 Scope

This European Standard specifies a method of test for evaluating the bond quality of particleboards, intended for use in humid conditions according to option 2 of EN 312-5 and EN 312-7.

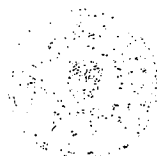
2 Normative references

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 312-5 Particleboards — Specifications — Part 5: Requirements for load-bearing boards for use in humid conditions¹⁾
- EN 312-7 Particleboards — Specifications — Part 7: Requirements for heavy duty load-bearing boards for use in humid conditions¹⁾
- EN 314-2 Plywood — Bonding quality — Part 2: Requirements
- EN 319 Particleboards and fibreboards — Determination of tensile strength perpendicular to the plane of the board
- EN 325 Wood-based panels — Determination of dimensions of test pieces
- EN 326-1 Wood-based panels — Sampling, cutting and inspection — Part 1: Sampling and cutting of test pieces and expression of test results

STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 1087-1:1996
<https://standards.iteh.ai/catalog/standards/sist/d6454ce8-9263-4674-aa5f-a81846d6ce3d/sist-en-1087-1-1996>

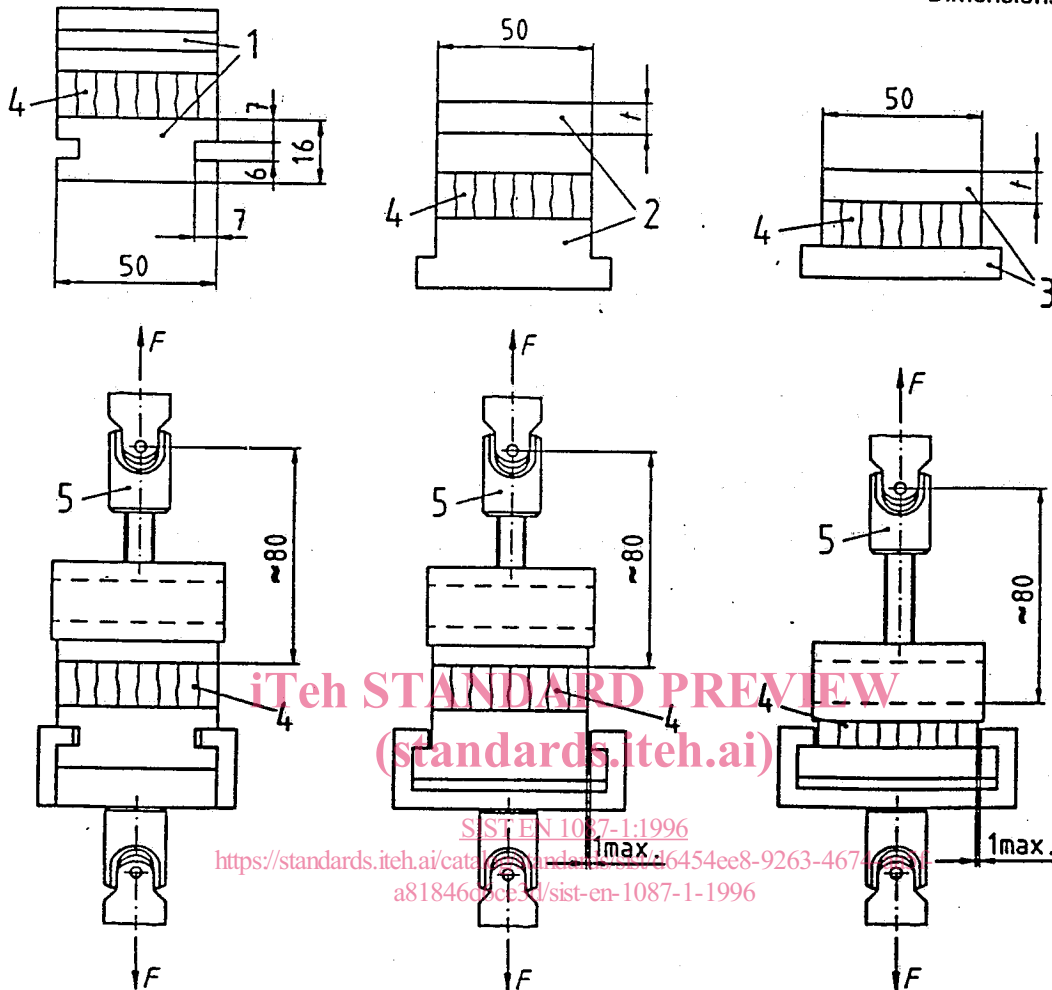
¹⁾ At present at the draft stage



3 Principle

Tensile strength, perpendicular to to plane of the board (internal bond), is determined using test pieces which have been immersed in boiling water.

Dimensions in millimetres



- 1 Metal testing block
- 2 Testing block (metal or plywood)
- 3 Plywood testing block (not suitable for thin boards)
- 4 Test piece
- 5 Self-aligning ball-and-socket-joint
 $t \geq 15 \text{ mm}$

Figure 1: Examples of apparatus for testing tensile strength perpendicular to the plane of the board

4 Apparatus

4.1 Sliding caliper

A sliding caliper as specified in EN 325.

4.2 Water bath

Temperature controlled laboratory water bath, capable of raising the contents to boiling point at a specified rate (see 6.1) and maintaining boiling for not less than 2 h.

4.3 Testing machine

As described in EN 319.

4.4 Testing blocks

Blocks of either metal or plywood to which the test pieces are glued (see figure 1). Plywood blocks shall be made from beech plywood conforming to bonding class 3 (exterior) of EN 314-2. They shall be not less than 15 mm in thickness and composed of not less than nine plies. Plywood of equivalent bending stiffness made from other species may be used. Solid wooden blocks shall not be used.

When thin boards (< 8 mm thickness) or high density boards (> 800 kg/m³) are tested, metal blocks shall be used.

5 Test pieces

5.1 Sampling

Sampling and cutting of at least eight test pieces per panel shall be carried out according to the principles of EN 326-1.

iteh STANDARD PREVIEW
(standards.iteh.ai)

5.2 Dimensions

As described in EN 319. <https://standards.iteh.ai/catalog/standards/sist/d6454ee8-9263-4674-aa5f-a81846d6ce3d/sist-en-1087-1-1996>

SIST EN 1087-1:1996

5.3 Conditioning

Both the test pieces and the plywood testing blocks shall be separately conditioned to constant mass in a standard climate of (20 ± 2) °C and relative humidity of (65 ± 5) %. Constant mass is considered to have been 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.

5.4 Measurement of dimensions

After conditioning, measure the length and width of each test piece according to EN 325.

5.5 Bonding of the test pieces to the testing blocks

Bond each test piece to testing blocks, using a suitable adhesive. The upper and lower blocks shall be orientated at 90° as shown in figure 1. Excess glue squeezed out from the glueline shall be removed before testing.

When gluing, additional stresses affecting the test piece, e.g. caused by the moisture contained in the adhesive, and/or any rise in temperature, shall be avoided as far as possible.

NOTE 1: The following combinations have proved suitable:

- epoxy resins with metal blocks;
- epoxy resins, phenol-resorcinol resins and two component polyurethane resins with hardwood plywood blocks.

NOTE 2: The cleaning of metal blocks for re-use can be carried out as follows:

After roughly removing the remains of the broken test pieces, the metal blocks are immersed in acetone for 12 h to 24 h. Thereafter, the remaining glue can be easily removed. Warning: Acetone is highly flammable.

Immersion in water shall only be carried out after the glue has had sufficient time to cure (so that rupture does not occur in the glueline) and after the test pieces have had sufficient time to regain an equal distribution of moisture. During this time, the glued assembly shall be stored under controlled conditions of $(65 \pm 5) \%$ relative humidity and a temperature of $(20 \pm 2) ^\circ\text{C}$.

NOTE 3: Experience has shown that equilibrium conditions are reached in approximately 24 h if epoxy resins are used and approximately 72 h if phenol-resorcinol resins are used.

6 Procedure

6.1 Boil treatment

Place the test pieces, glued to their testing blocks in the water bath (4.2) and cover them with clean water, having a temperature of $(20 \pm 5) ^\circ\text{C}$ and a pH of $7 \pm 0,5$. They shall be separated from each other, and from the sides and bottom of the waterbath by at least 15 mm, to allow free circulation of the water. This distance shall be maintained throughout the treatment.

Renew the water at the start of each test.

Heat the water to boiling point ($\approx 100 ^\circ\text{C}$) over a period of (90 ± 10) min. Continue boiling for (120 ± 5) min. Remove and cool the test pieces.

6.2 Cooling of test pieces before testing

Place and keep the test pieces in water at $(20 \pm 5) ^\circ\text{C}$, immediately after removal from the boiling water, and leave them immersed for between 1 h and 2 h. Mop off excess water and test them in the wet condition.

6.3 Application of the load and measurement of failing load

As described in EN 319.

7 Expression of results

As described in EN 319.

8 Test report

As described in EN 326-1.