BRITISH STANDARD

BS EN
13300:2001

Paints and varnishes — Water-borne coating materials and coating systems for interior walls and ceilings — Classification

The European Standard EN 13300:2001 has the status of a British Standard

ICS 87.040

National foreword

This British Standard is the official English language version of EN 13300:2001.

The UK participation in its preparation was entrusted to Technical Committee STI/ 28, Paint systems for non-metallic substrates, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

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This British Standard, having been prepared under the direction of the Sector Committee for Materials and Chemicals, was published under the authority of the Standards Committee and comes into effect on 15 June 2001

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EN 13300

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English version

Paints and varnishes - Water-borne coating materials and coating systems for interior walls and ceilings - Classification

Peintures et vernis - Produits de peinture et systèmes de peinture en phase aqueuse 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 19 February 2001.

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.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 13300:2001 E

Contents

Foreword

This European Standard 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 October 2001, and conflicting national standards shall be withdrawn at the latest by October 2001.

Annex A is informative.

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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The names used today to describe coating materials and coating systems pay little regard to technical, functional and end use categories. This makes it difficult to devise an unequivocal simple terminology applicable to all product types. This European Standard attempts to address this problem by separately defining categories of appearance and end use, but with no assumptions as to whether or not a given product, by its appearance alone, will be suitable for a particular use. The objective is to avoid misuse of coating systems by the misunderstanding or over-statement of performance claims. The possibilities for future technical advances are recognized.

The treatment of interior surfaces has aesthetic and/or protective functions. The results of such treatments include the following:

– **decoration** of surfaces by changing or restoring their appearance;

– **protection** of the substrate against aesthetic and/or functional deterioration.

This European Standard identifies criteria that need to be considered when assessing the suitability of a coating system 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 system to designate the appropriate categories for end use and appearance.

1 Scope

This European Standard specifies a general system for the classification of water-borne coating materials and coating systems for the decoration and protection of interior walls and ceilings comprised of new and old, coated and uncoated surfaces.

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 to 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 last edition of the publication referred to applies (including amendments).

EN 971-1	1996	Paints and varnishes – Terms and definitions for coating materials – Part 1: General terms
EN 1062-1	1996	Paints and varnishes – Coating materials and coating systems for exterior masonry and concrete – Part 1: Classification
EN 21524		Paints and varnishes – Determination of fineness of grind (ISO 1524:1983)
EN ISO 787-18		General methods of test for pigments and extenders – Part 18: Determination of residue on sieve; Mechanical flushing procedure (ISO 787-18:1983)
EN ISO 2813		Paints and varnishes – Determination of specular gloss of non-metallic paint films at 20°, 60° and 85° (ISO 2813:1994, including Technical Corrigendum 1:1997)
ISO 787-7		General methods of test for pigments and extenders – Part 7: Determination of residue on sieve; Water method; Manual procedure
ISO 6504-3		Paints and varnishes – Determination of hiding power – Part 3: Determination of contrast ratio (opacity) of light-coloured paints at a fixed spreading rate
ISO 11998		Paints and varnishes – Determination of wet-scrub resistance and cleanability of coatings

3 Terms and definitions

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

3.1
coating material
product, in liquid or in paste or in powder form, that when applied to a substrate forms a film possessing protective, decorative and/or other specific properties [EN 971-1 : 1996]

3.2
coating system
total sum of the coats of coating materials which are to be applied or which have been applied to a substrate [EN 971-1 : 1996]

3.3
coating system for interior surfaces
coating system for the treatment of interior walls and ceilings

3.4
water-borne coating material
coating material, the binder of which is dispersed, dissolved or diluted in water

3.5
decoration
treatments with the primary objective to change or restore the appearance of the substrate. Functions of these treatments are colour, gloss and texture. They can also include protective functions. [EN 1062-1 : 1996]

3.6
protection
treatments with the primary objective to impart resistance to soiling, cleaning, fire, moisture, and biological, mechanical or chemical attacks. These treatments will also include decorative functions.

4 General classification

Coating materials and coating systems for interior walls and ceilings shall be classified as specified in 4.1 and 4.2.

4.1 Classification by end use

Classification by end use shall be as follows:

a) decoration;

b) special properties.

4.2 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 shall be given using, for example, the following terms:

– hydraulic lime, cement, silicate;

– acrylic resin, vinyl resin, alkyd resin, epoxy resin, copolymers.

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.

5 Additional classification

Coating materials and coating systems for interior walls and ceilings may additionally be classified as specified in 5.2 to 5.5.

5.1 Introduction

Additional properties and characteristics of coating systems for interior walls and ceilings are classified in 5.2 to 5.5. The coating systems 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 method(s) of application, colour and opacity, should preferably be agreed between supplier, specifier, applicator and customer. Requirements for substrate preparation shall 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.

To achieve an effective coating system, specifiers and users shall take note of recommendations for application regarding the use of the coating materials and special sealers and/or primers.

Care shall be taken to apply the material(s) under suitable temperature and humidity conditions and to observe recommended drying times and overcoating intervals.

The coating shall be recoatable at least by the same coating material.

Full information should be provided in supplier's data sheets.

The classes defined in this standard are not intended to represent a quality scale.

5.2 Gloss

Classsification 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	Reflectance
Gloss	60°	≥ 60
Mid sheen*)	60° 85°	< 60 ≥ 10
Matt	85°	< 10
Dead-matt	85°	< 5
*) See note 4.		

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 In the case where reflectance is below 5 at 85°, the term dead-matt can be used.

NOTE 3 Gloss cannot be measured on textured surfaces of coatings of coarse and very coarse granularity.

NOTE 4 According the national preference, the designation of "mid sheen" can vary: e.g. semi-gloss, semi-matt, satin.

5.3 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) fine: up to 100 µm, determined in accordance with EN 21524;

b) medium: up to 300 µm, determined in accordance with ISO 787-7 or EN ISO 787-18;

c) coarse: up to 1500 µm, determined in accordance with ISO 787-7 or EN ISO 787-18;

d) very coarse: above 1500 µm, determined in accordance with ISO 787-7 or EN ISO 787-18.

5.4 Wet scrub resistance

The wet scrub resistance evaluates 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.

The wet scrub resistance is determined in accordance with the procedure in ISO 11998 after a drying period of 28 days at (23 ± 2) °C and (50 ± 5) % relative humidity. It is classified according to the loss of thickness of the coat, as follows:

Class 1 < 5 µm at 200 scrubs

Class 2 ≥ 5 µm and < 20 µm at 200 scrubs

Class 3 ≥ 20 µm and < 70 µm at 200 scrubs

Class 4 < 70 µm at 40 scrubs

Class 5 ≥ 70 µm at 40 scrubs

All coatings according to this standard shall be recoatable with the same coating material.

5.5 Contrast ratio (opacity) for white or light coloured coating systems (optional)

The coating material will be applied to a standardized surface at the average spreading rate recommended by the manufacturer. The contrast ratio Y_b/Y_w is measured in accordance with ISO 6504-3.

Class 1 ≥ 99,5

Class 2 ≥ 98 and < 99,5

Class 3 ≥ 95 and < 98

Class 4 < 95

The classes shall be given together with the spreading rate, in square metres per litre, at which the measurement is performed.

Annex A (informative)

Other criteria

Other criteria can be used to characterise the coating materials and coating systems, for example:

– Resistance to soiling;

– Fungal and algal resistance;

– Wet adhesion;

– Resistance to mud cracking;

– Ease of decontamination;

– Cleanability;

– Organic solvent/co-solvent content.

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London
W4 4AL