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### Ceramic tiles — Grouts and adhesives —

Part 6:

### Requirements, test methods, evaluation of conformity, classification and designation for waterproof membranes used with the installation of ceramic tiles

ICS: 91.100.10; 91.100.23

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13007-6 was prepared by Technical Committee ISO/TC 189, *Ceramic Tiles*.

ISO 13007 consists of the following parts, under the general title *Ceramic tiles — Grouts and adhesives*:

- *Part 1: Terms, definitions and specifications for adhesives*
- *Part 2: Test methods for adhesives*
- *Part 3: Terms, definitions and specifications for grouts*
- *Part 4: Test methods for grouts*
- *Part 5: Liquid-applied waterproofing products for use beneath ceramic tiling bonded with adhesives Requirements, test methods, evaluation of conformity, classification and designation*
- *Part 6: Requirements, test methods, evaluation of conformity, classification, and designation for bonded sheet waterproofing membranes for use beneath ceramic tiling bonded with adhesives*

## Introduction

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# Ceramic tiles — Grouts and adhesives —

## Part 6:

# Requirements, test methods, evaluation of conformity, classification and designation for waterproof membranes used with the installation of ceramic tiles

## 1 Scope

This part of ISO 13007-6 applies to all bonded sheet waterproofing membranes that are used beneath ceramic tiling for internal and external tile installations on walls and floors.

This ISO standard gives the terminology concerning the products and specifies the test methods and the values of performance requirements for bonded sheet waterproofing products associated with tile adhesives.

Further, this ISO specifies the evaluation of conformity and the classification and designation of all bonded sheet waterproofing products beneath ceramic tiling.

NOTE 1 Bonded sheet waterproofing products may also be used beneath other types of tiles (natural and agglomerated stones etc.), where they do not adversely affect these materials.

NOTE 2 This standard does not address crack isolation, decoupling, sound control, thermal properties, or any aspect of membranes apart from waterproofing.

## 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.

ISO 13006, *Ceramic tiles — Definitions, classification, characteristics and marking*

ISO 13007-1, *Ceramic tiles — Grouts and adhesives — Part 1: Terms, definitions and specifications for adhesives*

ISO 13007-2, *Ceramic tiles — Grouts and adhesives — Part 2: Test methods for adhesives*

EN 197-1, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

EN 480-1, *Admixture for concrete, mortar and grout — Test methods — Part 1: Reference concrete and mortar for testing*

EN 1008, *Mixing water for concrete — Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete*

EN 1067, *Adhesives — Examination and preparation of samples for testing*

EN 12620, *Aggregates for concrete*

ISO 7393-3, *Water quality — Determination of free chlorine and total chlorine — Part 3: Iodometric titration method for the determination of total chlorine*

ISO 15605, *Adhesives — Sampling*

ASTM E-96 *Standard Test Methods for Water Vapor Transmission of Materials*

EN 14891, *Liquid-applied water impermeable products for use beneath ceramic tiling bonded with adhesives - Requirements, test methods, evaluation of conformity, classification and designation*

EN 934-2, *Admixtures for concrete, mortar and grout – Part 2: Concrete admixtures – Definitions, requirements, conformity, marking and labelling*

EN 12390-2, *Testing hardened concrete. Making and curing specimens for strength tests*

### 3 Terms and definitions

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

**3.1 bonded sheet waterproofing membrane**  
single- or multi component waterproofing membrane applied as a preformed sheet in a uniform layer or layers, beneath ceramic tiling in such a manner as to be bonded to the substrate as well as the tile according to manufacturer’s instructions. Can be flat or structured with a geometric configuration

Note 1 to entry: The final waterproofing membrane may include a separately applied seam sealer

**3.2 primer**  
liquid coating applied to the surface, prior to the application of a bonded sheet waterproofing product, to improve adhesion and durability of the bond between the substrate and the membrane

**3.3 fundamental characteristics**  
characteristics that a bonded sheet waterproofing membrane product always needs to have

**3.4 optional characteristics**  
characteristics for specific service conditions where enhanced levels of performance are required, or which provide further information about its general performance

### 4 Requirements

The bonded sheet waterproofing membrane products shall comply with the characteristics specified in [Section 1a](#) of [Table 1](#).

[Table 1 section 1b](#) gives the additional characteristics that might be required for special service conditions.

The Tile adhesive used for evaluation should be the same for all testing performed in a series, a C2S1 adhesive being recommended. The amount of water and/or liquid admixture required for preparing the adhesives used to affix to the sheet membrane shall be the same for all tests

**Table 1 — Product requirements**

1 a FUNDAMENTAL CHARACTERISTICS		
Characteristic	Requirement	Test method
Initial tensile adhesion strength	≥ 0,2 N/mm <sup>2</sup>	<a href="#">A.6.2</a>
Tensile adhesion strength after water contact	≥ 0,2 N/mm <sup>2</sup>	<a href="#">A.6.3</a> or <a href="#">A.6.4</a>
Tensile adhesion strength after heat ageing	≥ 0,2 N/mm <sup>2</sup>	<a href="#">A.6.5</a>
Tensile adhesion strength after freeze-thaw cycles	≥ 0,2 N/mm <sup>2</sup>	<a href="#">A.6.6</a>
Tensile adhesion strength after contact with lime water	≥ 0,2 N/mm <sup>2</sup>	<a href="#">A.6.9</a>



Table 1 (continued)

Waterproofing	No visual penetration below membrane and ≤ 3,0 g weight gain when tested at a seam	<a href="#">A.7</a>
<b>1 b OPTIONAL CHARACTERISTICS</b>		
<b>Characteristic</b>	<b>Requirement</b>	<b>Test method</b>
Enhanced adhesion (BM2 rating) – All Tensile Strengths Listed Above	≥ 0,5 N/mm <sup>2</sup>	
Low water vapour permeance (W rating)	<1,0 Perm	<a href="#">A.8</a>
Tensile adhesion strength after contact with chlorinated water (P rating)	≥ 0,5 N/mm <sup>2</sup>	<a href="#">A.6.7</a> or <a href="#">A.6.8</a>

BE	p. 7	4	Table 1	te	3g is very severe.	Align with EN 14891, criterion of 20g	
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## 5 Classification and designation

The bonded sheet waterproofing membranes are classified according to the definitions given in [Clause 3 “Terms and definitions”](#):

**BM1** Bonded sheet waterproofing membrane;

**OR**

**BM2** Enhanced Adhesion bonded sheet waterproofing membrane;

Note: Membranes not meeting the minimum tensile adhesion requirements of [table 1](#) are considered Unbonded Membranes.

It is possible to have different classes, related to the different optional characteristics given in [Table 1 section 1b](#). These classes are designated by the following abbreviations:

**P** resistant to contact with chlorinated water (i.e. for use in swimming pools)

**W** resistant to water vapour permeation

The product is designated by the symbol BM1 or BM2, followed by the abbreviation of the optional characteristics it has. [Table 2](#) describes the designation of the products types and classes which shall be used.

**Table 2 — Classification and designation of bonded sheet waterproofing membranes**

SYMBOL		DESCRIPTION
TYPE	CLASS	
BM1 or 2		Normal or Enhanced Adhesion bonded sheet waterproofing membrane
BM1 or 2	P	Normal or Enhanced Adhesion bonded sheet waterproofing membrane resistant to contact with chlorinated water
BM1 or 2	W	Normal or Enhanced Adhesion bonded sheet waterproofing membrane with low water vapour permeance

Table 2 (continued)

SYMBOL		DESCRIPTION
TYPE	CLASS	
BM1 or 2	PW	Normal or Enhanced Adhesion bonded sheet waterproofing membrane with low water vapour permeance and resistance to contact with chlorinated water

## 6 Marking and labelling

Products complying with the requirements of this ISO Standard shall be clearly marked with the following information:

- a) name of the product;
- b) manufacturer's mark and place of origin;
- c) date or code of production, shelf life and conditions of storage;
- d) number of this ISO Standard, i.e. *ISO 13007-6*, and date of issue;
- e) type of product according to [Clause 6](#) (using symbols given in [Clause 6](#));
- f) instructions for use:
  - substrate bonding materials required to adhere sheet membrane to substrate
  - mode of application (including recommended primer and/or surface preparation);
  - minimum quantity or thickness of the adhesive product
  - maturing time for initial membrane bonding to substrate (where applicable);
  - delay for installing ceramic tiles;
  - suitable tile adhesive(s), *type and class in accordance with ISO 13007-1*;
  - field of application (internal, external, wall, floor etc.)

NOTE 1 In the designation of a **sheet waterproofing membrane**, information about special properties may be included when the product is intended for use in specific applications.

This information shall be marked on the packaging and/or on the product's technical data sheet.

NOTE 2 This does not remove the requirement that all manufacturers claiming compliance with this ISO Standard should state declared values for the properties of their products, when required.