



SLOVENSKI STANDARD

SIST EN 1062-11:2003

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Barve in laki - Premazni materiali in premazni sistemi za zunanjo zaščito zidov in betona - 11. del: Postopki kondicioniranja pred preskušanjem

Paints and varnishes - Coating materials and coating systems for exterior masonry and concrete - Part 11: Methods of conditioning before testing

Beschichtungsstoffe - Beschichtungsstoffe und Beschichtungssysteme für mineralische Untergründe und Beton im Außenbereich - Teil 11: Verfahren zur Konditionierung vor der Prüfung

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Peintures et vernis - Produits de peinture et systèmes de revêtement pour maçonnerie et béton extérieurs - Partie 11: Méthodes de conditionnement avant essais

Ta slovenski standard je istoveten z: **EN 1062-11:2002**

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87.040 Barve in laki Paints and varnishes

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EUROPEAN STANDARD
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English version

**Paints and varnishes - Coating materials and coating systems
for exterior masonry and concrete - Part 11: Methods of
conditioning before testing**

Peintures et vernis - Produits de peinture et systèmes de
revêtement pour maçonnerie et béton extérieur - Partie 11:
Méthodes de conditionnement avant essais

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Beschichtungssysteme für mineralische Untergründe und
Beton im Außenbereich - Teil 11: Verfahren zur
Konditionierung vor der Prüfung

This European Standard was approved by CEN on 24 March 2002.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

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EN 1062-11:2002 (E)

Foreword

This document EN 1062-11:2002 has been prepared by Technical Committee CEN/TC 139 "Paints and varnishes", the secretariat of which is held by DIN.

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 January 2003, and conflicting national standards shall be withdrawn at the latest by January 2003.

This European Standard was prepared jointly by CEN/TC 139, Paints and varnishes (Secretariat: DIN Deutsches Institut für Normung e. V.) and CEN/TC 104/SC 8, Protection and repairs of concrete structures (Secretariat: DIN Deutsches Institut für Normung e. V.), after considerable preparatory work by CEN/TC 139/WG 1 "Coating systems for masonry" (Convenor: R. Michel, France) which had formed a Joint Group with CEN/TC 104/SC 8/WG 1 "Surface protection" (Convenor: Dr. R. Stenner, Germany).

EN 1062 consists of the following parts under the general title *Paints and varnishes – Coating materials and coating systems for exterior masonry and concrete*:

Part 1: Classification

Part 2: Determination and classification of water-vapour transmission rate (permeability)¹⁾

Part 3: Determination and classification of liquid-water transmission rate (permeability)

Part 6: Determination of carbon dioxide permeability

Part 7: Determination of crack-bridging properties – Test methods and classification

Part 11: Methods of conditioning before testing.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This is one of a number of Parts of EN 1062 dealing with test methods for coating materials and coating systems for exterior masonry and concrete. It should be read in conjunction with EN 1062-1.

Depending on location, surface slope and direction, building materials are subjected to changes of temperature and humidity as well as to UV radiation in different succession, duration and intensity. Due to the variation of these influences and their combinations it is reasonable to test the resistance to weather conditions of coatings for exterior masonry and concrete in order to confirm that they comply with particular requirements. The methods specified in this European Standard are suitable for conditioning before further testing and evaluation of the resistance of coatings to weather conditions.

1 Scope

This European Standard specifies four methods for the conditioning of test specimens which have been prepared for testing the resistance to weather conditions of coating materials and coating systems for exterior masonry and concrete.

The methods of conditioning specified make allowance of a wide range of weather conditions so that deviating methods of conditioning are required in exceptional cases only. Unless otherwise specified, for example in standards describing particular test methods, the method to be used should be agreed between the interested parties.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13687:2001, *Products and systems for the protection and repair of concrete structures – Test methods – Determination of thermal compatibility – Part 1: Freeze-thaw cycling with deicing salt immersion.*

EN 23270, *Paints and varnishes and their raw materials – Temperatures and humidities for conditioning and testing (ISO 3270:1984).*

¹⁾ Published as EN ISO 7783-2.

ISO 4628-2, *Paints and varnishes – Evaluation of degradation of paint coatings – Designation of intensity, quantity and size of common types of defect – Part 2: Designation of degree of blistering.*

ISO 4628-4, *Paints and varnishes – Evaluation of degradation of paint coatings – Designation of intensity, quantity and size of common types of defect – Part 4: Designation of degree of cracking.*

ISO 4628-5, *Paints and varnishes – Evaluation of degradation of paint coatings – Designation of intensity, quantity and size of common types of defect – Part 5: Designation of degree of flaking.*

prEN ISO 4628-7:2001, *Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes of appearance – Part 7: Assessment of degree of chalking by velvet method (ISO/DIS 4628-7:2001).*

EN ISO 11507, *Paints and varnishes – Exposure of coatings to artificial weathering – Exposure to fluorescent UV and water (ISO 11507:1997)*

3 Preparation of test specimens

Unless otherwise specified, apply the coating material or coating system to be tested to the substrate in accordance with the manufacturer's instructions and condition the coated specimens in the standard atmosphere as defined in EN 23270 [(23 ± 2) °C and (50 ± 5) % relative humidity] for 7 days. Then subject the test specimens to the specified or agreed method(s) of conditioning described in clause 4.

4 Methods of conditioning

4.1 Elevated temperature

Store the test specimens at a temperature of 70 °C for 7 days.

Afterwards, condition the test specimens in the standard atmosphere as defined in EN 23270 [(23 ± 2) °C and (50 ± 5) % relative humidity] for at least 24 h before carrying out further tests.

NOTE This method allows conclusions regarding the change of physical, chemical and mechanical properties of chemically reacting resins (thermosetting resins) which occur in the course of time, especially at higher temperatures. It should be used particularly for coating materials containing thermosetting resins in the binder.

4.2 UV radiation and humidity

Treat the test specimens in accordance with EN ISO 11507, lamp type 2 (UV-A), using a cycle of 4 h UV radiation and 4 h wetting without UV radiation for a total exposure duration of at least 1000 h before carrying out further tests.

Maintain the black panel temperature during the irradiation (dry) phase at (60 ± 3) °C for a time period of 4 h, unless otherwise agreed.

Maintain the black panel temperature during the wetting phase at (50 ± 3) °C for a time period of 4 h, unless otherwise agreed.

Afterwards, condition the test specimens in the standard atmosphere as defined in EN 23270 [(23 ± 2) °C and (50 ± 5) % relative humidity] for at least 24 h before carrying out further tests.

NOTE This method allows conclusions regarding degradation of the surface by changes of mechanical properties of coatings due to UV radiation. It is particularly suitable for coatings which react to UV radiation.

4.3 Water storage

Subject the test specimens to 3 cycles comprising the following conditions:

- 24 h storage in water (potable water) at (23 ± 2) °C;
- 24 h drying at (50 ± 2) °C.

If the coatings are thermoplastic at 50 °C, the test pieces shall be suspended and/or suitably placed in the oven, ensuring that they do not adhere to the parts of the oven and to each other.

During weekends, or interruption for other reasons, store the test specimens in the standard atmosphere as defined in EN 23270 [(23 ± 2) °C and (50 ± 5) % relative humidity].

Afterwards, condition the test specimens in the standard atmosphere as defined in EN 23270 [(23 ± 2) °C and (50 ± 5) % relative humidity] for at least 24 h before carrying out further tests.

EN 1062-11:2002 (E)

NOTE This method allows conclusions regarding changes of properties of coatings which occur during water exposure due to dissolution of water-soluble constituents. It is of particular importance for water-borne coating materials and those containing water-soluble constituents or reacting with humidity.

4.4 Freeze-thaw stresses

Subject the test specimens to 20 cycles as specified in prEN 13687:2001, method C, sub-clause b).

Afterwards, condition the test specimens in the standard atmosphere as defined in EN 23270 [(23 ± 2) °C and (50 ± 5) % relative humidity] for at least 24 h before carrying out further tests.

NOTE 1 This method allows conclusions regarding the behaviour of wet surfaces at temperatures below 0 °C when ice crystals are formed in water-filled cavities. It is of particular importance for porous materials and those of high water absorption which are mainly applied to surfaces subjected to heavy water stresses. Examples are horizontal surfaces, pedestals and curbs continually subjected to splash water.

NOTE 2 When using automatic equipment, the indicated times should be amended so that the specified temperatures are achieved, i.e. that finally the same test results will be obtained.

5 Assessment of test specimens after conditioning

After conditioning in accordance with the agreed method(s) (clause 4), assess the test specimens for blistering, cracking, flaking or chalking, following the methods described in ISO 4628-2, ISO 4628-4, ISO 4628-5 and prEN ISO 4628-7 respectively. When assessing chalking in accordance with prEN ISO 4628-7:2001, Table 1, use only ratings 0 (unchanged), 1 (very slight), 3 (moderate) and 5 (severe).

6 Test report

The test report shall contain at least the following information:

- a) all details necessary to identify the test specimens;
- b) a reference to this part of EN 1062 (EN 1062-11),
- c) the method of conditioning used as described in clause 4;
- d) the result of the assessment of the conditioned test specimens (see clause 5);
- e) the total exposure time used;
- f) any deviation from the methods specified;
- g) the date of assessment.

*) To be published.