SLOVENSKI STANDARD
SIST EN 13950:2006

01-april-2006

Mavļ ne ploģļ e za toplotno/zvoļ no izolacijo kompozitnih panelov ï Definicije, zahteve in preskusne metode

Gypsum plasterboard thermal/acoustic insulation composite panels - Definitions, requirements and test methods

Gips-Verbundplatten zur Wärme- und Schalldämmung - Begriffe, Anforderungen und Prüfverfahren

Complexes d'isolation thermique/acoustique en plaques de plâtre - Définitions, exigences et méthodes d'essai

Ta slovenski standard je istoveten z: **EN 13950:2005**

ICS:

91.100.10	Cement. Mavec. Apno. Malta	Cement. Gypsum. Lime. Mortar
91.100.60	Materiali za toplotno in zvoļ no izolacijo	Thermal and sound insulating materials

SIST EN 13950:2006 **en**

EUROPEAN STANDARD

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English Version

Gypsum plasterboard thermal/acoustic insulation composite panels - Definitions, requirements and test methods

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This European Standard was approved by CEN on 12 September 2005.

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.

CEN members are the national standards bodies of 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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Foreword

This European Standard (EN 13950:2005) 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of an identical text or by endorsement, at the latest by May 2006, and conflicting national standards shall be withdrawn at the latest by August 2007.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 European Standard 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 European Standard.

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.

Introduction

Diagrams 1 and 2 below show the relationship between this European Standard and the package of European Standards prepared to support the families of gypsum and ancillary products.

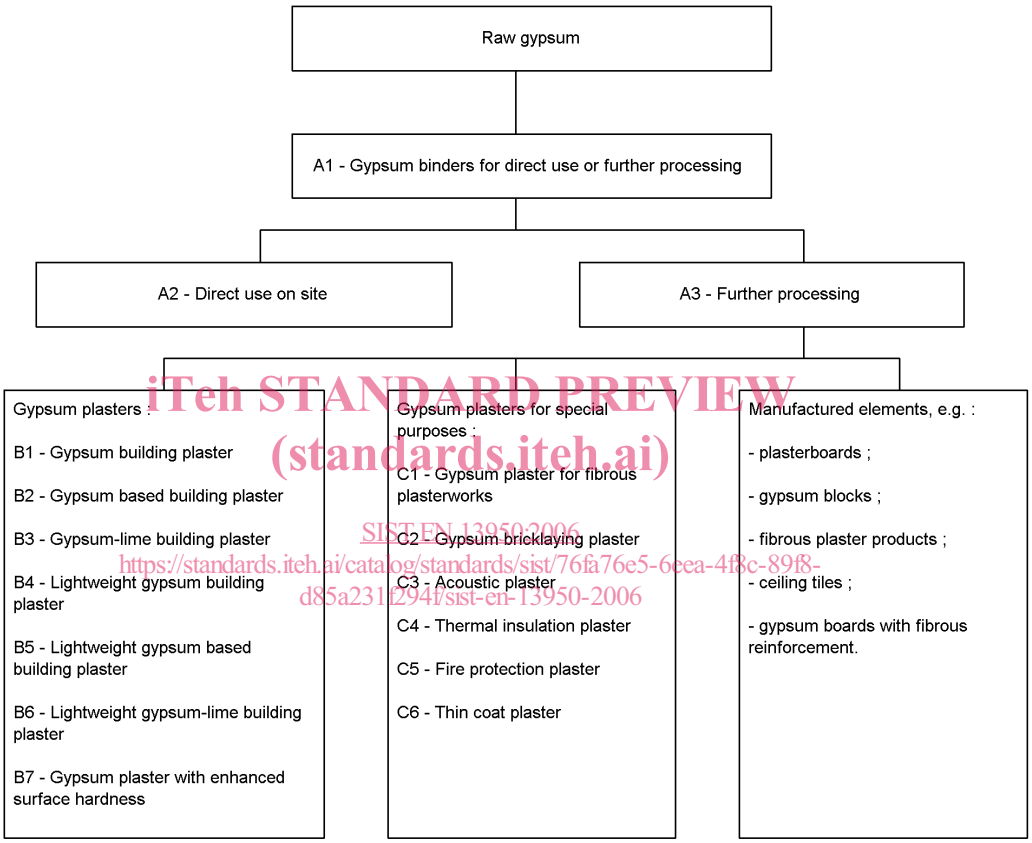

Diagram 1 — Family of gypsum products

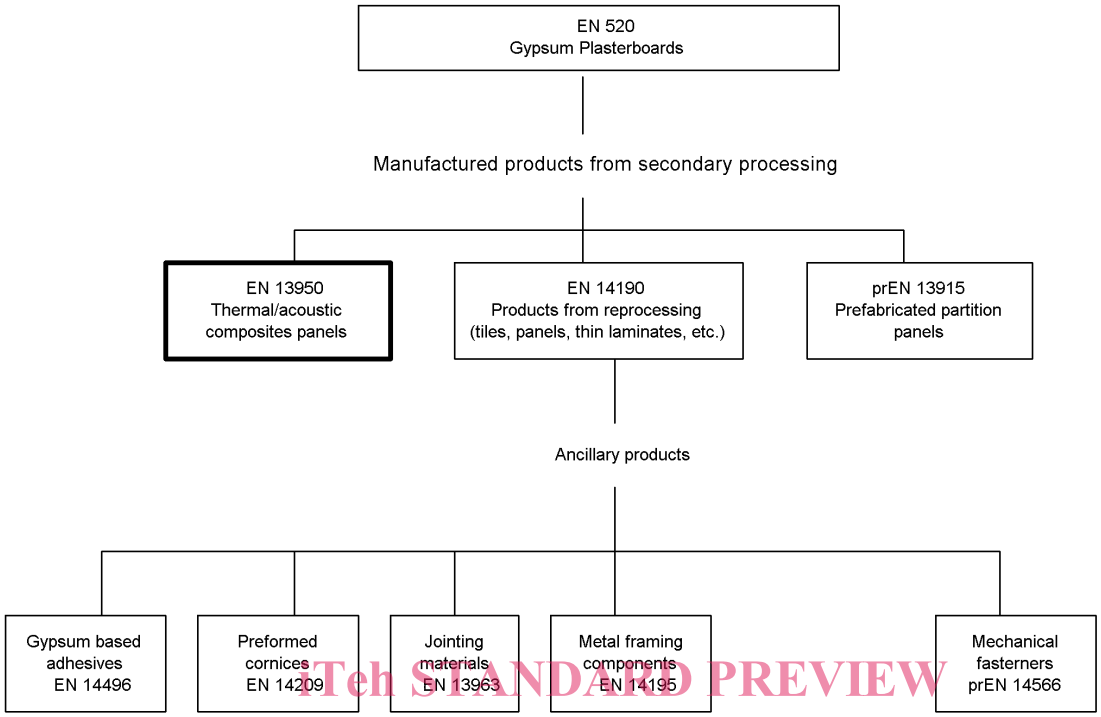

Diagram 2 — Family of ancillary products

1 Scope

This European Standard specifies the characteristics and performance of thermal/acoustic insulation composite panels made of an insulating material laminated to gypsum plasterboards for which the main intended use is the internal insulation (thermal and/or acoustic) of walls. They are attached with adhesives or by mechanical fixings to vertical solid backgrounds and by mechanical fixings to wood or metal framing with the plasterboard face exposed. The method of fixing and jointing shall ensure that the insulating material is not exposed in its normal application

This European Standard covers the following performances characteristics: reaction to fire, fire resistance, water vapour permeability, flexural strength, impact resistance, direct airborne sound insulation and thermal resistance to be measured according to the corresponding European test methods.

It provides for the evaluation of conformity of the products to this European Standard.

This European Standard covers also additional technical characteristics that are of importance for the use and acceptance of the product by the construction industry.

2 Normative references

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

EN 520:2004, *Gypsum plasterboards — Definitions, requirements and test methods*

EN 825:1994, *Thermal insulating products for building applications — Determination of flatness*

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*

EN 13963, *Jointing materials for gypsum plasterboards — Definitions requirements and test methods*

EN 14190, *Gypsum plasterboard products from reprocessing - Definitions, requirements and test methods*

EN 14496, *Gypsum based adhesives for thermal/acoustic insulation composite panels and plasterboards — Definitions, requirements and test methods*

EN ISO 140-3, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 3: Laboratory measurements of airborne sound insulation of building elements (ISO 140-3:1995)*

prEN ISO 140-16, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 16: Laboratory measurement of the sound reduction index improvement by additional lining (ISO/DIS 140-16:2004))*

EN ISO 717-1, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation (ISO 717-1:1996)*

EN ISO 354, *Acoustics — Measurement of sound absorption in a reverberation room (ISO 354:2003)*

EN ISO 11925-2, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame – Part 2: Single-flame source test (ISO 11925-2:2002)*

EN ISO 12572, *Hygrothermal performance of building materials and products — Determination of water vapour transmission properties (ISO 12572:2001)*

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

ISO 7892, *Vertical building elements — Impact resistance tests — Impact bodies and general test procedures*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1 Terms and definitions of the product

3.1.1
gypsum plasterboard thermal/acoustic insulation composite panel
panel made from an insulating material laminated to gypsum plasterboard, with or without a water vapour retarder.

Gypsum plasterboard thermal/acoustic insulation composite panels are manufactured by the bonding of one of the following insulating materials (as specified in its relevant EN) to gypsum plasterboards complying with EN 520 or EN 14190:

a) for class 1 composites:

— expanded polystyrene foam (EPS) (see EN 13163);

— extruded polystyrene foam (XPS) (see EN 13164);

— rigid polyurethane foam (polyisocyanate, polyisocyanurate) (PUR and PIR) (see EN 13165);

— phenolic foam (PF) (see EN 13166);

b) for class 2 composites:

— mineral wool (MW) (see EN 13162).

Gypsum plasterboard thermal/acoustic insulation composite panels are for convenience referred to elsewhere in this European Standard as “composites”

3.1.2
gypsum plasterboard thermal/acoustic insulation sandwich panel
gypsum plasterboard thermal/acoustic insulation composite panel with plasterboard on both faces

3.2 Terminology

3.2.1
water vapour retarder
material which reduces water vapour diffusion, provided separately or in conjunction with the plasterboard (see EN 14190)

3.2.2
panel facing
exposed surface of plasterboard to receive either direct decoration or gypsum plaster

3.2.3
length
dimension of the laminate measured by convention on the gypsum plasterboard, parallel to the paper covered edges

3.2.4
width
dimension of the laminate measured by convention on the gypsum plasterboard, parallel to the cut edges

3.2.5
thickness
distance between the outer surfaces of the composite or of the sandwich panel

3.2.6
offset
position of the insulating material relative to the gypsum plasterboard and between the two plasterboards in the case of the sandwich panel. When the insulating material projects over the edge or the end of the plasterboard, the offset is taken to be positive

4 Requirements

4.1 General

The plasterboard and the thermal insulating material shall comply with their respective European Standards. Further requirements of the thermal insulating material are given below.

Acoustic and thermal insulation performance vary according to the type of the insulating material, its thickness, its application and system.

4.2 Fire behaviour

4.2.1 Reaction to fire

When the intended use of gypsum plasterboard thermal/acoustic composite panels is for exposed situations in building construction works, composites shall be tested with their edges protected and classified in accordance with EN 13501-1.

Composites tested according to EN 13823 (SBI test) shall be mounted and fixed (see Annex A).

Composites tested according to EN ISO 11925-2 (small flame test) shall be tested on the face only as the edges are never exposed in use.

4.2.2 Fire resistance

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

When the producer wishes to determine the fire resistance performance of a system including composites, the system shall be tested and classified according to EN 13501-2.

4.3 Water vapour permeability (expressed as water vapour resistance factor)

Water vapour permeability is not a characteristic of heterogeneous products like composites.

When the intended use of composites is for moisture diffusion control, the water vapour resistance of the composites shall be determined in accordance with the test method described in EN ISO 12572.

NOTE Design values of water vapour resistance given in EN 12524 may be used for calculation.

4.4 Flexural strength

Composites shall have a minimum tranverse breaking load of 160 N and longitudinal breaking load of 400 N when determined in accordance with 5.7 of EN 520:2004. This can be ensured when using plasterboard complying with EN 520 and having those mechanical performances.

4.5 Impact resistance

NOTE Impact resistance is a characteristic dependent on an assembled system and not of the product in isolation.

When the producer wishes to determine the impact resistance performance of a system including composite panels, the system shall be tested and classified according to ISO 7892.

4.6 Direct airborne sound insulation

NOTE Direct airborne sound insulation is characteristic dependant on an assembled system and not of the product in isolation.

When the producer wishes to determine the direct airborn sound insulation of a system including composites, the system shall be tested and classified according to EN ISO 140-3 and prEN ISO 140-16 (laboratory) and EN ISO 717-1 (site) as appropriate.

4.7 Acoustic absorption

NOTE Acoustic absorption is a characteristic dependant on an assembled system and not of the product in isolation.

When the producer wishes to determine the acoustic absorption of a system including composites, the system shall be tested and classified according to EN 354.

4.8 Thermal resistance of the panel

The thermal resistance of the composite panel shall be obtained by the addition of the thermal resistances of the components and expressed in m^2 x K/W.

When a producer wishes to declare thermal resistance, the thermal resistance may be calculated on the basis of tabulated data, testing or combination of them both.

Design thermal resistance values of plasterboards are given in EN 12524.

EN 12939 and EN 12667 give test methods for the thermal resistance of insulating products.

4.9 Dimensions and tolerances

The dimensions and tolerances of the composite panels shall be as follows:

— **widths**: nominal width shall be stated by the producer.

NOTE Common nominal widths are 600 mm, 625 mm, 900 mm, 1 200 mm and 1 250 mm.

The width shall be measured as described in 5.2.1 and compared to the nominal width. The tolerance for each individual measurement shall be: $\begin{cases} 0 \\ -4 \end{cases}$ mm .

— **lengths**: nominal lengths shall be stated by the producer.

The length shall be measured as described in 5.2.2 and compared to the nominal length. The tolerance for each individual measurement shall be: $\begin{cases} 0 \\ -5 \end{cases}$ mm .