SLOVENSKI STANDARD
SIST EN 17114:2019

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Ohranjanje kulturne dediščine - Zaščita površine poroznih anorganskih materialov - Tehnični in kemijski podatki o vodoodbojnih sredstvih

Conservation of cultural heritage - Surface protection for porous inorganic materials - Technical and chemical data sheets of water repellent product

Erhaltung des kulturellen Erbes - Oberflächenschutz für poröse anorganische Materialien - Technische und chemische Datenblätter von wasserabweisenden Produkten

Conservation du patrimoine culturel - Protection de surface des matériaux inorganiques poreux - Fiches de données techniques et chimiques des produits hydrofuges

Ta slovenski standard je istoveten z: **EN 17114:2018**

ICS:

97.195	Umetniški in obrtniški izdelki. Kulturne dobrine in kulturna dediščina	Items of art and handicrafts. Cultural property and heritage

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EUROPEAN STANDARD
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English Version

Conservation of cultural heritage - Surface protection for porous inorganic materials - Technical and chemical data sheets of water repellent product

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 17114:2018) has been prepared by Technical Committee CEN/TC 346 “Conservation of Cultural Heritage”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by May 2019 and conflicting national standards shall be withdrawn at the latest by May 2019.

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Introduction

This document indicates the chemical and physical characteristics, properties and performance meant to be reported in the technical data sheet of a water repellent product used for conservation work on porous inorganic materials in the field of Cultural Heritage.

The products covered by this standard are usually applied in a liquid state with the aim of imparting hydrophobic properties to the material on which they are applied. Some products also have additional functions (e.g. superficial consolidation, anti-graffiti, biocidal action, etc.).

The main goal of a water repellent is to reduce the penetration of water and aqueous solutions into porous material by modifying surface properties both externally and within the near surface area.

According to EN 16581, a water repellent should fulfil the following requirements:

a) reduce the absorption of liquid water into the material;

b) cause minimum change of water vapour permeability of the material;

c) cause minimum change in colour and gloss of the material;

d) produce no harmful by-products after application;

e) maintain its physical and chemical stability.

It is recommended to read the relevant safety data sheets on the occupational and health hazards of the main chemical constituents of the products before using them.

The manufacturer should also provide safety data sheets.

1 Scope

This document specifies the information contained in the technical data sheet of the product in order to allow a preliminary selection of the most suitable products to use in a specific case of intervention.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 15801, *Conservation of cultural property - Test methods - Determination of water absorption by capillarity*

EN 15802, *Conservation of cultural property - Test methods - Determination of static contact angle*

EN 15803, *Conservation of cultural property - Test methods - Determination of water vapour permeability (δp)*

EN 15886, *Conservation of cultural property - Test methods - Colour measurement of surfaces*

EN 16302, *Conservation of cultural heritage - Test methods - Measurement of water absorption by pipe method*

EN 16322, *Conservation of Cultural Heritage - Test methods - Determination of drying properties*

EN 16581, *Conservation of Cultural Heritage - Surface protection for porous inorganic materials - Laboratory test methods for the evaluation of the performance of water repellent products*

EN 17036, *Conservation of Cultural Heritage - Artificial ageing by simulated solar radiation of the surface of untreated or treated porous inorganic materials*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
porous inorganic material
material including natural stones, e.g. sandstone, limestone, marble, granites, gneiss, as well as artificial materials, such as mortar, plaster, gypsum, ceramics, brick and others

[SOURCE: EN 15801:2009, 3.1]

3.2
dry product
water repellent chemical present in the material in its final form; after the completion of the reactions / transformations (solvent evaporation, polymerization, cross-linking, etc.) leading to the development of water resistant characteristics

3.3
solution
clear monophasic system in the liquid state consisting of a solute uniformly distributed in a solvent

3.4
suspension
heterogeneous mixture of materials comprising a liquid and a finely dispersed solid material

[SOURCE: EN ISO 4618:2014, 2.246]

Note 1 to entry: Generally, it is cloudy and can have a solid residue in function of the quantity and size of the particles.

Note 2 to entry: It can contain additives to stabilize the system.

3.5
emulsion
finely dispersed mixture of at least two liquids which are insoluble, or only sparingly soluble, in each other

[SOURCE: EN ISO 4618:2014, 2.97]

4 Symbols and abbreviations

AC	capillary water absorption coefficient, in kg/(m² · s$^{1/2}$);
δ_p	water vapour permeability, in kg/(m · s · Pa);
$\delta_{p\ at}$	water vapour permeability after treatment , in kg/(m · s · Pa);
$\delta_{p\ bt}$	water vapour permeability before treatment, in kg/(m · s · Pa);
L*	lightness coordinate. The scale for L* ranges from 0 (black) to 100 (white);
a*	red/green coordinate, with +a* indicating redness and -a* indicating greenness;
b*	yellow/blue coordinate, with +b* indicating yellowness and -b* indicating blueness;
D	drying rate, in kg/(m²·h)
$D_{1\ at}$	drying rate corresponding to the first drying phase after the treatment, in kg/(m²·h)
$D_{1\ bt}$	drying rate corresponding to the first drying phase before the treatment in kg/(m²·h)
W_t	amount of absorbed water at low pressure, in ml/cm²
H_e	total radiant exposure, in MJ/m²
RH	relative humidity
FTIR	Fourier Transform Infrared Spectroscopy
SEM	Scanning Electron Microscopy
OM	Optical Microscopy
NMR	Nuclear Magnetic Resonance

5 Data required to be reported in the technical data sheet

5.1 Product identification

The following data or information should be reported, if applicable.

5.1.1 Product trade name.

5.1.2 Manufacturer.

5.1.3 Distribution company.

5.1.4 Primary Function; Hydrophobic.

Any additional functionality:

☐ consolidating

☐ anti graffiti

☐ biocide

☐ other (specify)……..

5.1.5 Physical state:

☐ liquid with no other substances

☐ solution (solute and solvent)

☐ suspension (solid particle suspended in fluid)

☐ emulsion (liquid droplets suspended in fluid)

☐ solid (e.g. powder, flakes, pellets, etc:)

☐ other (specify)……..

5.2 Chemical and physical properties of the product

5.2.1 General

The following data or information should be reported, if applicable.

☐ The product is supplied ready to use

☐ further preparation is required for application

☐ expiration date

Information shall be supplied as described in 5.2.2 to 5.2.6 and/or 5.3.