



SLOVENSKI STANDARD

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Nadomešča:

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Barve in laki - Barve in laki za notranje zidove in stropove - Klasifikacija

Paints and varnishes - Paints and varnishes for interior walls and ceilings - Classification

Beschichtungsstoffe - Wasserhaltige Beschichtungsstoffe und Beschichtungssysteme für Wände und Decken im Innenbereich - Einteilung

Peintures et vernis - Peintures et vernis pour murs et plafonds intérieurs - Classification

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87.040

Barve in laki

Paints and varnishes

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EUROPEAN STANDARD

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Paints and varnishes - Paints and varnishes for interior walls and ceilings - Classification

Peintures et vernis - Peintures et vernis pour murs et plafonds intérieurs - Classification

Beschichtungsstoffe - Wasserhaltige Beschichtungsstoffe und Beschichtungssysteme für Wände und Decken im Innenbereich - Einteilung

This European Standard was approved by CEN on 16 October 2022.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

This document (EN 13300:2022) 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of an identical text or by endorsement, at the latest by May 2022, and conflicting national standards shall be withdrawn at the latest by May 2022.

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

This document supersedes EN 13300:2001.

In comparison with the previous edition, the following technical modifications have been made:

- Revision of normative references
- Revision of terms and definitions
- Changes in classification by specular gloss
- Changes in classification by granularity
- Introduction of uncertainty principle in wet scrub resistance classes
- Introduction of uncertainty principle in hiding power classes
- Introduction of cleanability

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document identifies criteria that need to be considered when assessing the suitability of a coating material for a particular end use and provides a framework for communicating this information between manufacturer and user. This should assist in the removal of technical barriers to trade. It is in the responsibility of the manufacturer of a coating material to designate the appropriate categories for end use and appearance.

The coating materials are assessed independently of the substrate to which the material is intended to be applied. Properties such as adhesion and texture that are dependent on the substrate have, therefore, not been included. Nevertheless, it is essential that the coating system adheres properly to its appropriately prepared substrate. It needs to maintain adhesion under normal conditions during its specified lifetime.

Where applicable, the characteristics of the complete coating system, including combination of materials, sequence and thickness of layers, method(s) of application, colour and opacity, should preferably be agreed between supplier, specifier, applicator and customer. Requirements for substrate preparation should also be specified and observed.

Coating thickness and texture are subject to the manufacturer's recommendations and are affected by the method of application, the properties of the substrate and the formulation. These factors affect many important properties of the coating system such as soiling resistance and general appearance.

Care shall be taken to apply the coating materials under suitable temperature and humidity conditions and to observe recommended drying times and overcoating intervals.

The coating should be recoatable at least by the same coating material. Full information should be provided in supplier's data sheets.

The classes defined in this document are not intended to represent a quality scale but shall enable a qualified choice of the suitable coating material for an individual purpose.

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1 Scope

This document specifies a general system for the classification of paints and varnishes, for interior walls and ceilings, for the decoration of new and old, coated and uncoated surfaces.

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 ISO 787-7, *General methods of test for pigments and extenders - Part 7: Determination of residue on sieve - Water method - Manual procedure (ISO 787-7)*

EN ISO 787-18, *General methods of test for pigments and extenders - Part 18: Determination of residue on sieve - Mechanical flushing procedure (ISO 787-18)*

EN ISO 1524, *Paints, varnishes and printing inks - Determination of fineness of grind (ISO 1524)*

EN ISO 2813, *Paints and varnishes - Determination of gloss value at 20°, 60° and 85° (ISO 2813)*

EN ISO 6504-3, *Paints and varnishes - Determination of hiding power - Part 3: Determination of hiding power of paints for masonry, concrete and interior use (ISO 6504-3)*

EN ISO 11998, *Paints and varnishes - Determination of wet-scrub resistance and cleanability of coatings (ISO 11998)*

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 <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

decoration

treatments with the primary objective to change or restore the appearance of the substrate

Note 1 to entry: Functions of these treatments are for example colour, gloss and texture etc.

3.2

paint

pigmented coating material which, when applied to a substrate, forms an opaque dried film having protective, decorative or specific technical properties

[SOURCE: EN ISO 4618:2014, definition 2.184]

3.3

varnish

transparent coating material

[SOURCE: EN ISO 4618:2014, definition 2.266 without Note 1 to entry]

4 Classification

4.1 General

Paints and varnishes for interior walls and ceilings shall be classified as specified from 4.2 to 4.7.

4.2 Classification by end use

Paints and varnishes for interior walls and ceilings shall be classified according two classes:

- a) decoration
- b) special properties

4.3 Classification by chemical type of binder

Classification by chemical type of binder shall be derived from that component of the binder which is decisive for the characteristic properties of the final coating system.

The chemical type of the binder should be given using, for example, the following terms:

- acrylic resin, vinyl resin, alkyd resin, epoxy resin
- hydraulic lime, cement, silicate

NOTE 1 This list of terms is not exhaustive to allow additional binders to be described as coating technology advances.

NOTE 2 The quality of an indoor coating material is not dependent solely on the binder types used. The amount of binder(s) and/or other constituents may be of greater importance.

4.4 Gloss

Classification by gloss shall be based on specular-gloss values at 60° or 85° when tested by the method described in EN ISO 2813, as shown in Table 1.

Table 1 — Classification by specular gloss

Designation	Angle of incidence	Gloss value
G1 Gloss	60 °	≥ 60
G2 Mid sheen ^a		
G2a	60 °	10 ≤ X < 60
G2b	60 °	< 10
	85 °	≥ 10
G3 Matt	85 °	5 < X < 10
G4 Dead-matt	85 °	≤ 5

^a See Note 3.

If the reflectance measured at 60° is below 10, the measurement shall be repeated at 85°. The value obtained at 85° determines the classification.

NOTE 1 In practice, the gloss level achieved will depend on the state and nature of the substrate.

NOTE 2 Gloss cannot be measured on textured surfaces of coatings of coarse granularity.

NOTE 3 According to the national preference, the designation of “mid sheen” can vary: e.g. semi-gloss, semi-matt, satin.

4.5 Largest grain size (granularity)

Classification by largest grain size shall be based on the size of the largest particles present in a significant amount to influence the texture of the coating system, by the following categories:

- a) S1 fine: up to 100 µm, determined in accordance with EN ISO 1524;
- b) S2 medium: up to 300 µm, determined in accordance with EN ISO 787-7 or EN ISO 787-18;
- c) S3 coarse: up to 1500 µm, determined in accordance with EN ISO 787-7 or EN ISO 787-18.

4.6 Wet scrub resistance

Classification by scrub resistance (see Table 2) shall be evaluated by measuring the resistance of the coating to repeated cleaning. It can only be measured on coatings of largest grain size (granularity) smaller than 100 µm applied to smooth, non-textured or coarse surfaces.

Table 2 — Classification by wet scrub resistance

R Class	Wet scrub resistance
1	≤ 5 µm at 200 scrubs
2	> 5 µm and ≤ 20 µm at 200 scrubs
3	> 20 µm and ≤ 70 µm at 200 scrubs
4	≤ 70 µm at 40 scrubs
5	> 70 µm at 40 scrubs

The test method described in EN ISO 11998 has an uncertainty as described in Table 3. This may cause the situation that test results of two or more identical samples of a coating material are classified in two different classes.

The class limits in this document are defined as follows:

- One test result according EN ISO 11998 is sufficient to classify a coating material according to Table 2.
- Repeated tests with deviating results are not a sufficient reason to challenge the classification if they do not deliver results that deviate from the class limit by more than the uncertainty as described in Table 3.

Table 3 — Uncertainty on wet scrub resistance classes

R Class limits	Class limits of wet scrub resistance	Uncertainty (95 % confidence interval) ^a
1-2	5 µm at 200 scrubs	1 µm
2-3	20 µm at 200 scrubs	4 µm
3-4	70 µm at 200 scrubs	15 µm
4-5	70 µm at 40 scrubs	15 µm

^a Higher limit of 95 % confidence interval calculated based on reproducibility and repeatability as given in EN ISO 11998.

The test results according to EN ISO 11998 strongly depend on the abrasive medium used in the test procedure. The limit values for the classes apply to the use of the abrasive medium as mentioned in EN ISO 11998. If a different abrasive medium is used, the classes according to Table 2 shall be referenced if sufficient comparability of the two abrasive media is proven by a suitable procedure.

4.7 Hiding power for white or light-coloured opaque paints

The hiding power of a coating is determined in accordance with the procedure described in EN ISO 6504-3. It is classified according to the value H_{10} as given in Table 4.

Table 4 — Classification by hiding power

H_{10} Class	Hiding power %
1	$\geq 99,5$
2	$98 \leq X < 99,5$
3	$95 \leq X < 98$
4	< 95

The test method described in EN ISO 6504-3 has an uncertainty as described in the Table 5. This may cause the situation that test results of two or more identical samples of a coating material are classified in two different classes.

The class limits in this standard are defined as follows:

- One test result according EN ISO 6504-3 is sufficient to classify a coating material according to Table 4.
- Repeated tests with deviating results are not a sufficient reason to challenge the classification if they do not deliver results that deviate from the class limit by more than the uncertainty as described in Table 5.