



# SLOVENSKI STANDARD

## SIST EN 14190:2005

01-september-2005

---

A Uj bY'd`cý Y]n'fYW\_`UjY`È8 YZb]WYžnU hYj Y]b'dfYg\_i gbY'a YtcXY

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

Gipsplattenprodukte aus der Weiterverarbeitung - Begriffe, Anforderungen und Prüfverfahren

(standards.iteh.ai)

Produits de transformation secondaire de plaques de plâtre - Définitions, exigences et méthodes d'essai

<https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0fd94e6f222/sist-en-14190-2005>

Ta slovenski standard je istoveten z: EN 14190:2005

---

**ICS:**

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

**SIST EN 14190:2005**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 14190:2005](https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0fd94e6f222/sist-en-14190-2005)

<https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0fd94e6f222/sist-en-14190-2005>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 14190**

June 2005

ICS 91.100.10; 01.040.91

English version

## Gypsum plasterboard products from reprocessing - Definitions, requirements and test methods

Produits de transformation secondaire de plaques de plâtre  
- Définitions, spécifications et méthodes d'essai

Gipsplatten - Produkte aus der Weiterverarbeitung -  
Begriffe, Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 1 July 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.

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.

[SIST EN 14190:2005](https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0fdd94e6f222/sist-en-14190-2005)

<https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0fdd94e6f222/sist-en-14190-2005>



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 Terms and definitions .....	8
4 Requirements .....	9
4.1 Mechanical characteristics .....	9
4.1.1 Flexural strength (expressed as flexural breaking load).....	9
4.1.2 Stability of ceiling elements .....	9
4.1.3 Shear strength (strength of board/substructure connection) .....	9
4.1.4 Impact resistance.....	9
Fire behaviour .....	9
4.2.1 Reaction to fire.....	9
4.2.2 Resistance to fire.....	10
4.3 Water vapour permeability (expressed as water vapour resistance factor).....	10
4.4 Acoustic properties .....	10
4.4.1 Direct airborne sound insulation .....	10
4.4.2 Acoustic absorption .....	10
4.4.3 Impact sound insulation .....	10
4.5 Thermal resistance (expressed as thermal conductivity) .....	10
Regulated substances.....	11
4.7 Dimensions and tolerances .....	11
4.8 Thermal emissivity.....	11
4.9 X-ray protection .....	11
5 Test methods.....	11
5.1 Sampling .....	11
5.2 Stability determination .....	11
5.2.1 Principle.....	11
5.2.2 Apparatus .....	11
5.2.3 Procedure .....	11
5.2.4 Expression of results .....	12
5.3 Determination of thermal emissivity.....	12
5.3.1 Principle.....	12
5.3.2 Apparatus .....	12
5.3.3 Procedure .....	12
5.3.4 Expression of results .....	13
6 Evaluation of conformity.....	13
6.1 General.....	13
6.2 Type testing.....	13
6.2.1 General.....	13
6.2.2 Initial type testing .....	13
6.2.3 Further type testing .....	14
6.3 Factory production control (FPC) .....	14
6.3.1 General.....	14
6.3.2 Personnel.....	14
6.3.3 Equipment .....	15

6.3.4	Raw materials and components .....	15
6.3.5	Product testing and evaluation.....	15
6.3.6	Traceability and marking .....	15
6.3.7	Non-conforming products .....	15
6.3.8	Corrective action .....	15
6.3.9	Other test methods.....	15
7	Designation of gypsum plasterboard products from reprocessing .....	16
8	Marking, labelling and packaging.....	16
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 B	(informative) Reprocessing operations.....	19
Annex C	(normative) Mounting and fixing in the test according to EN 13823 (SBI test) and related information .....	20
C.1	General .....	20
C.2	Products which have only been changed by mechanical processes to alter their shape or dimensions e.g. those subject to operations described in Annex B (a, b, k, l) .....	20
C.3	Products which are formed by adhesion of another material (or plasterboard) to the surface of the plasterboard as in Annex B (d, g) .....	20
C.4	Mounting and fixing for products which are formed by operations other than those listed in C.2 and C.3 above.....	20
Annex ZA	(informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive .....	21
ZA.1	Scope and relevant characteristics .....	21
ZA.2	Attestation and declaration of conformity of gypsum plasterboard products from reprocessing.....	23
ZA.3	CE marking and labelling.....	25
Bibliography	.....	28

**EN 14190:2005 (E)****Foreword**

This European Standard (EN 14190:2005) 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 December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

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 Directives, 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.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 14190:2005](#)

<https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0ffd94e6f222/sist-en-14190-2005>

## Introduction

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

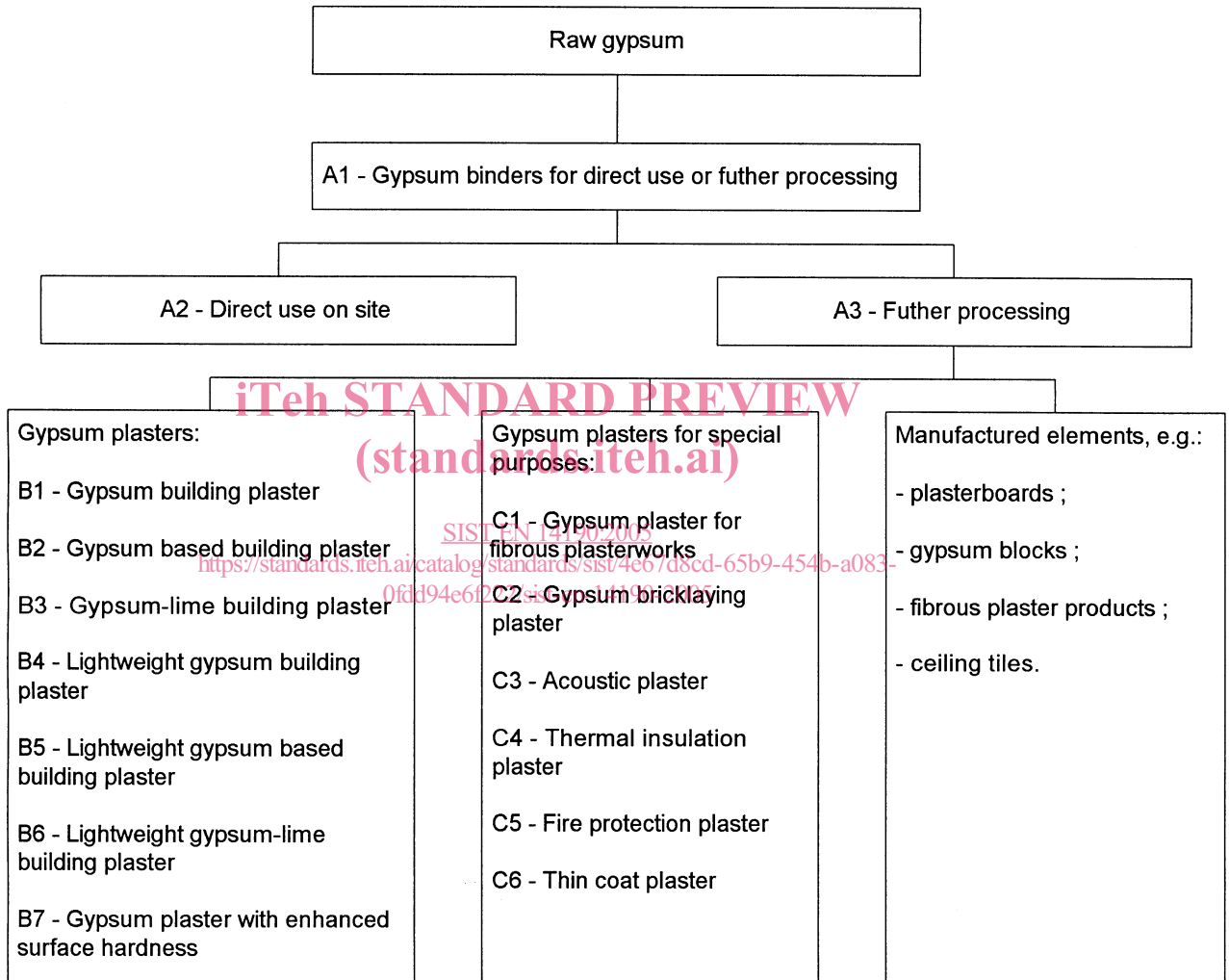
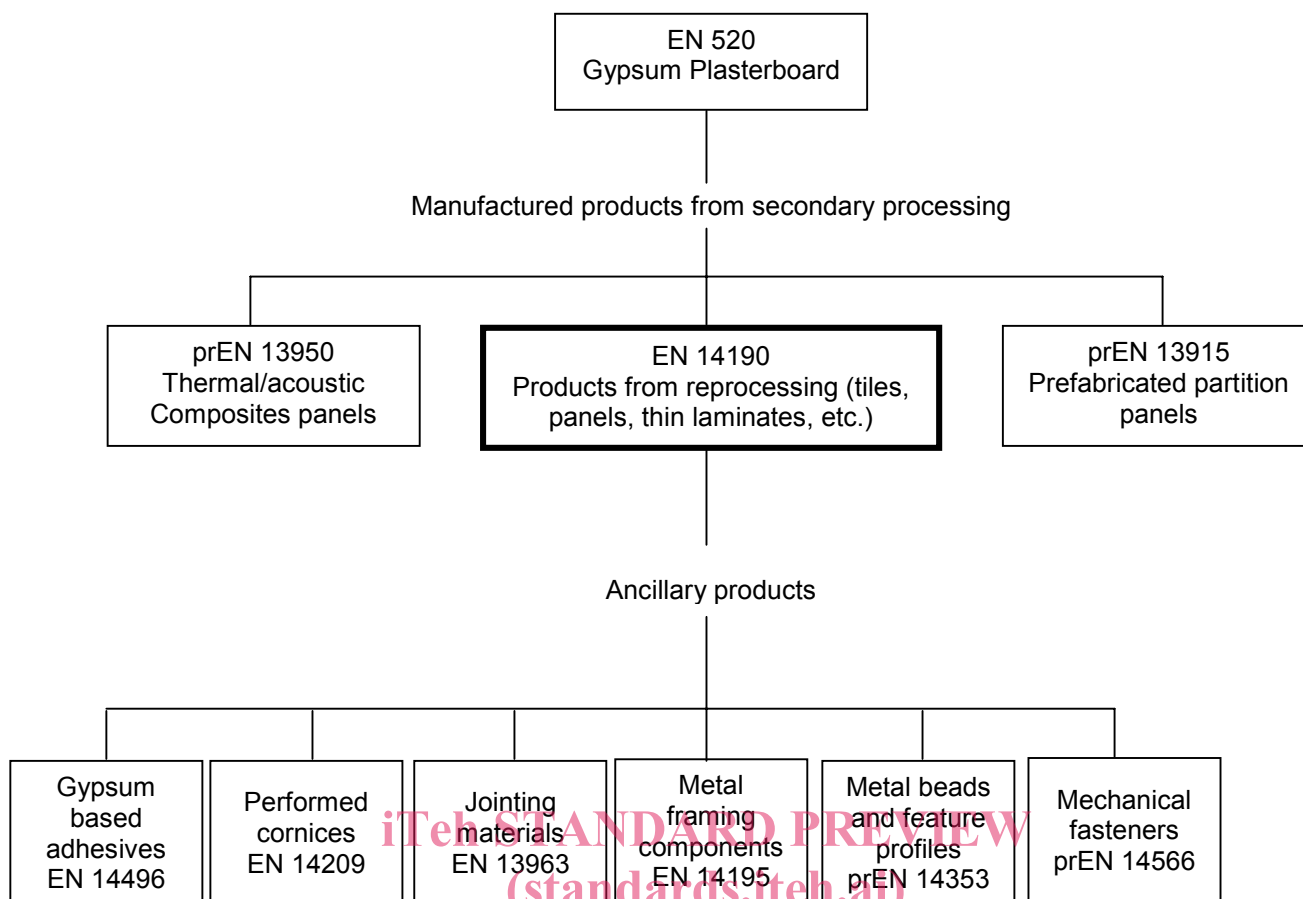


Diagram 1 – Family of gypsum products



**Diagram 2 – Family of ancillary products**

<https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0fdd94e6f222/sist-en-14190-2005>



## 1 Scope

This European Standard specifies the characteristics and performance of products which have been produced from gypsum plasterboards manufactured according to EN 520 by reprocessing. Reprocessing may include cutting, perforating, edge profiling, decorating and laminating membranes of other materials for functional or decorative purposes, attaching fixings including supports e.g. for partitions. A fuller list of reprocessing operations is given in Annex B.

Gypsum plasterboards subject to reprocessing operations may be suitable for extended applications such as suspended ceilings providing sound absorption, flooring, self decorative finishes, low emissivity characteristics, moisture vapour control and X-ray protection.

The products are intended for use in wall, ceiling and floor applications, where they may be fixed direct to the background, or they are used in systems assembled in conjunction with the structure to form separate or suspended linings. The products offer a wide range of aesthetic solutions of modular or non-modular design.

This standard covers the following product performance characteristics: reaction to fire, water vapour permeability, stability in case of ceiling elements, flexural strength (breaking load), impact resistance, thermal resistance.

The following performance characteristics are linked to systems assembled with products from reprocessing: shear strength, direct airborne sound insulation and acoustic absorption to be measured according to the corresponding European test methods. If required, tests should be done on assembled systems simulating the end use conditions.

## iTeh STANDARD PREVIEW

This European standard also covers 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.

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

This standard does not cover gypsum plasterboard thermal/acoustic insulation composite panels and prefabricated gypsum wallboard panels according to prEN 13950 and prEN 13915, respectively.

## 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 520:2003, *Gypsum plasterboards – Definitions, requirements and test methods*

EN 12524, *Building materials and products – Hygrothermal properties – Tabulated design values*

EN 12664, *Thermal performance of building materials and products – Determination of thermal resistance by means of guarded hot plate and heat flow meter methods – Dry and moist products of medium and low thermal resistance*

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 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)*

**EN 14190:2005 (E)**

EN ISO 140-6, *Acoustics – Measurement of sound insulation in buildings and of building elements – Part 6: Laboratory measurements of impact sound insulation of floors (ISO 140-6:1998)*

EN ISO 140-7, *Acoustics – Measurement of sound insulation in buildings and of building elements – Part 7: Field measurements of impact sound insulation of floors (ISO 140-7:1998)*

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

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 6946, *Building components and building elements – Thermal resistance and thermal transmittance – Calculation method (ISO 6946:1996)*

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

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

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

IEC 61331-1, *Protective devices against diagnostic medical X-radiation – Part 1: Determination of attenuation properties of materials (IEC 61331-1:1994)*

**3 Terms and definitions**

**STANDARD PREVIEW**  
(standards.iteh.ai)

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

**3.1****face**

surface intended to be exposed

[SIST EN 14190:2005](https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0ffd94e6f222/sist-en-14190-2005)

<https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083-0ffd94e6f222/sist-en-14190-2005>

**3.2****back**

surface intended to be concealed

**3.3****perforations**

holes of constant or varying shape and size

**3.4****thin laminations**

material applied to one or more surfaces to impart decoration or functional properties

**3.5****floor elements**

construction of 2 or more plasterboards stuck together to provide profiled edges. Suitable single boards of adequate thickness and edge configuration may also comply. Floor elements may include thermal and impact sound insulation

**3.6****foldable elements**

elements formed from plasterboards, that have previously been milled to provide inclined channels through their thickness, to allow them to be folded.

### 3.7

#### arch elements

Plasterboard preformed into curved elements, having a range of radii, size and shape, in single boards and multi-layer laminates. The edges may be flush or staggered, inside or outside, to requirements.

### 3.8

#### integral fixing

component attached, usually to the back of the unit, to provide support. Alternatively, the edges of the unit may be profiled

## 4 Requirements

### 4.1 Mechanical characteristics

#### 4.1.1 Flexural strength (expressed as flexural breaking load)

All gypsum plasterboards used to manufacture the products described in this document shall meet the breaking load requirements given in EN 520.

#### 4.1.2 Stability of ceiling elements

When the intended use of the products from reprocessing is for self attachment, incorporating integral fixings including pre-attached supporting framing members, the load supported by the product shall be not less than 5 times the dead load of the product.

All three samples shall comply when determined in accordance with 5.2.

#### 4.1.3 Shear strength (strength of board/substructure connection)

<https://standards.iteh.ai/catalog/standards/sist/4e67d8cd-65b9-454b-a083->

When the intended use of the products from reprocessing is stiffening timber framed building assemblies (i.e. walls, partitions, roof truss structures etc.) the conventional shear strength of the product shall be determined in accordance with the test method described in 5.13 of EN 520:2003.

In those cases where the secondary processing does not lead to a loss of strength, the shear strength of the plasterboard provided by the producer may be used.

#### 4.1.4 Impact resistance

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

When required, the impact resistance of a system including gypsum plasterboard shall be determined in accordance with ISO 7892.

### 4.2 Fire behaviour

#### 4.2.1 Reaction to fire

When the intended use of products from reprocessing is for fire exposed situations in building construction works, the reaction to fire classification determined in accordance with 4.2 of EN 520:2003 may be used providing there is no deterioration in the reaction to fire characteristics as the result of reprocessing (see Annex C for more information).

In those cases where the reprocessing is likely to lead to a change of the reaction to fire, or the mounting and fixing conditions of EN 520 do not apply, the product shall be tested and classified according to EN 13501-1.

**EN 14190:2005 (E)**

Products 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.

**4.2.2 Resistance to fire**

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

When required, the resistance to fire of a system including products from reprocessing shall be classified in accordance with EN 13501-2.

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

Where the intended use of the products from reprocessing is moisture diffusion control, tabulated design values of water vapour resistance factor for gypsum plasterboards given in EN 12524 may be used providing it does not change as the result of secondary manufacturing.

In other cases the water vapour resistance factor shall be determined using the method given in EN ISO 12572.

**4.4 Acoustic properties****4.4.1 Direct airborne sound insulation**

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

When required, the direct airborne sound insulation of a system including products from reprocessing shall be determined in accordance with EN ISO 140-3 and EN ISO 717-1.

**4.4.2 Acoustic absorption**

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

When required, acoustic absorption shall be measured according to EN ISO 354.

**4.4.3 Impact sound insulation**

NOTE Impact sound insulation is a property of an assembled system and not of the product itself.

When required, the impact sound insulation of a system including products from reprocessing shall be determined in accordance with EN ISO 140-6 and EN ISO 140-7.

**4.5 Thermal resistance (expressed as thermal conductivity)**

When the intended use of products from reprocessing is to contribute to the thermal resistance in building construction works (walls, partition, ceilings and floors) the design values of thermal conductivity for gypsum plasterboards given in EN 12524 may be used.

Alternatively, thermal conductivity shall be calculated according to EN ISO 6946 for the plasterboard and those products which may be combined as a result of the secondary processing operation.

When required, thermal conductivity shall be determined in accordance with EN 12664.