



SLOVENSKI STANDARD

SIST EN 13963:2014

01-september-2014

Nadomešča:

SIST EN 13963:2005

SIST EN 13963:2005/AC:2006

Tesnilni materiali za mavčne plošče - Definicije, zahteve in preskusne metode

Jointing materials for gypsum boards - Definitions, requirements and test methods

Materialien für das Verspachteln von Gipsplatten-Fugen - Begriffe, Anforderungen und Prüfverfahren

Matériaux de jointoiement pour plaques de plâtre - Définitions, exigences et méthodes d'essai

<https://standards.iteh.ai/catalog/standards/sist/12350737-7839-45d0-989b-9d74e7f8fc24/sist-en-13963-2014>

Ta slovenski standard je istoveten z: EN 13963:2014

ICS:

91.100.10 Cement. Mavec. Apno. Malta Cement. Gypsum. Lime.
Mortar

SIST EN 13963:2014

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13963:2014

<https://standards.iteh.ai/catalog/standards/sist/12350737-7839-45d0-989b-9d74e7f8fc24/sist-en-13963-2014>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13963

July 2014

ICS 91.100.10

Supersedes EN 13963:2005

English Version

**Jointing materials for gypsum boards - Definitions, requirements
and test methods**

Matériaux de jointoiement pour plaques de plâtre -
Définitions, spécifications et méthodes d'essai

Materialien für das Verspachteln von Gipsplattenfugen -
Begriffe, Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 22 May 2014.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

SIST EN 13963:2014

<https://standards.iteh.ai/catalog/standards/sist/12350737-7839-45d0-989b-9d74e7f8fc24/sist-en-13963-2014>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	5
1 Scope	6
2 Normative references	6
3 Terms and definitions, symbols, abbreviations and classification	6
3.1 Terms and definitions	6
3.2 Symbols and abbreviations	7
3.3 Classification of compounds.....	7
4 Requirements	8
4.1 Reaction to fire.....	8
4.2 Flexural strength (expressed as breaking load).....	8
4.3 Dangerous substances	8
4.4 Setting time	9
4.5 Cracking.....	9
4.6 Particle size distribution	9
4.7 Adhesion/cohesion.....	9
4.8 Dimensional stability of paper tape	9
4.9 Tensile strength of paper tape	9
4.10 Additional requirements for jointing compounds Types H1, H2, H3 (with reduced water absorption)	9
5 Test methods.....	10
5.1 Sampling	10
5.2 Determination of setting time	10
5.2.1 Principle	10
5.2.2 Apparatus and materials	10
5.2.3 Procedure	10
5.2.4 Expression of results	11
5.3 Determination of cracking resistance.....	11
5.3.1 Principle	11
5.3.2 Apparatus and materials	11
5.3.3 Procedure	12
5.3.4 Expression of results	13
5.4 Determination particle size distribution	13
5.4.1 Principle	13
5.4.2 Apparatus	13
5.4.3 Procedure	13
5.4.4 Expression of results	13
5.5 Determination of adhesion/cohesion.....	13
5.5.1 Principle	13
5.5.2 Apparatus	14
5.5.3 Procedure	14
5.5.4 Expression of results	14
5.6 Determination of dimensional stability of paper jointing tape.....	16
5.6.1 Principle	16
5.6.2 Apparatus	16
5.6.3 Procedure	16
5.6.4 Expression of results	16
5.7 Determination of tensile strength of paper jointing tape	17

5.7.1	Principle.....	17
5.7.2	Apparatus	17
5.7.3	Procedure	17
5.7.4	Expression of results	17
5.8	Determination of flexural strength (breaking load).....	18
5.8.1	Determination of breaking load by tensile method.....	18
5.8.2	Determination of breaking load by flexural method	19
5.9	Determination of water absorption	20
5.9.1	Surface water absorption	20
5.9.2	Total water absorption	21
6	Assessment and verification of constancy of performance – AVCP	22
6.1	General	22
6.2	Type testing	22
6.2.1	General	22
6.2.2	Determination of the product type.....	22
6.2.3	Further type testing	22
6.3	Factory production control (FPC).....	23
6.3.1	General	23
6.3.2	Personnel	23
6.3.3	Equipment	23
6.3.4	Raw materials and components	23
6.3.5	Product testing and evaluation.....	23
6.3.6	Traceability and marking	24
6.3.7	Non-complying products.....	24
6.3.8	Corrective action	24
6.3.9	Other test methods.....	24
7	Designation of jointing materials.....	24
8	Marking, labelling and packaging.....	25
Annex A (informative)	Sampling procedure for testing	26
A.1	General	26
A.2	Sampling procedure	26
A.2.1	General	26
A.2.2	Random sampling	26
A.2.3	Representative sampling	26
A.2.3.1	General	26
A.2.3.2	Sampling from a stack	26
A.2.3.3	Sampling from a consignment formed of banded or wrapped packs	27
Annex B (normative)	Classes for reaction to fire performance for air drying jointing compounds	28
Annex C (normative)	Mounting and fixing in the test according to EN 13823 (SBI test)	29
C.1	Mounting and fixing of the jointing materials.....	29
Annex ZA (informative)	Clauses of this European Standard addressing the provisions of the EU Construction Products Regulation	31
ZA.1	Scope and relevant characteristics	31
ZA.2	Procedure for AVCP of jointing materials for gypsum boards.....	31
ZA.2.1	Systems of AVCP	31
ZA.2.2	Declaration of performance (DoP)	34

EN 13963:2014 (E)

ZA.2.2.1	General	34
ZA.2.2.2	Content.....	34
ZA.2.2.3	Example of DoP	36
ZA.3	CE marking and labelling	37
	Bibliography	40

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13963:2014](https://standards.iteh.ai/catalog/standards/sist/12350737-7839-45d0-989b-9d74e7f8fc24/sist-en-13963-2014)

<https://standards.iteh.ai/catalog/standards/sist/12350737-7839-45d0-989b-9d74e7f8fc24/sist-en-13963-2014>

Foreword

This document (EN 13963:2014) has been prepared by Technical Committee CEN/TC 241 "Gypsum and gypsum based products", the secretariat of which is held by AFNOR.

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 January 2015 and conflicting national standards shall be withdrawn at the latest by April 2016.

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 EN 13963:2005.

The main technical changes that have been made in this new edition of EN 13963 are the following:

- a) normative references have been updated;
- b) Commission Decision 2010/83/EU on classes of reaction to fire performance for air drying jointing compounds included in Annex B;
- c) new clause symbols, abbreviations and classification has been introduced;
- d) Annex ZA and Clause 6 have been revised to be in line with the Construction Products Regulation (CPR)
- e) document has been editorially revised.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of Regulation (EU) No. 305/2011.

For relationship with Regulation (EU) No. 305/2011, see informative Annex ZA, which is an integral part of this document.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 13963:2014 (E)

1 Scope

The European Standard specifies the requirements for jointing compounds and paper tapes used to fill and finish the joints formed at the edges and ends of gypsum plasterboards complying with EN 520, products from secondary processing complying with EN 14190, prefabricated gypsum plasterboard panels with a cellular paperboard core complying with EN 13915, thermal/acoustic composite panels complying with EN 13950, preformed plasterboard cornices complying with EN 14209 and gypsum boards with fibrous reinforcement complying with EN 15283-1 and EN 15283-2.

This European Standard does not cover tapes which are made from materials other than paper.

This European Standard covers the following characteristics: reaction to fire and flexural strength, to be measured according to the relevant test methods in this document.

2 Normative references

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

EN 196-3, *Methods of testing cement — Part 3: Determination of setting time and soundness*

EN 520, *Gypsum plasterboards — Definitions, requirements and test methods*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 535, *Paper and board — Determination of water absorptiveness — Cobb method (ISO 535)*

EN ISO 1924-2, *Paper and board — Determination of tensile properties — Part 2: Constant rate of elongation method (20 mm/min) (ISO 1924-2)*

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

3 Terms and definitions, symbols, abbreviations and classification

3.1 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

3.1.1

jointing system

combination of jointing compound or compounds with or without jointing tape to form a seamless joint between two gypsum boards

3.1.2

tapeless jointing compound

compound for use without tape for jointing gypsum boards with suitable edge profiles

3.1.3**jointing tape**

strip of paper reinforcing material designed to be embedded in the bedding compound to reinforce the joints

Note 1 to entry Typically tapes are approximately 50 mm wide.

3.1.4**bedding compound**

jointing compound for application directly to the gypsum board and in which the jointing tape is embedded

3.1.5**finishing compound**

jointing compound for application over bedding compound in one or more applications and which forms the final finished surface of the joint

3.1.6**dual-purpose compound**

jointing compound suitable for both bedding and finishing

3.1.7**ready-mixed compound**

compound supplied so that it can be used without the site addition of water or other materials

3.1.8**short setting**

compound with a setting time greater than 20 min but less than 60 min

3.1.9**normal setting**

compound with a setting time of 60 min or greater but less than 180 min

3.1.10**long setting**

compound with a setting time of 180 min or greater

3.1.11**hydrophobised compound**

joint compound with reduced water absorption rate

3.2 Symbols and abbreviations

Table 1 — Symbols and abbreviations

Requirement	Sub-clause	Symbol or abbreviation
Reaction to fire	4.1	R2F
Flexural strength	4.2	F
Dangerous substances	4.3	DS
Tensile strength	4.9	σ
See manufacturer's literature		www.manufacturers_internet_address.com

3.3 Classification of compounds

Compounds specified in this document shall be classified into eight types according to their description and method of hardening as shown in Table 2.

EN 13963:2014 (E)

Compound types 1A, 2A, 3A and 4A harden only by air drying. They are known as air drying compounds.

Compound types 1B, 2B, 3B and 4B harden by chemical reaction and air drying. They are known as setting compounds.

Table 2 — Types of jointing compounds

Description	Principle mechanism of hardening	
	Air drying (powder or ready-mix)	Setting (powder only)
Bedding compound	1A	1B
Finishing compound	2A	2B
Dual-purpose compound	3A	3B
Tapeless jointing compound	4A	4B
NOTE See Annex B for guidance for use.		

4 Requirements

4.1 Reaction to fire

Jointing compound materials for gypsum boards are classified in Euroclass A1 (no contribution to fire) without testing when they contain less than 1 % by weight or by volume (whichever is the more onerous) of organic materials¹⁾.

If the jointing compound materials contain 1 % or more by weight or by volume (whichever is the more onerous) of organic material, they shall be tested and then classified in accordance with EN 13501-1.

Jointing materials tested according to EN 13823 (SBI test) shall be mounted and fixed in accordance with Annex C or, when the manufacturer wishes to claim performance for a specific intended use, the mounting and fixing shall be representative of that intended use.

Where subject to regulatory requirements, the air drying jointing compounds of types 1A, 2A and 3A and paper jointing tape shall either be classified without further testing according to the provisions of Annex B or it shall be tested and classified according to EN 13501-1.

4.2 Flexural strength (expressed as breaking load)

Breaking load shall be measured according to test method 5.8.2 for types 1, 2 and 3 and according to test method 5.8.1 for types 4A and 4B (tapeless jointing compound).

4.3 Dangerous substances

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets.

In the absence of European harmonized test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

¹⁾ See Commission Decision 96/603/EC as amended.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction website on EUROPA accessed through:

<http://ec.europa.eu/enterprise/construction/cpd-ds/>

4.4 Setting time

When compound types 1B, 2B, 3B and 4B are tested by the method given in 5.2, the setting time shall be not less than 20 min but less than 60 min for a short setting compound. It shall not be less than 60 min but less than 180 min for a normal setting compound and not less than 180 min for a long setting compound.

4.5 Cracking

When compounds are tested by the method given in 5.3, there shall be no cracks in the zone 50 mm from the thin end of the wedge for type 2A, 2B, 3A and 3B compounds and no cracks in the 150 mm zone from the thin end of the wedge for type 4A and 4B compounds

4.6 Particle size distribution

When compound types 2A, 2B 3A, 3B, 4A or 4B are tested by the method given in 5.4, the mass retained on the 200 µm sieve shall be not greater than 1 %. There shall be nothing retained on the 315 µm sieve.

4.7 Adhesion/cohesion

When tested by the method given in 5.5, the adhesion/cohesion of the compounds shall exceed 0,25 N/mm².

4.8 Dimensional stability of paper tape

When tested by the method given in 5.6 the dimensional change in the length direction shall be less than 0,4 % and in the width direction shall be less than 2,5 %.

4.9 Tensile strength of paper tape

When tested by the method given in 5.7, the minimum tensile strength shall be 4,0 N per mm of tape width.

4.10 Additional requirements for jointing compounds Types H1, H2, H3 (with reduced water absorption)

The surface water absorption of the jointing compound determined by the method described in 5.9.1 for the face of the jointing compound shall not be greater than the values shown in Table 3.

The total water absorption of jointing compounds, determined by the method described in 5.9.2, shall not be greater than the values shown in Table 3.

Table 3 — Water absorption classes

Water absorption classes	Surface water absorption g/m ²	Total water absorption %
H1	180	≤ 5
H2	220	≤ 10
H3	300	≤ 25

EN 13963:2014 (E)

5 Test methods

5.1 Sampling

A minimum of three samples shall be subjected to the tests given in this section. Only the tests relevant to the class of compound as defined in 3.3 need to be done.

5.2 Determination of setting time

5.2.1 Principle

Jointing compound shall be mixed with tap water in the proportion recommended by the manufacturer. The setting time shall be determined using a Vicat apparatus fitted with a penetration cone in an environment maintained at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ of relative humidity.

5.2.2 Apparatus and materials

- a) Vicat apparatus, as described in EN 196-3 with a cone of stainless steel or brass, approximately 35 mm long with a smooth polished surface and an angle of $30^\circ \pm 1$. The cone is attached to the moveable rod of the Vicat apparatus in place of the needles;
- b) waxed paper or plastic cups, at least 40 mm deep;
- c) balance, to weigh 500 g with an accuracy of 0,1 %;
- d) measuring cylinder;
- e) a beaker of 250 ml to 400 ml capacity for use as a mixing vessel;
- f) palette knife with a normal 100 mm x 20 mm flexible stainless steel blade;
- g) stop clock.

5.2.3 Procedure

Bring the jointing compound to a temperature of $(23 \pm 2) ^\circ\text{C}$ in a closed container before testing.

Carry out the complete determination on two samples. The first sample is to determine the approximate setting time. The effective determination is carried out on the second sample.

Place in the mixing vessel (beaker) the amount of tap water at $(23 \pm 2) ^\circ\text{C}$, which will give an adequate volume of mix to enable the waxed paper or plastic cup to be struck off level without difficulty. Using the mix proportions recommended by the manufacturer, weigh out the appropriate amount of the compound.

Start the stop clock and over 10 s add the compound to the water. Allow to settle for 20 s, then mix for 30 s at a rate of 2 to 3 strokes per second in such a manner that the entire contents of the mixing vessel are thoroughly mixed.

If required by the manufacturer, re-mixing should be carried out at the stated time using the technique specified above.

Transfer the mixed compound to two paper or plastic cups, strike off level and stand on a surface which is free from vibration and out of direct sunlight or draughts. Test from time to time with the Vicat apparatus, by placing the tip of the cone on the surface of the mix and allowing the moveable rod to fall freely. The distance between the points of impact of the cone shall be at least 12 mm from previous impacts and from the walls of the cup.

After each penetration wipe clean the cone and re-position on the surface. As the set approaches continue the test on the second sample, avoiding over frequent penetrations since these can affect the set. Determine and record the elapsed time when the cone fails to penetrate 10 mm into the mix. A graph of penetration versus time is useful for interpolation.

5.2.4 Expression of results

Report to the nearest 5 min the setting time of the compound as the elapsed time from the start of sprinkling the compound into the mixing water until the cone fails to penetrate 10 mm into the mix.

NOTE Scrupulous cleanliness of the apparatus used for mixing and careful adherence to the time and energy restrictions noted in the mixing procedures are essential if repeatable results are to be obtained.

Failure to eliminate unsoaked agglomerations of compound may lead to the early formation of hard lumps in the unset mass and difficulty in deciding when the set has occurred.

5.3 Determination of cracking resistance

5.3.1 Principle

A wedge of the compound shall be applied to the surface for direct decoration of a piece of gypsum board, dried and examined for cracking.

For type 4 compounds a thicker wedge is necessary to simulate the conditions of use as this material is used without tapes in much thicker layers (see Figure 2).

5.3.2 Apparatus and materials

a) For testing type 1, 2 or 3 compounds (see Figure 1):

- 1) Metal rod of 2 mm diameter and 150 mm minimum length;
- 2) broad knife, nominally 100 mm wide;
- 3) a piece of gypsum board complying with the requirements of type A of EN 520, 150 mm x 150 mm conditioned at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ of relative humidity.

Dimensions in millimetres

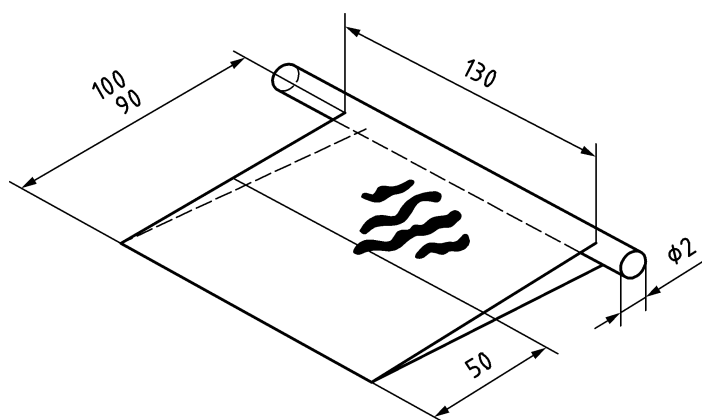


Figure 1 — Wedge showing cracking

b) For testing type 4 compounds (see Figure 2):