

SLOVENSKI STANDARD

oSIST prEN ISO 4618:2022

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Barve in laki - Slovar (ISO/DIS 4618:2022)

Paints and varnishes - Vocabulary (ISO/DIS 4618:2022)

Beschichtungsstoffe - Begriffe (ISO/DIS 4618:2022)

Peintures et vernis - Vocabulaire (ISO/DIS 4618:2022)

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Paints and varnishes — Vocabulary

ICS: 87.040; 01.040.87

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*.

This third edition cancels and replaces the second edition (ISO 4618:2014), which has been technically revised.

The main changes are as follows:

- the title has been changed from “Terms and definitions” to “Vocabulary”;
- the following terms have been added: brush marks, cold checking, creeping, distinctness of image, DOI, drawdown blade, film applicator, dry spray, sheariness, clouding, holiday, nanocomposite coating, nanoparticle, primary particle, single particle, pigment binder ratio, semi-volatile organic compound, SVOC, semi-volatile organic compound content, SVOC content, SVOCC;
- the following terms have been deleted: after tack, blast cleaning, bubbling, chemical pretreatment, cutting in, electrostatic spraying, flash point, flocculation, flow properties, graining, marbling, rheopexy, rheoplectic behaviour, shear-thickening flow behaviour, dilatant flow behaviour, shear-thinning flow behaviour, pseudoplastic flow behaviour, sheen, thixotropy, thixotropic behaviour, viscoelasticity, viscosity, yield point, yield stress, yield value;
- many definitions have been amended;
- the text has been editorially revised and the normative references have been updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Paints and varnishes — Vocabulary

1 Scope

This document defines terms used in the field of coating materials (paints, varnishes and raw materials for paints and varnishes).

Terms relating to specific applications and properties are dealt with in standards concerning those applications and properties, e.g. corrosion protection (see ISO 12944), coating powders (see ISO 8130-14), electro-deposition coatings (see ISO 22553-1) and rheology (see ISO 3219-1).

Terms on nanotechnologies are harmonized with ISO/TS 80004-4.

Terms on pigments and extenders are harmonized with ISO 18451-1.

In addition to terms in English and French (two of the three official ISO languages), this document gives the equivalent terms in German; these are published under the responsibility of the member body for Germany (DIN). However, only the terms and definitions given in the official languages can be considered as ISO terms and definitions.

NOTE Those terms that are defined elsewhere in this International Standard are shown in *italics*.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

3.1.1

abrasion

<testing of coatings> process of removing matter or deformation of a surface by friction as a result of rubbing

3.1.2

abrasion

<surface preparation> process of removing matter in the surface as a result of friction or impact

3.2

accelerator

additive to increase the speed of chemical reactions

3.3

acid value

mass in milligrams of potassium hydroxide (KOH) required to neutralize 1 g of a sample under specified test conditions

3.4

acrylic resin

synthetic resin resulting from the polymerization or copolymerization of acrylic and/or methacrylic monomers, frequently together with other monomers

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3.5**additive**

substance, which, when added in small quantities to a coating material, improves or modifies one or more properties

Note 1 to entry: A surfactant or surface-active agent is an additive that has the fundamental property of reducing the interfacial tension between a solid and liquid or a liquid and air.

3.6**adhesion**

phenomenon of attachment at the interface between a solid surface and another material caused by molecular forces

Note 1 to entry: Adhesion should not be confused with cohesion.

3.7**adhesive strength**

force required to detach a coating from a substrate or another coating

3.8**aerosol**

solid or liquid particles in dispersion in a gaseous medium

3.9**ageing**

change of one or more initial properties of a coating during the passage of time

3.10**alkyd resin**

synthetic resin resulting from the polycondensation of fatty acids (or oils) and carbonic acids with polyols

3.11**amino resin**

synthetic resin resulting from the condensation of urea or melamine or derivatives such as benzo-guanamine with formaldehyde

Note 1 to entry: These resins are often etherified with alcohols.

3.12**anti-blocking agent**

additive that usually rises to the surface during the drying process and thus prevents blocking

3.13**anti-foaming agent**

additive that prevents foaming or reduces the foaming tendency of a coating material

Note 1 to entry: See also defoaming agent.

3.14.1**anti-fouling paint**

<marine> coating material applied on a marine structure to prevent the accumulation of fouling or biological growth

3.14.2**antifouling paint**

<buildings> coating material applied on buildings to prevent dirt pick-up or biological growth

3.15**anti-settling agent**

additive that prevents or retards the settling of pigments and/or extenders during storage of a coating material

3.16**anti-skinning agent**

additive that prevents or retards skinning caused by oxidation during storage

3.17**apparent density**

ratio between the mass and the volume of a non-tamped powder

Note 1 to entry: See also bulk density and tamped density.

3.18**appearance**

visual characteristics of a surface

Note 1 to entry: Appearance is not a single measure or a general property of a material. It is not characterized by a single parameter but a combination of colour, gloss, distinctness of image (DOI), haze, surface structure, texture, orange peel, etc.

Note 2 to entry: The word appearance has no special paint related meaning but is included here for clarification for non-English speakers.

3.19**application rate**

quantity of a coating material that is required to produce, under defined working conditions, a dry film or coat of given thickness on unit area

3.20**barrier coating material**

coating material used to isolate a coating system from the substrate to which it is applied, in order to prevent chemical or physical interaction, e.g. to prevent bleeding or migration from an underlying coat or substrate

Note 1 to entry: The German term "Isoliermittel" which is still currently used should be avoided, in order to prevent confusion with heat- and sound-deadening materials as well as with electrical insulators.

3.21**binder**

non-volatile part of a medium

Note 1 to entry: The main purpose of the binder is to build-up a network around the coating component.

3.22**biocide**

additive added to a coating material to prevent organisms responsible for microbiological degradation from attacking a substrate, a coating material or a film thereof

3.23**blast-cleaning**

impingement of a kinetic-energy stream of an abrasive on the surface to be prepared

3.24**bleeding (verb)**

migration of a coloured substance from a material into another material in contact with it, which could produce an undesirable staining or discoloration

Note 1 to entry: The substance could be a constituent of the coating or of the substrate to which the coating is applied.

3.25**blister**

convex deformation in a coating, arising from local detachment of one or more of the constituent coats

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3.26**blocking**

unwanted adhesion between two surfaces, at least one of which has been coated, when they are left in contact under load after a given drying period

3.27**blooming** (verb)

migration of a substance to form a deposit on the coating surface

Note 1 to entry: Blooming could occur when the amount of condensate causes soluble compounds to migrate from the body of the coating to the coating surface.

Note 2 to entry: The substance could be a constituent of the coating or of the substrate to which the coating is applied.

3.28**blushing** (noun)

optical property of a transparent or translucent film that gives a milky appearance or tint, with iridescent reflections reminiscent of opal, due to the deposition of moisture from the air and/or precipitation of one or more of the solid constituents of the lacquer

3.29**brightness**

combination of the lightness and colour intensity of a material

Note 1 to entry: Brightness is most commonly expressed numerically by the tristimulus value Y.

3.30**brittleness**

condition whereby a film or coat has such poor flexibility that it disintegrates easily into small fragments

3.31**bronzing**

change in the colour of the surface of a film giving the appearance of aged bronze

3.32**brush marks**

ridges remaining in a dry coat after brush application

3.33**bubble**

closed or open spherical cavity trapped in a coating, often caused by evaporating solvents

3.34**bulk density**

ratio of mass to volume of a powder when poured gently under specified conditions

Note 1 to entry: The value of the bulk density depends to a large extent on the method of measurement used and the manner in which it is carried out.

Note 2 to entry: See also tamped density.

3.35**burning off**

process in which the coating is changed by heat and then removed

3.36**chalking**

surface change in the form of a loosely adherent powder which appears with degradation of a coating

3.37**checking**

form of fine cracks which do not penetrate to the substrate distributed over the surface of a dry film or coat in a more or less regular pattern,

Note 1 to entry: An example of checking is shown in [Figure 1](#).



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Figure 1 — Checking

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3.38**chipping**

removal, in flakes, of a coating or rust or mill scale by use of hand or power tools

3.39**chlorinated rubber**

polymeric material resulting from the action of chlorine on natural and/or synthetic rubber

3.40**cissing**

appearance in a coating of areas of non-uniform thickness which vary in extent and distribution

3.41**coalescing agent**

additive added to a coating material based on a polymer dispersion to facilitate film formation

3.42**coat**

continuous layer of a coating material resulting from a single application

Note 1 to entry: In some industries the word “coat” is used interchangeably with “film”.

3.43.1**coating (noun)**

layer formed from a single or multiple coats of one specific coating material to a substrate

3.43.2**coating (verb)**

process of applying a coat

Note 1 to entry: The use of the term “coating” for “coating material” is deprecated.

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3.44**coating material**

product, in liquid, paste or powder form, that, when applied to a substrate, forms a layer possessing protective, decorative and/or other specific properties

3.45**coating powder**

coating material in powder form which, after fusing and possibly curing, gives a continuous coat

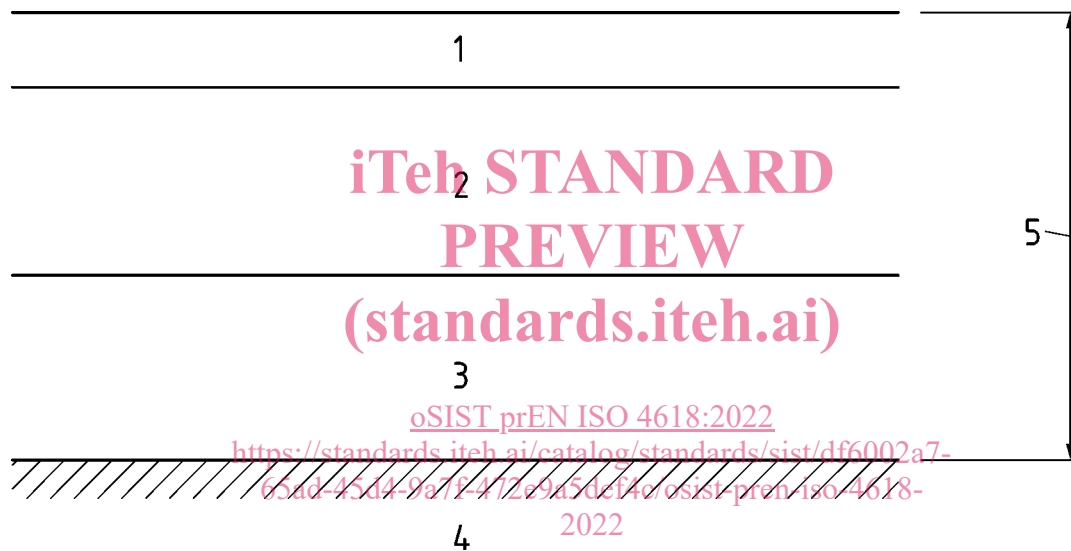
3.46**coating process**

application of a coating material to a substrate

3.47**coating system**

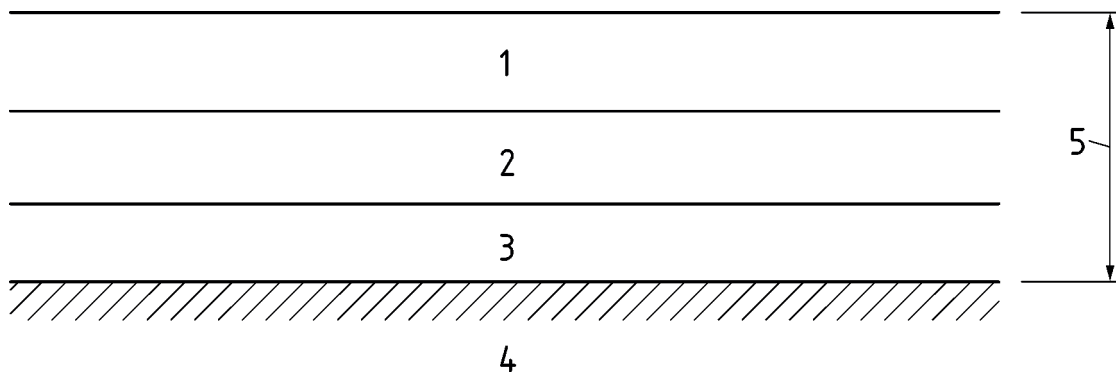
layer combined of all coats of the same or multiple coating materials

Note 1 to entry: Examples of a multiple coating systems are shown in [Figure 2](#) and [Figure 3](#).

**Key**

- 1 coat A
- 2 coating B
- 3 coating C
- 4 substrate
- 5 coating system

Figure 2 — Example of a coating system consisting coat A + coat B + coat C

**Key**

- 1 coat A
- 2 coat A
- 3 coat A
- 4 substrate
- 5 coating A

Figure 3 — Example of a coating system of coats of the same coating material, being coating A consisting 3 coats of coating material A

3.48 cohesion

internal forces that hold molecules together in a film or coat

Note 1 to entry: Cohesion should not be confused with adhesion.

3.49 coil coating

coating process whereby the coating material is applied continuously to a coil of metal which may be rewound after the film has been dried

3.50 cold cracking cold checking

formation of cracks or checks in a film resulting from exposure to low temperatures

3.51 colour

sensation resulting from the visual perception of light of a given spectral composition by the human eye

Note 1 to entry: The use of the German word “Farbe” alone, i.e. not in combinations of words, for coating materials is deprecated.

Note 2 to entry: A colour is characterized by hue, saturation or chroma, and lightness.

3.52 colour retention

degree of permanence of a colour

Note 1 to entry: Colour retention can be influenced by weathering.

3.53 colouring material

any substance that confers colour to other materials

Note 1 to entry: Colouring materials comprise pigments that are insoluble in the application medium as well as dyestuffs that are soluble in the application medium.

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3.54.1**compatibility**

<of materials> ability of two or more materials to be mixed together without causing undesirable effects

3.54.2**compatibility**

<of a coating material with the substrate> ability of a coating material to be applied to a substrate without causing undesirable effects

3.55**consistency****body**

subjectively assessed flow behaviour of a coating material when applying a shear force

3.56**contrast ratio**

ratio of the reflectance of a coating material applied under specified conditions over a black surface to the reflectance of the same thickness of this coating material applied over a white surface

3.57**corrosion**

physicochemical interaction between a metal and its environment which results in changes in the properties of the metal and which may often lead to impairment of the function of the metal, the environment or the technical system of which these form a part

Note 1 to entry: This interaction is often of an electrochemically nature.

[SOURCE: ISO 8044:2020, 3.1]

3.58**cracking**

rupturing of a dry film, coat or coating system

Note 1 to entry: The English term "cracking" is also used for a specific form of cracking illustrated in [Figure 4](#).

Note 2 to entry: Crocodiling and crow's foot cracking are examples of forms of cracking.

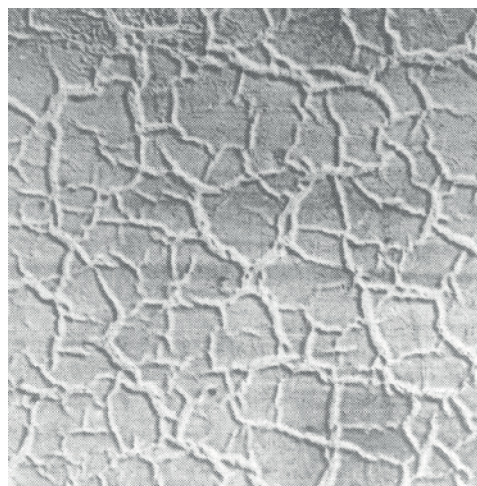


Figure 4 — Cracking

3.59**crater**

small depressions in a film or coat that persist after drying

Note 1 to entry: Examples of craters are shown in [Figure 5](#) and [Figure 6](#).



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Figure 5 — Crater — Top view

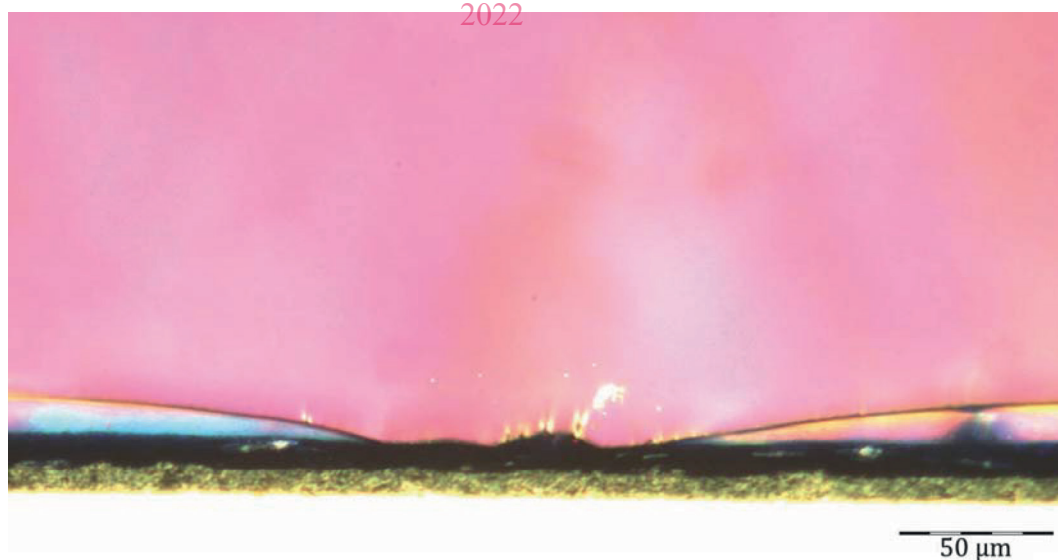


Figure 6 — Crater 2 — Cross-section

Note 2 to entry: Craters can extend into preceding layers of coating or to the substrate.