SLOVENSKI STANDARD
oSIST prEN 14891:2015

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Tekoče vgrajevani za vodo neprepustni izdelki za uporabo pod keramičnimi ploščicami, lepljenimi z lepili - Zahteve, preskusne metode, ugotavljanje skladnosti, klasifikacija in označevanje

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

Flüssig zu verarbeitende wasserundurchlässige Produkte im Verbund mit keramischen Fliesen und Plattenbelägen - Anforderungen, Prüfverfahren, Konformitätsbewertung, Klassifizierung und Bezeichnung

Produits d'imperméabilisation appliqués en phase liquide utilisés sous carrelage collé - Spécifications, méthodes d'essai, évaluation de la conformité, classification et désignation

Ta slovenski standard je istoveten z: **prEN 14891 rev**

ICS:

91.100.23	Keramične ploščice	Ceramic tiles
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
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ICS 91.100.23; 91.100.50

Will supersede EN 14891:2012

English Version

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 67.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (prEN 14891:2014) has been prepared by Technical Committee CEN/TC 67 “Ceramic tiles”, the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14891:2012.

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.

The significant technical changes between this European Standard and the previous edition are listed herewith:

— Clause 3.6.1 replacement of the term “Fundamental” with “Basic”

— Clause 4, Tables 1, 2 and 3

— New clause 5

— New clause 6 in accordance with TF N. 548 rev 1

— New Annex ZA (informative) in accordance with the CPR (Regulation (EU) No. 305/2011) and the Commission Delegated Regulations (EU) 157/2014 relative to DoP made available on websites, (EU) 574/2014 relative to the Model of DoP and (EU) 568/2014 relative to the assessment and verification of constancy of performance.

1 Scope

This European Standard applies to all liquid-applied water impermeable products, based on polymer modified cementitious mortars, dispersions and reaction resin coatings, used beneath ceramic tiling, for external tile installations on walls and floors and in swimming pools.

This European Standard gives the terminology concerning the products and specifies the test methods and the values of performance requirements for liquid-applied water impermeable products associated with tile adhesives.

This European Standard specifies the evaluation of conformity and the classification and designation of liquid-applied water impermeable products beneath ceramic tiling.

This European Standard does not contain recommendations for the design and installation of ceramic tiles and grouts in combination with water impermeable products.

NOTE 1 Liquid-applied water impermeable 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 The user of this European Standard should be familiar with normal laboratory practice. This European Standard does not purport to address all the safety problems associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and to ensure compliance with any European and national regulatory conditions.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 196-1:2005, *Methods of testing cement — Part 1: Determination of strength*

EN 197-1:2011, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

EN 480-1:2006+A1:2011, *Admixtures for concrete, mortar and grout — Test methods — Part 1: Reference concrete and reference 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 1015-3, *Methods of test for mortar for masonry — Part 3: Determination of consistence of fresh mortar (by flow table)*

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

EN 12004-1, *Adhesives for tiles — Requirements, evaluation of conformity, classification and designation*

EN 12004-2, *Adhesives for tiles — Test methods*

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

EN 12620:2002+A1:2008, *Aggregates for concrete*

EN 14411, *Ceramic tiles — Definitions, classification, characteristics, evaluation of conformity and marking*

EN ISO 15605, *Adhesives — Sampling (ISO 15605)*

3 Terms and definitions

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

3.1
liquid-applied water impermeable product
single- or multicomponent waterproofing material applied in a uniform layer, beneath ceramic tiling

Note 1 to entry: The water impermeable layer can include a reinforcing cloth or mesh.

3.2
polymer modified cementitious liquid-applied water impermeable product
CM
mixture of hydraulic binding agents, aggregates and organic additives that has only to be mixed with water or liquid admixture just before use

3.3
dispersion liquid-applied water impermeable product
DM
mixture of organic binding agent(s) in the form of an aqueous polymer dispersion, organic additives and mineral fillers

Note1 to entry: The mixture is ready for use.

3.4
reaction resin liquid-applied water impermeable product
RM
mixture of synthetic resin, mineral fillers and organic additives in which hardening occurs by chemical reaction

Note1 to entry: They are available in one or more component forms.

3.5
crack bridging ability
ability of the hardened waterproofing material to withstand propagation of the cracks without deterioration

3.6
primer
liquid coating applied to the surface, prior to the application of a liquid product, to improve adhesion and durability of the bond

3.7
basic characteristics
characteristics that a liquid-applied water impermeable product absolutely has to have

3.8
optional characteristics
characteristics for specific service conditions where enhanced levels of performance are required or which provide further information about its general performance

4 Product characteristics

4.1 General

The liquid-applied water impermeable products shall comply with the characteristics specified in Table 1, section 1 a.

Table 1, section 1 b gives the additional characteristics that might be required for special service conditions.

The amount of water and/or liquid admixture required for preparing the cementitious liquid-applied water impermeable products shall be the same for all tests.

Table 1 — Product requirements

1 a BASIC CHARACTERISTICS (CM – DM – RM)		
Characteristic	**Requirement**	**Test method**
Initial tensile adhesion strength	≥ 0,5 N/mm^2	A.6.2
Tensile adhesion strength after water contact	≥ 0,5 N/mm^2	A.6.3 or A.6.4
Tensile adhesion strength after heat ageing	≥ 0,5 N/mm^2	A.6.5
Tensile adhesion strength after freeze-thaw cycles	≥ 0,5 N/mm^2	A.6.6
Tensile adhesion strength after contact with lime water	≥ 0,5 N/mm^2	A.6.9
Waterproofing	No penetration and ≤ 20 g weight gain	A.7
Crack bridging ability under standard conditions	≥ 0,75 mm	A.8.2
1 b OPTIONAL CHARACTERISTICS		
Characteristic	**Requirement**	**Test method**
Tensile adhesion strength after contact with chlorinated water **(P)**	≥ 0,5 N/mm^2	A.6.7 or A.6.8
Crack bridging ability at low temperature (- 5°C) **(O1)**	≥ 0,75 mm	A.8.3
Crack bridging ability at very low temperature (- 20°C) **(O2)**	≥ 0,75 mm	A.8.3

4.2 Release of 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.

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets. In the absence of European harmonised test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction web site on EUROPA accessed through: http://ec.europa.eu/enterprise/construction/cpd-ds/ll

5 Testing, assessment and sampling methods

Testing and assessment methods and requirements for sampling shall be as set out in Annex A.

6 Assessment and verification of constancy of performance – AVCP

6.1 General

The compliance of liquid-applied water impermeable products with the requirements of this standard and with the performances declared by the manufacturer in the DoP shall be demonstrated by:

— determination of the product type on the base of type testing;

— factory production control by the manufacturer, including product assessment.

The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the conformity of the product with its declared performances.

6.2 Type testing

6.2.1 General

All performances related to characteristics included in this standard shall be determined when the manufacturer intends to declare the respective performances unless the standard gives provisions for declaring them without performing tests. (e.g. use of previously existing data, CWFT and conventionally accepted performance).

Assessment previously performed in accordance with the provisions of this standard, may be taken into account provided that they were made to the same or a more rigorous test method, under the same AVCP system on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

For the purposes of assessment, the liquid applied water impermeable products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for that same characteristics for all products within that same family

NOTE 1 Products may be grouped in different families for different characteristics.

NOTE 2 Reference to the assessment method standards should be made to allow the selection of a suitable representative sample.

In addition, the determination of the product type shall be performed for all characteristics included in the standard for which the manufacturer declares the performance:

— at the beginning of the production of a new liquid applied water impermeable product (unless a member of the same product range), or

— at the beginning of a new or modified method of production (where this may affect the stated properties), or

— they shall be repeated for the appropriate characteristic(s), whenever a change occurs in the product design, in the raw material or in the supplier of the components, or in the method of production (subject to the definition of a family), which would affect significantly one or more of the characteristics.

Only one TT is required where different manufacturing units are producing the same product, for the same manufacturer, using the same materials (having the same performance) and documented production and process control.

Where components (e.g. cement) are used whose characteristics have already been determined by the component supplier on the basis of conformity with other product standards, these characteristics need not be re-assessed to demonstrate compliance with the European Standard. The specifications of these components shall be documented.

Products bearing regulatory marking in accordance with appropriate harmonized European specifications may be presumed to have the performances declared in the DoP, although this does not replace the responsibility on the liquid-applied water impermeable products manufacturer to ensure that liquid-applied water impermeable products as a whole is correctly manufactured and its component products have the declared performance values.

6.2.2 Test samples, testing and compliance criteria

The number of samples of liquid-applied water impermeable product and the testing method to be tested/assessed shall be in accordance with Annex A (A.6, A.7 and A.8) and Table 2.

Table 2 — Number of samples to be tested and compliance criteria

Characteristic	Requirement	Assessment method	No. of samples	Compliance criteria
Initial tensile adhesion strength	4	A.6	1	4, table 1.a
Tensile adhesion strength after water contact	4	A.6	1	4, table 1.a
Tensile adhesion strength after heat ageing	4	A.6	1	4, table 1.a
Tensile adhesion strength after freeze-thaw cycles	4	A.6	1	4, table 1.a
Tensile adhesion strength after contact with lime water	4	A.6	1	4, table 1.a
Waterproofing	4	A.7	1	4, table 1.a
Crack-bridging ability under standard conditions	4	A.8	1	4, table 1.a
Tensile adhesion strength after contact with chlorinated water	4	A.6	1	4, table 1.b
Crack-bridging ability at low temperature	4	A.8	1	4, table 1.b

6.2.3 Test reports

The results of the determination of the product type shall be documented in test reports. All test reports shall be retained by the manufacturer for at least 10 years after the last date of production of the liquid-applied water impermeable product to which they relate.

6.2.4 Shared other party results

A manufacturer may use the results of the product type determination obtained by someone else (e.g. by another manufacturer, as a common service to manufacturers, or by a product developer), to justify his own declaration of performance regarding a product that is manufactured according to the same design (e.g. dimensions) and with raw materials, constituents and manufacturing methods of the same kind, provided that:

— the results are known to be valid for products with the same essential characteristics relevant for the product performance;

— in addition to any information essential for confirming that the product has such same performances related to specific essential characteristics, the other party who has carried out the determination of the product type concerned or has had it carried out, has expressly accepted (by licence, contract, or any other type of written consent) to transmit to the manufacturer the results and the test report to be used for the latter's product type determination, as well as information regarding production facilities and the production control process that can be taken into account for FPC;

— the manufacturer using other party results accepts to remain responsible for the product having the declared performances and he also:

— ensures that the product has the same characteristics relevant for performance as the one that has been subjected to the determination of the product type, and that there are no significant differences with regard to production facilities and the production control process compared to that used for the product that was subjected to the determination of the product type; and

— keeps available a copy of the determination of the product type report that also contains the information needed for verifying that the product is manufactured according to the same design and with raw materials, constituents and manufacturing methods of the same kind.

6.3 Factory Production Control (FPC)

6.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market comply with the declared performance of the essential characteristics.

The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures.

This factory production control system documentation shall ensure a common understanding of the evaluation of the constancy of performance and enable the achievement of the required product performances and the effective operation of the production control system to be checked. Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the compliance of the product with the declared performances of the essential characteristics.

In case the manufacturer has used shared or cascading product type results, the FPC shall also include the appropriate documentation as foreseen in clause 6.2.4.

6.3.2 Requirements

6.3.2.1 General

The manufacturer is responsible for organizing the effective implementation of the FPC system in line with the content of this product standard. Tasks and responsibilities in the production control organization shall be documented and this documentation shall be kept up-to-date.

The responsibility, authority and the relationship between personnel that manages, performs or verifies work affecting product constancy , shall be defined. This applies in particular to personnel that need to initiate actions preventing product non-constancies from occurring, actions in case of non-constancies and to identify and register product constancy problems.

Personnel performing work affecting the constancy of performance of the product shall be competent on the basis of appropriate education, training, skills and experience for which records shall be maintained.

In each factory the manufacturer may delegate the action to a person having the necessary authority to:

— identify procedures to demonstrate constancy of performance of the product at appropriate stages;

— identify and record any instance of non-constancy;

— identify procedures to correct instances of non-constancy.

The manufacturer shall draw up and keep up-to-date documents defining the factory production control. The manufacturer's documentation and procedures should be appropriate to the product and manufacturing process. The FPC system should achieve an appropriate level of confidence in the constancy of performance of the product. This involves :

a) the preparation of documented procedures and instructions relating to factory production control operations, in accordance with the requirements of the technical specification to which reference is made;

b) the effective implementation of these procedures and instructions;

c) the recording of these operations and their results;

d) the use of these results to correct any deviations, repair the effects of such deviations, treat any resulting instances of non-conformity and, if necessary, revise the FPC to rectify the cause of non-constancy of performance.

Where subcontracting takes place, the manufacturer shall retain the overall control of the product and ensure that he receives all the information that is necessary to fulfill his responsibilities according to this European standard.

If the manufacturer has part of the product designed, manufactured, assembled, packed, processed and/or labeled by subcontracting, the FPC of the subcontractor may be taken into account, where appropriate for the product in question.

The manufacturer who subcontracts all of his activities may in no circumstances pass the above responsibilities on to a subcontractor.

NOTE Manufacturers having an FPC system, which complies with EN ISO 9001 standard and which addresses the provisions of the present European standard are considered as satisfying the FPC requirements of the Regulation (EU) No 305/2011.

6.3.2.2 Equipment

6.3.2.2.1 Testing

All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

6.3.2.2.2 Manufacturing

All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the manufacturing process. Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures and the records retained for the period defined in the manufacturer's FPC procedures.

6.3.2.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their compliance. In case supplied kit components are used, the constancy of performance system of the component shall be that given in the appropriate harmonized technical specification for that component.

6.3.2.4 Traceability and marking

Individual product batches shall be identifiable and traceable with regard to their production origin. The manufacturer shall have written procedures ensuring that processes related to affixing traceability codes and/or markings are inspected regularly.

6.3.2.5 Controls during manufacturing process

The manufacturer shall plan and carry out production under controlled conditions.

6.3.2.6 Product testing and evaluation

The manufacturer shall establish procedures to ensure that the stated values of the characteristics he declares are maintained. The characteristics, the test methods and the minimum frequency of control are specified in table 3.