



SLOVENSKI STANDARD

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Tesnilni materiali za mavl ne pločle - Definicije, zahteve in preskusne metode

Jointing materials for gypsum plasterboards - 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

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English version

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

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This European Standard was approved by CEN on 14 February 2005.

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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 Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13963:2005) 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of an identical text or by endorsement, at the latest by November 2005, and conflicting national standards shall be withdrawn at the latest by February 2007.

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 EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

No existing European Standard is superseded.

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

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Introduction

Diagrams 1 & 2 below show the relationship between this document and the package of standards prepared to support the families of gypsum products and ancillary products.

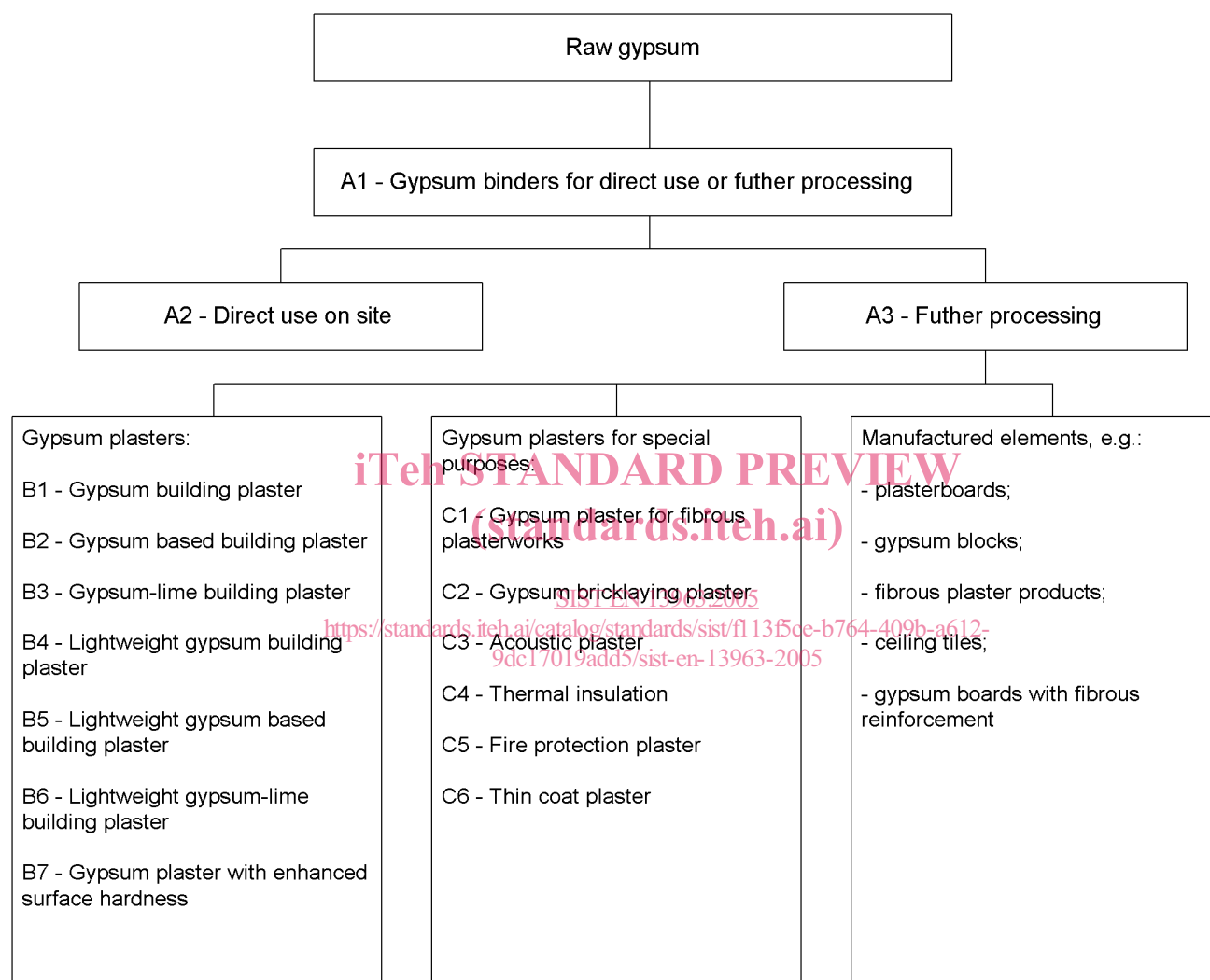


Diagram 1 – General diagram showing families of gypsum products

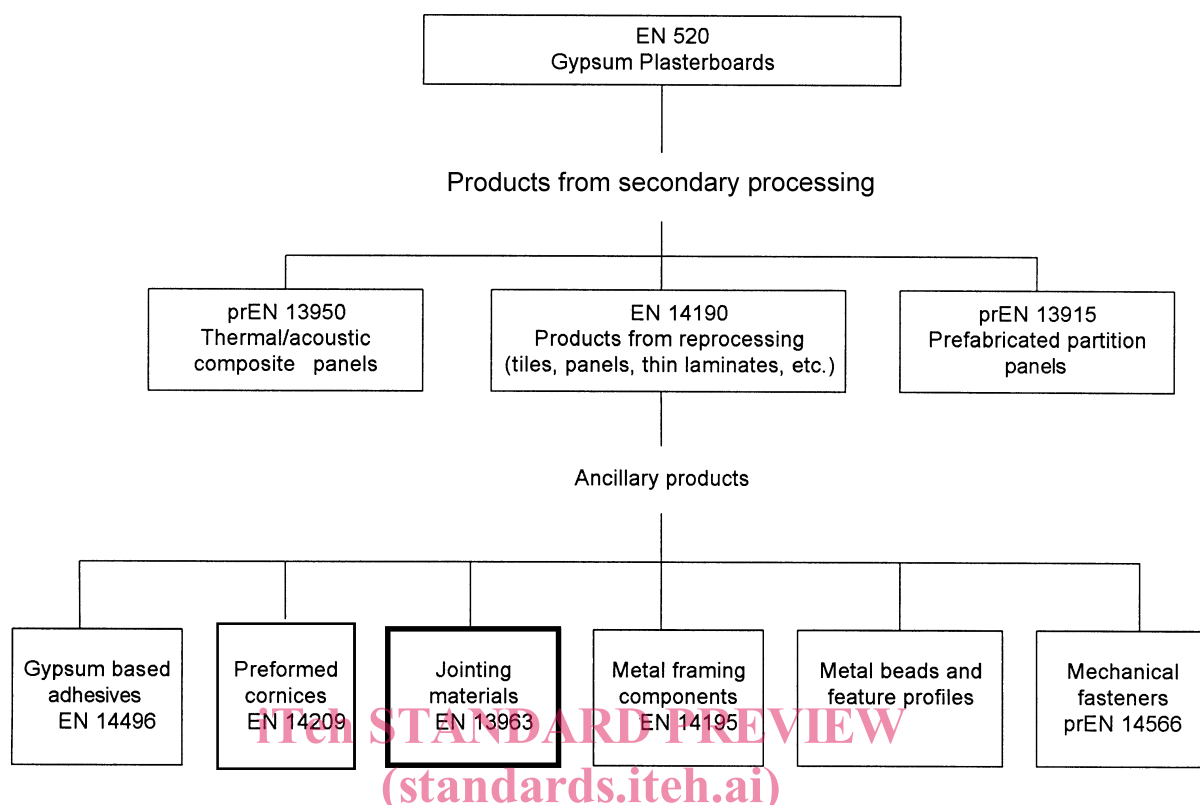


Diagram 2 – Families of ancillary products

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The jointing compounds specified in this document are used to fill and finish the joints formed at the edges and ends of gypsum plasterboard complying with EN 520, products from secondary processing of this board and gypsum boards with fibrous reinforcement.

1 Scope

The document specifies the requirements of jointing compounds and paper tapes for use with gypsum plasterboard complying with EN 520, products from secondary processing of this board and gypsum boards with fibrous reinforcement.

This document covers materials applied by hand and by machine. Compounds based on gypsum and other materials are covered. Also specified are the paper tapes which are used in suitable jointing systems.

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

It also covers additional technical characteristics that are of importance for the use and acceptance of the product by the Construction Industry.

It defines the reference test methods for technical specifications.

It provides for the evaluation of conformity of the product to this document.

Annex A specifies the sampling procedure for testing.

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

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. [SIST EN 13963:2005](https://standards.iteh.ai/catalog/standards/sist/fl13f5ce-b764-409b-a612-93e7840e4154/en-13963-2005)

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 1924-2, *Paper and board - Determination of tensile properties - Part 2: Constant rate of elongation method (ISO 1924-2:1994)*

EN ISO 9001:2000, *Quality management systems - Requirements (ISO 9001:2000)*.

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

3 Terms and definitions

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

3.1

bedding compound

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

3.2**finishing compound**

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

3.3**dual-purpose compound**

jointing compound suitable for both bedding and finishing

3.4**tapeless jointing compound**

compound for use without tape for jointing plasterboard with suitable edge profiles

3.5**jointing tape**

strip of paper reinforcing material designed to be embedded in the bedding compound to reinforce the joints. Typically tapes are approximately 50 mm wide

3.6**jointing system**

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

3.7**ready-mixed (compound)**

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

3.8**short setting**

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

3.9**normal setting**

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

3.10**long setting**

compound with a setting time of 180 min or greater

3.11 Classification of compounds

Compounds specified in this document shall be classified into eight types according to their description and method of hardening all as shown in Table 1.

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 1 - 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 materials for gypsum plasterboards 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 products 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 producer wishes to claim performance for a specific intended use, the mounting and fixing shall be representative of that intended use.

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 Regulated substances

Materials used in products shall not release any regulated substances in excess of the maximum permitted levels specified in a relevant European Standard for the material or permitted in the national regulations of the member state of destination.

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 Freedom from 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

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

4.6 Freedom from coarse particles

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 compound shall exceed $0,25 \cdot 10^{-6} \text{ N/mm}^2$.

4.8 Dimensional stability of paper tape

When tested by the method given in 5.6, the dimensional change in the length and width direction shall not be greater than 0,4 % and 2,5 % respectively.

4.9 Breaking strength of paper tape

When tested by the method given in 4.7, the breaking strength shall be not less than 4,0 N per mm of tape width.

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 3.11 need to be done.

5.2 Determination of setting time

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5.2.1 Principle

Jointing compound shall be mixed with tap water in the proportion recommended by the producer. 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

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 $30^\circ \pm 1^\circ$. The cone is attached to the moveable rod of the Vicat apparatus in place of the needles;

waxed paper or plastic cups, at least 40 mm deep;

balance, to weigh 500 g with an accuracy of 0,1 %;

measuring cylinder;

a beaker of 250 ml to 400 ml capacity for use as a mixing vessel;

palette knife with a normal 100 mm x 20 mm flexible stainless steel blade;

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 producer, 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.

NOTE If required by the producer, 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 effect 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

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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 freedom from cracking

5.3.1 Principle

A wedge of the compound shall be applied to the surface for direct decoration of a piece of gypsum plasterboard, 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

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

- a) Metal rod of 2 mm diameter and 150 mm minimum length;
- b) broad knife, nominally 100 mm wide;