



SLOVENSKI STANDARD

SIST EN 14496:2006

01-april-2006

Glavni naslov: Adhezivi na osnovi gipsa za toplotno/akustično izolacijske kompozitne ploče in gipsne ploče - Definicije, zahtevi in metode preskušanja

Gypsum based adhesives for thermal/acoustic insulation composite panels and plasterboards - Definitions, requirements and test methods

Kleber auf Gipsbasis für Verbundplatten zur Wärme- und Schalldämmung und Gipsplatten - Begriffe, Anforderungen und Prüfverfahren

Adhésifs à base de plâtre pour complexes d'isolation thermique/acoustique en plaques de plâtre et isolant - Définitions, spécifications et méthodes d'essai

Ta slovenski standard je istoveten z: EN 14496:2005

ICS:

| | | |
|-----------|---|--|
| 83.180 | Lepila | Adhesives |
| 91.100.10 | Cement. Mavec. Apno. Malta | Cement. Gypsum. Lime. Mortar |
| 91.100.60 | Toplotno in akustično izolacijski materiali | Thermal and sound insulating materials |

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EUROPEAN STANDARD

EN 14496

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2005

ICS 91.100.10; 91.120.10; 91.120.20

English Version

Gypsum based adhesives for thermal/acoustic insulation composite panels and plasterboards - Definitions, requirements and test methods

Adhésifs à base de plâtre pour complexes d'isolation thermique/acoustique en plaques de plâtre et isolant - Définitions, spécifications et méthodes d'essai

Kleber auf Gipsbasis für Verbundplatten zur Wärme- und Schalldämmung und Gipsplatten - Begriffe, Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 16 September 2004.

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.

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
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

| | page |
|---|------|
| Foreword..... | 4 |
| Introduction..... | 5 |
| 1 Scope | 7 |
| 2 Normative references | 7 |
| 3 Requirements | 7 |
| 3.1 Fire behaviour | 7 |
| 3.1.1 Reaction to fire..... | 7 |
| 3.1.2 Fire resistance..... | 7 |
| 3.2 Bond strength | 8 |
| 3.3 Dangerous substances | 8 |
| 3.4 Calcium sulfate content | 8 |
| 3.5 End of utilisation time | 8 |
| 4 Test methods..... | 8 |
| 4.1 General..... | 8 |
| 4.2 Determination of the calcium sulfate content..... | 8 |
| 4.3 Determination of the water/adhesive ratio..... | 8 |
| 4.4 Preparation of the paste for the tests | 8 |
| 4.5 Determination of the end of utilisation time | 8 |
| 4.5.1 Principle..... | 8 |
| 4.5.2 Apparatus | 9 |
| 4.5.3 Procedure | 9 |
| 4.5.4 Expression of results | 9 |
| 4.6 Determination of the bond strength..... | 9 |
| 4.6.1 Principle..... | 9 |
| 4.6.2 Apparatus | 10 |
| 4.6.3 Procedure | 12 |
| 4.6.4 Expressions of results | 13 |
| 5 Evaluation of conformity..... | 13 |
| 5.1 General..... | 13 |
| 5.2 Type testing..... | 13 |
| 5.2.1 General..... | 13 |
| 5.2.2 Initial type testing | 13 |
| 5.2.3 Further type testing | 14 |
| 5.3 Factory production control..... | 14 |
| 5.3.1 General..... | 14 |
| 5.3.2 Personnel..... | 14 |
| 5.3.3 Equipment | 14 |
| 5.3.4 Raw materials and components..... | 14 |
| 5.3.5 Product testing and evaluation | 15 |
| 5.3.6 Traceability and marking | 15 |
| 5.3.7 Non-conforming products | 15 |
| 5.3.8 Corrective action..... | 15 |
| 5.3.9 Other test methods | 15 |
| 6 Designation | 15 |
| 7 Marking, labelling and packaging | 15 |
| Annex A (informative) Sampling procedure for testing..... | 17 |
| A.1 General | 17 |
| A.2 Sampling procedure..... | 17 |

| | | |
|---|---|-----------|
| A.2.1 | General..... | 17 |
| A.2.2 | Random sampling..... | 17 |
| A.2.3 | Representative sampling | 17 |
| Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU construction Products Directive | | |
| | | 19 |
| ZA.1 | Scope and relevant characteristics | 19 |
| ZA.2 | Attestation and declaration of conformity of products | 20 |
| ZA.3 | CE marking and labelling..... | 22 |
| Bibliography | | 24 |

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[SIST EN 14496:2006](https://standards.iteh.ai/catalog/standards/sist/22a4612b-8990-464e-bc80-00b634383860/sist-en-14496-2006)

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Foreword

This European Standard (EN 14496:2005) 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 May 2006, and conflicting national standards shall be withdrawn at the latest by August 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.

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 and 2 show the relationship between this standard and the package of standards prepared to support the family of gypsum and ancillary products.

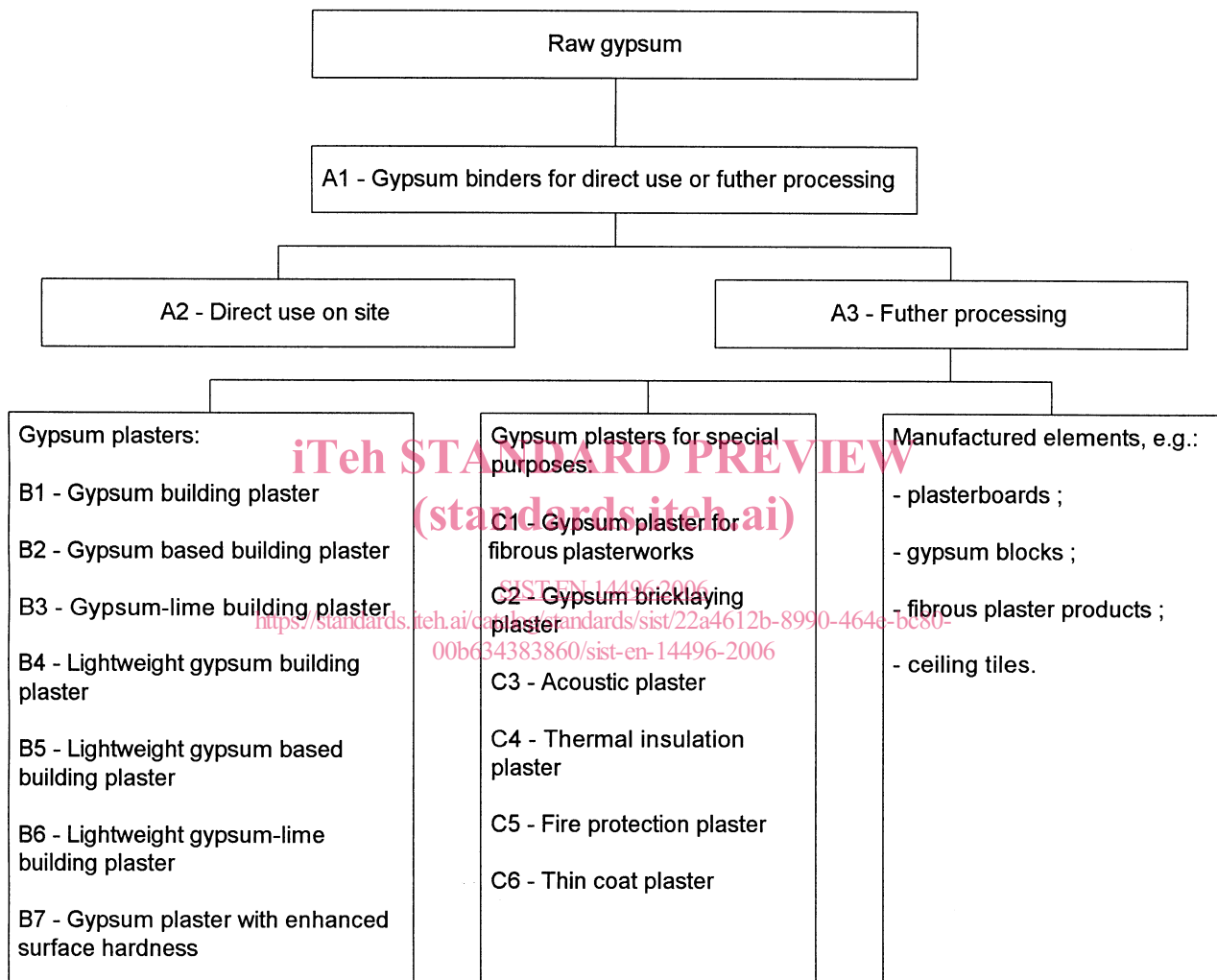
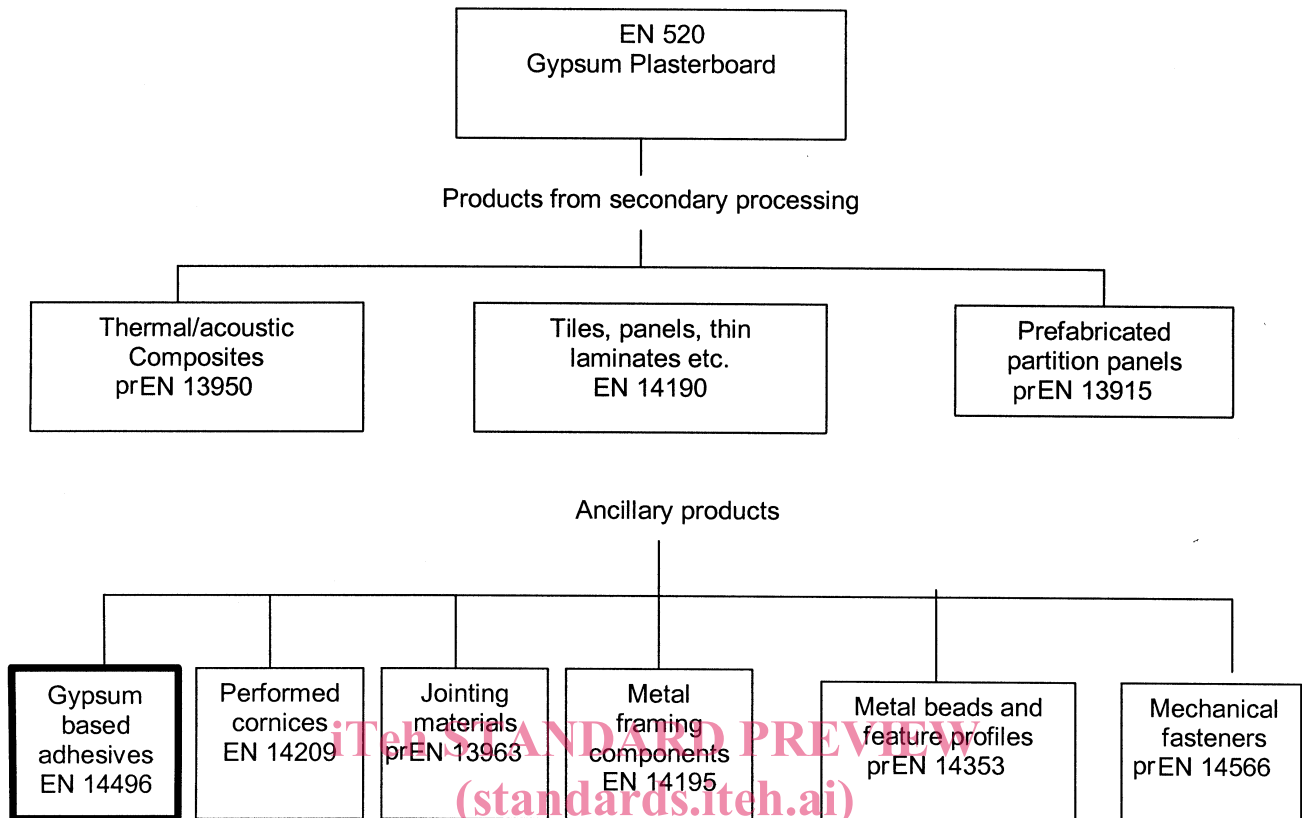


Diagram 1 — Family of gypsum products



SIST EN 14496:2006

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Diagram 2 — Family of ancillary products for use with gypsum products

1 Scope

This European standard specifies the characteristics and performances of gypsum based adhesives which are composed of gypsum plasters defined in EN 13279-1 and of additives. These adhesives are used for fixing to walls and partitions, gypsum plasterboard thermal/acoustic insulation composite panels according to EN 13950, gypsum plasterboard linings according to EN 520 and other suitable products as reprocessed boards according to EN 14190 and cornices according to EN 14209. They assist in the construction of systems which provide thermal and acoustic performance.

It covers the following performance characteristics: reaction to fire, fire resistance and bond strength to be measured according to the corresponding European test methods.

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

This standard covers also additional technical characteristics that are of importance for the use and acceptance of the product by the construction industry and the reference tests for these characteristics.

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 196-1:1994, *Methods of testing cement — Determination of strength*

EN 13279-2:2004, *Gypsum and gypsum plasters — Part 2 : 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 13501-2, *Fire classification of construction products and building elements — Part 2 : Classification using data from fire resistance tests, excluding ventilation services*

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

3 Requirements

3.1 Fire behaviour

3.1.1 Reaction to fire

Gypsum building plaster is the main component of gypsum based adhesives. Therefore, gypsum based adhesives are classified A.1 (no contribution to fire) without testing when they contain less than 1 % by weight or volume (whichever is the more onerous) of organic material (Commission Decision 96/603/EEC as amended).

If they contain 1 % or more by weight or volume of organic material, they shall be determined and classified in accordance with EN 13501-1.

When testing in EN 13823 is required, gypsum based adhesives shall be tested in their end use conditions.

3.1.2 Fire resistance

NOTE Resistance to fire is a characteristic dependant on an assembled system and not of the product in isolation.

EN 14496:2005 (E)

When required, the fire resistance of a system including gypsum based adhesives for thermal/acoustic insulation composite panels shall be determined and classified according to EN 13501-2.

3.2 Bond strength

The bond strength of the adhesive determined as described in 4.6 shall not be less than 0,06 MPa.

3.3 Dangerous substances

Materials used in products shall not release any dangerous 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.

3.4 Calcium sulfate content

The calcium sulfate content of the powder as a percentage by mass of the product shall not be less than 30 % when calculated from the result of the test carried out in accordance with 4.2 of EN 13279-2:2004.

3.5 End of utilisation time

The end of utilisation time is determined as described in 4.5 shall be greater than the time declared by the producer.

4 Test methods

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4.1 General

This standard describes the specific test methods for gypsum based adhesives for thermal/acoustic insulation composite panels and plasterboards.

SIST EN 14496:2006

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General conditions of tests as well as test method which are common to gypsum plaster and gypsum based adhesives are described in EN 13279-2.

Those test methods which enable the requirements of this European Standard to be evaluated are given below; test methods for other properties, for examples particle size, may be used by agreement.

4.2 Determination of the calcium sulfate content

Test method is described in 4.2 of EN 13279-2:2004.

4.3 Determination of the water/adhesive ratio

Test method is described in 4.3.2 of EN 13279-2:2004.

4.4 Preparation of the paste for the tests

The paste used for the tests and for the preparation of test pieces is prepared as described in 4.3.2 of EN 13279-2:2004.

4.5 Determination of the end of utilisation time**4.5.1 Principle**

The depth of penetration of the conical penetrator (cone) into a gypsum based adhesive/water paste as the set progresses shall be measured.

4.5.2 Apparatus

- a) Vicat apparatus: see EN 13279-2:2004, Figures 1 and 2;
- b) conical penetrator (cone): see EN 13279-2:2004, Figure 3;
- c) glass plate : about 150 mm long and 150 mm wide;
- d) Vicat ring : see EN 13279-2:2004, item b) in 4.3.2.2;
- e) straight edge :140 mm length;
- f) chronometer;
- g) mixer and paddle: see 4.4 of EN 196-1:1994 (description in Annex A).

4.5.3 Procedure

The Vicat ring shall be placed on the glass plate with the larger opening in contact with the glass plate. The gypsum based adhesive shall be mixed with the amount of water determined according to 4.3. The time at which the adhesive is first added to the water is noted t_0 . An excess of adhesive shall be transferred to the ring. Using a sawing motion the vertically held straight edge is used to strike off the excess material. Lower the cone to the surface of the adhesive using the spring plate of the release mechanism.

The guide bar shall be opened for testing using the release mechanism. The time between successive cone penetration should be not greater than 1/20 of the utilisation time. The cone shall be cleaned and dried between each penetration and there should be at least 12 mm between each penetration mark. The time at which the depth of penetration achieved (35 ± 2) mm above the glass plate shall be noted t_1 .

4.5.4 Expression of results

The end of utilisation time t is given by the following formula:

$$t = (t_1 - t_0) \times 0,8$$

where

t_1 is the time at which the depth of penetration (35 ± 2) mm above the glass plate is achieved, in minutes

t_0 is the time at which the adhesive is first added to the water, in minutes

4.6 Determination of the bond strength

4.6.1 Principle

The bond strength of an adhesive pad shall be measured by applying a force perpendicularly to the adhesion interface.

NOTE Polystyrene is used as background as a typical insulating product.