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Vitreous and porcelain enamels – Terminology – Part 1: Terms and definitions (ISO 19496-1:2017)



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Denna standard ersätter SS-EN 15826:2009, utgåva 1.

The European Standard EN ISO 19496-1:2017 has the status of a Swedish Standard. This document contains the official version of EN ISO 19496-1:2017.

This standard supersedes the Swedish Standard SS-EN 15826:2009, edition 1.

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EUROPEAN STANDARD

EN ISO 19496-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2017

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Supersedes EN 15826:2009

English Version

Vitreous and porcelain enamels - Terminology - Part 1: Terms and definitions (ISO 19496-1:2017)

Emaux vitrifiés - Terminologie - Partie 1: Termes et
définitions (ISO 19496-1:2017)

Emails und Emaillierungen - Terminologie - Teil 1:
Begriffe (ISO 19496-1:2017)

This European Standard was approved by CEN on 8 March 2017.

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European foreword

This document (EN ISO 19496-1:2017) has been prepared by Technical Committee ISO/TC 107 “Metallic and other inorganic coatings” in collaboration with Technical Committee CEN/TC 262 “Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys” the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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Endorsement notice

The text of ISO 19496-1:2017 has been approved by CEN as EN ISO 19496-1:2017 without any modification.

Vitreous and porcelain enamels — Terminology —

Part 1: Terms and definitions

1 Scope

This document defines a number of terms relating to vitreous and porcelain enamels and their technology. This list is not complete and only comprises those terms for which the definition is considered necessary for correct and adequate understanding in order to clarify these processes.

The interpretations given are those corresponding to the practical usage in this field and they do not necessarily coincide with those used in other fields.

For purposes of clarification, the term “vitreous enamel”, used throughout this document, is synonymous with “porcelain enamel”, the term favoured in the United States and some other countries.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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>

NOTE [Annex A](#) lists alternative terms and cross refers to primary terms used below.

3.1

abrasive blasting

process for *cleaning* ([3.44](#)) or finishing by means of an abrasive directed at high velocity against the work piece

3.2

abrasion resistance

degree of resistance of *vitreous enamel* ([3.255](#)) to be abraded by solid materials

3.3

acid resistance

degree of resistance of *vitreous enamel* ([3.255](#)) to attack by acidic corrosive chemicals

3.4

adherence adhesion

<enamel-metallic substrate> degree of bonding between the fused *vitreous enamel* ([3.255](#)) and the metallic substrate

3.5

adherence of powder

ability of a vitreous enamel powder to remain attached by static attraction to a grounded *substrate* ([3.242](#)) before *firing* ([3.111](#))

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3.6

ageing

change in properties of vitreous enamel slips, powders, reagents, or steel with the lapse of time

3.7

air seal

air curtain

flow of pressurized air across the entrance and exit of a *continuous furnace* (3.53) that prevents heat escaping from the furnace but allows ware to pass through

3.8

alkali degreasing

removal of oil, grease, lubricants, and loose debris from the surface of the metallic substrate by immersion or spraying with an aqueous alkali degreaser in preparation for *vitreous enamelling* (3.256)

3.9

alkali resistance

degree of resistance of *vitreous enamel* (3.255) to attack by alkaline corrosive mediums

3.10

aluminium enamel

vitreous enamel (3.255) specifically formulated for application on aluminium substrates

3.11

anneal

annealing

thermal treatment of metals generally made by controlled heating and subsequent cooling

Note 1 to entry: Raw castings are heated in the range from 650 °C to 950 °C to relieve stresses and strains, burn off grease and in some cases to change the structure of the iron and in so doing improve the castings condition prior to coating with vitreous enamel.

3.12

anti-scale compound

agent that is applied to furnace tooling and other items to protect them from *scaling* (3.210) during *firing* (3.111)

3.13

back emission

back ionization

<electrostatic powder> defect often with the appearance of localized, very heavy *orange peel* (3.160), due to excessive charge build-up in the powder film resulting in electrical breakdown of air (i.e. back emission)

Note 1 to entry: The effect of the self-limiting characteristics of the electrostatic powder during application.

3.14

ball mill

ceramic or ceramic-lined rotating cylinder in which vitreous enamel materials are either wet or dry ground, generally using alumina, porcelain or steatite balls as grinding media

3.15

batch smelter

discontinuous smelter

smelter which is charged, fired, and discharged according to a predetermined periodic cycle

3.16

bead

defect resulting from accumulation of *vitreous enamel* (3.255) usually at the point where the enamel drains off the ware in *dipping* (3.78) (3.79)

3.17**beading****rim enamelling**

application of ridge of *vitreous enamel* ([3.255](#)) along the edge or rim of ware

3.18**beading enamel****rim enamel**

vitreous enamel ([3.255](#)) specifically formulated for *beading* ([3.17](#))

3.19**biocide**

anti-bacterial agent used to inhibit fermentation of organic *mill additions* ([3.150](#)) such as gums

3.20**bisque**

dry unfired vitreous enamel coating

3.21**black specks**

defect that appears as black particles at the surface of vitreous enamel coating

Note 1 to entry: See *boiling* ([3.26](#)) and *carbon boil* ([3.34](#)).

Note 2 to entry: This can be the result of reaction with the substrate or with contamination on the substrate surface.

3.22**blank**

sized piece of untreated metal sheet that will be used in forming the finished article

3.23**blasting**

process whereby solid metallic, mineral, synthetic resin, vegetable particles or water are projected at high velocity against a work piece for the purpose of *cleaning* ([3.44](#)), abrading or shot peening the surface

3.24**blister**

defect that appears as a localized bubble under the surface of the fired *vitreous enamel* ([3.255](#))

3.25**bloom**

visual exudation or efflorescence on the vitreous enamel surface

Note 1 to entry: See *scumming* ([3.212](#)).

3.26**boiling**

defect resembling areas of *ground-coat* ([3.135](#)) pull-through, *blisters* ([3.24](#)) and *pinholes* ([3.169](#)), visible after first cover-coat fire

Note 1 to entry: See *carbon boil* ([3.34](#)) and *black specks* ([3.21](#)).

Note 2 to entry: This can be the result of excessive ground-coat activity during cover-coat fire, as the ground-coat boils up through the cover-coat it may be accompanied by a release of gases.

3.27**bolt-hole brush**

specially-designed round brush used to remove vitreous enamel bisque from in and around small openings in the ware