SRI LANKA STANDARD 1541 : 2016

ISO 4618 : 2014

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TERMS AND DEFINITIONS FOR PAINTS AND VARNISHES

SRI LANKA STANDARDS INSTITUTION

Sri Lanka Standard
TERMS AND DEFINITIONS FOR PAINTS AND VARNISHES

SLS 1541 : 2016
ISO 4618 : 2014

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Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

Sri Lanka Standard
TERMS AND DEFINITIONS FOR PAINTS AND VARNISHES

NATIONAL FOREWORD

This Sri Lanka Standard was approved by the Sectoral Committee on Chemical and Polymer Technology and authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2016-10-27.

SLS 489 : 1980 Glossary of terms for paints was intended to cover commonly used terms in the Sri Lankan paint Industry. However the International Standard ISO 4618 : 2014 defines the terms relating to specific applications and properties in the field of coating materials. The text of the International Standard ISO 4618:2014 Paints and varnishes - Terms and definitions has been accepted for adoption as a Sri Lanka Standard. In order to avoid any ambiguity, it is necessary to refer to the terms and definitions used in the International Standard, wherever applicable

This Sri Lanka Standard is identical with ISO 4618 : 2014 Paints and varnishes – Terms and definitions published by the International Organization for Standardization (ISO).

TERMINOLOGY AND CONVENTIONS

The text of the International Standard has been accepted as suitable for publication, without deviation, as a Sri Lanka Standard. However, certain terminology and conventions are not identical with those used in Sri Lanka Standards. Attention is therefore drawn to the following:

a) Wherever the words “International Standard” appear referring to a particular Standards they should be interpreted as “Sri Lanka Standard”.

b) Wherever page numbers are quoted, they are ISO page numbers.

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SLS 1541:2016

INTERNATIONAL STANDARD

NORME INTERNATIONALE

ISO 4618

Second edition
Deuxième édition
2014-10-15

Paints and varnishes — Terms and definitions

Peintures et vernis — Termes et définitions

Beschichtungsstoffe — Begriffe

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

The committee responsible for this document is ISO/TC 35, *Paints and varnishes*.

This second edition cancels and replaces the first edition (ISO 4618:2006), which has been technically revised.

The main changes are listed below.

a) The following terms have been added: abrasion, aerosol, appearance, bubble, colour retention, dispersion, effect pigment, emulsion, functional pigment, nanoaerosol, nanocoating, nanodispersion, nanoemulsion, nanoextender, nanofilm, nano-object, nanopigment, nanoscale, nanostructured coating, nanosuspension, nanotexture, non-volatile matter by volume, overcoatability, performance, pourability (changed from flowability), reflow effect, rheopexy/rheopectic behaviour, rust back (synonym for flash rust), rust bloom, scratch, scribe, shear-thickening flow behaviour/dilatant flow behaviour, shear-thinning flow behaviour/pseudoplastic flow behaviour, surface structure, suspension, texture, thixotropy/thixotropic behaviour, viscoelasticity, viscosity, yield point/yield stress/yield value.

b) The following terms have been amended: adhesive strength, ageing, agglomerate, aggregate, airless spraying, anti-foaming agent, anti-fouling paint, application rate, barrier coating material, bleeding, binder, biocide, blistering (replaced by blister), blooming, brightness, chalking, coat, coating, coating material, coating process, cohesion, colour, colouring material, consistency/body, corrosion, cracking, cratering, crocodiling, crow's foot cracking, defoaming agent, de-nibbing, dirt pick-up, dirt retention, drying, durability, dyestuff, elasticity, etching, extender, feather edging, feeding, filler, filling, film, film formation, flash point, flexibility, floating, flooding, flow, flow agent, hardness, hiding power, holiday, hot spraying, hydrocarbon resin, impregnating material, in-can preservative, lap, leafing, mar resistance (changed to mar), masking, metamerism, non-volatile matter, paint, pigment, polymer dispersion, pot life, preparation grade, recoatability, resin, run, rust grade, sag, sagging, sheen, shelf life, shop primer, stopper, synthetic resin, thixotropic agent/thixotrope, varnish.

c) The following terms have been deleted: blast primer, chromating, emulsion paint/latex paint, coverage (as synonym for hiding power), flowability (changed to pourability), hair cracking, opacity (as synonym for hiding power), high solids, miss (as synonym for holiday).

INTERNATIONAL STANDARD **ISO 4618:2014(E/F)**

Paints and varnishes — Terms and definitions

1 Scope

This International Standard 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, coating powders.

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

In addition to terms in English and French (two of the three official ISO languages), this International Standard 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 1 Those terms that are defined elsewhere in this International Standard are shown in *italics*.

NOTE 2 See also the ISO online browsing platform (OBP): https://www.iso.org/obp/ui/

2 Terms and definitions

2.1
abrasion
process of wearing away or deformation of a surface by friction as a result of rubbing

2.2
abrasive blast-cleaning
impingement of a high-kinetic-energy stream of an abrasive on the surface to be prepared

2.3
accelerator
additive that increases the speed of chemical reactions

2.4
acid value
number of milligrams of potassium hydroxide (KOH) required to neutralize 1 g of a sample under specified test conditions

2.5
acrylic resin
synthetic resin resulting from the polymerization or copolymerization of acrylic and/or methacrylic monomers, frequently together with other monomers

2.6
additive
any substance, added in small quantities to a *coating material*, to improve or otherwise modify one or more properties

2.7
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*.

2.8
adhesive strength
force required to detach a *coating* from a *substrate* or another coating

2.9
aerosol
solid or liquid particles in dispersion in a gaseous medium

2.10
after tack
property of a *film* to remain sticky after normal drying or curing

2.11
ageing
change of one or more initial properties of a *film* during the passage of time

2.12
agglomerate
collection of weakly bound particles or aggregates or mixtures of the two where the resulting external surface area is similar to the sum of the surface areas of the individual components

Note 1 to entry: The force applied to the *aggregates/agglomerates* during the paint making process can differ, depending on the method used.

2.13
aggregate
particle comprising strongly bonded or fused particles where the resulting external surface area may be significantly smaller than the sum of calculated surface areas of the individual components

Note 1 to entry: The force applied to the *aggregates/agglomerates* during the paint making process can differ, depending on the method used.

2.14
airless spraying
process of application of *coating material* by forcing it through an orifice at high pressure without air supply

2.15
alkyd resin
synthetic resin resulting from the polycondensation of fatty acids (or oils) and carbonic acids with polyols

2.16
amino resin
synthetic resin resulting from the condensation of urea or melamine or derivatives such as benzoguanamine with formaldehyde

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

2.17
anti-blocking agent
additive that usually rises to the surface during the drying process and thus prevents *blocking*

2.18
anti-foaming agent
additive that prevents foaming or reduces the foaming tendency of a *coating material*

Note 1 to entry: See also *defoaming agent*.

2.19
anti-fouling paint
coating material applied to the underwater sections of a ship's hull or to other underwater structures to discourage biological growth

2.20
anti-settling agent
additive that prevents or retards the *settling* of *pigments* and/or *extenders* during storage of a *coating material*

2.21
anti-skinning agent
additive that prevents or retards *skinning* caused by oxidation during storage

2.22
apparent density
ratio of mass to volume of an untamped powder

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

2.23
appearance
visual characteristics of a surface

Note 1 to entry: This includes *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 in English but is included here for clarification for non-English speakers.

2.24
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

Note 1 to entry: It is expressed in l/m^2 or kg/m^2.

Note 2 to entry: See also *spreading rate*.

2.25
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.

2.26
binder
non-volatile part of a *medium*

2.27
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

2.28
bleeding
migration of a coloured substance from a material into another material in contact with it, which could produce an undesirable staining or discoloration

2.29
blister
convex deformation in a *film*, arising from local detachment of one or more of the constituent *coats*

2.30
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

2.31
blooming
migration of a substance to form a deposit on the coating surface

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

2.32
blushing
milky opalescence that sometimes develops as a *film* of lacquer dries, and is due to the deposition of moisture from the air and/or precipitation of one or more of the solid constituents of the lacquer

2.33
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*.

2.34
brittleness
condition whereby a *film* or *coat* has such poor *flexibility* that it disintegrates easily into small fragments

2.35
bronzing
change in the *colour* of the surface of a *film* giving the *appearance* of aged bronze

2.36
brush-drag
resistance encountered when applying a *coating material* by brush, related to its high-shear viscosity

2.37
bubble
closed or open spherical cavity trapped in a *paint* layer, often caused by evaporating *solvents*

2.38
bubbling
formation of temporary or permanent *bubbles* in an applied film

2.39
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*.

2.40
burning off
removal of a *coating* by a process in which the *film* is softened by heat and then scraped off while still soft

2.41
chalking
appearance of a loosely adherent powder on the surface of a *film* or *coat* arising from the degradation of one or more of its constituents

2.42
checking
form of *cracking* characterized by fine cracks 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.

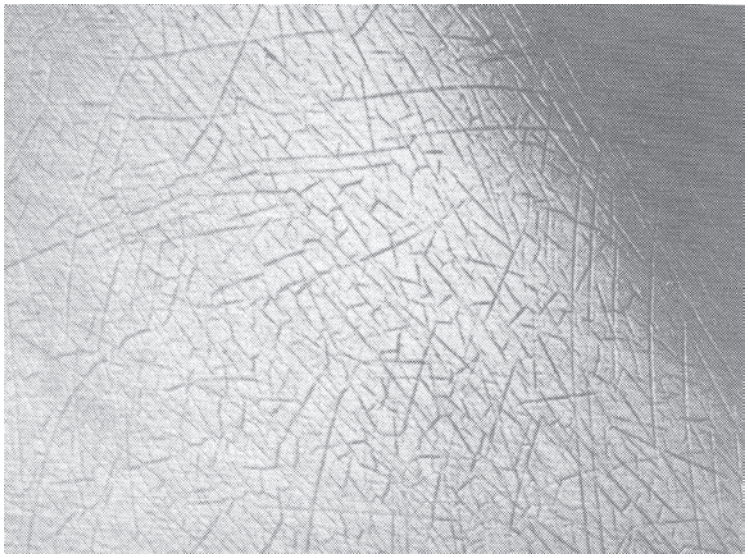

Figure 1 — Checking

2.43
chemical pre-treatment
any chemical process applied to a surface prior to the application of a *coating material*

Note 1 to entry: See e.g. *phosphating*.

2.44
chipping
removal, in flakes, of a *coating* or rust and *mill scale* by use of hand or power tools

2.45
chlorinated rubber
polymeric material resulting from the action of chlorine on natural and/or synthetic rubber

2.46
cissing
appearance in a *film* of areas of non-uniform thickness which vary in extent and distribution

2.47
clear coating material
coating material which when applied to a *substrate* forms a solid transparent *film* having protective, decorative or specific technical properties

Note 1 to entry: See also *varnish*.

2.48
coalescing agent
additive added to a *coating material* based on a polymer dispersion to facilitate *film formation*

2.49
coat
layer of a *coating material* resulting from a single application

Note 1 to entry: For fillers the word "coat" is used instead of "film".

2.50.1
coating
layer formed from a single or multiple application of a *coating material* to a *substrate*

2.50.2
coating
process of applying a coat

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

2.51
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

Note 1 to entry: The German term "Beschichtungsstoff" includes the terms "Lack", "Anstrichstoff" and such for similar products.

2.52
coating powder
coating material in powder form which, after fusing and possibly *curing*, gives a continuous *film*

2.53
coating process
method of application of a *coating material* to a *substrate*

2.54
coating system
combination of all *coats* of *coating materials* which are to be applied or which have been applied to a *substrate*

Note 1 to entry: The actual system can be characterized by the number of coats involved.

Note 2 to entry: See also *coating*.

2.55
cohesion
forces that bind a *film* or *coat* into an integral entity

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

2.56
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

2.57
cold cracking
formation of cracks in a *film* resulting from exposure to low temperatures

2.58
colour
sensation resulting from the 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, chroma, and lightness.

2.59
colour retention
degree of permanence of a *colour*

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

2.60
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*.

2.61.1
compatibility
<of materials> ability of two or more materials to be mixed together without causing undesirable effects

2.61.2
compatibility
<of a *coating material* with the *substrate*> ability of a *coating material* to be applied to a *substrate* without causing undesirable effects

2.62
consistency
body
flow resistance of a *coating material* as assessed subjectively when applying a shearing force

2.63
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

2.64
corrosion
process of deterioration by chemical, electrochemical or microbiological reactions resulting from exposure to the environment or a medium

2.65
cracking
rupturing of a dry *film* or *coat*

Note 1 to entry: The English term “cracking” is also used for a specific form of cracking illustrated in Figure 2.

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

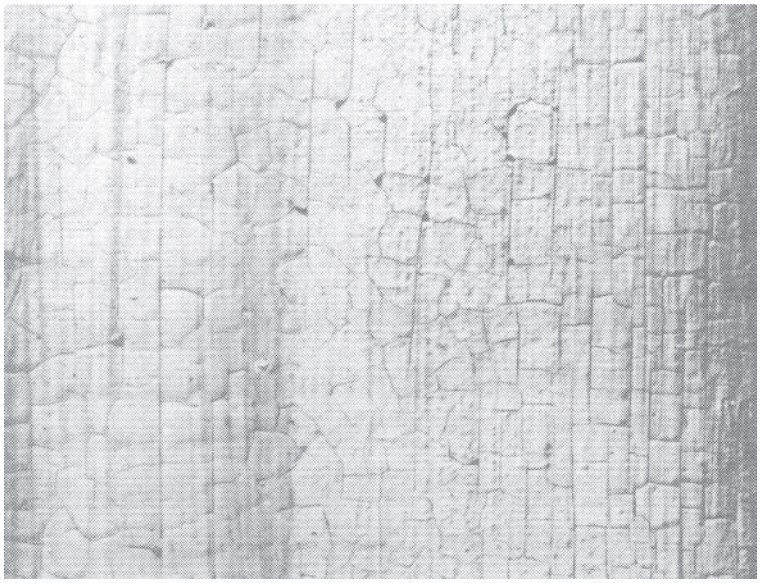

Figure 2 — Cracking

2.66
cratering
formation in a *film* or *coat* of small circular depressions that persist after drying

Note 1 to entry: Craters can extend into preceding layers of *coating* or to the *substrate*.

Note 2 to entry: Cratering is caused by localized inhomogeneities of the surface tension of the *coating*. Contamination of the *substrate* or *coating* with incompatible substances such as small oil drops or particulate material are the most frequent causes.

2.67
crawling
extreme form of *cissing*

Note 1 to entry: There is no German term for “crawling”.

2.68
crazing
form of *cracking* characterized by wide, deep cracks distributed over the surface of a dry *film* in a more or less regular pattern

Note 1 to entry: An example of crazing is shown in Figure 3.

Note 2 to entry: There is no French and German term for “crazing”.

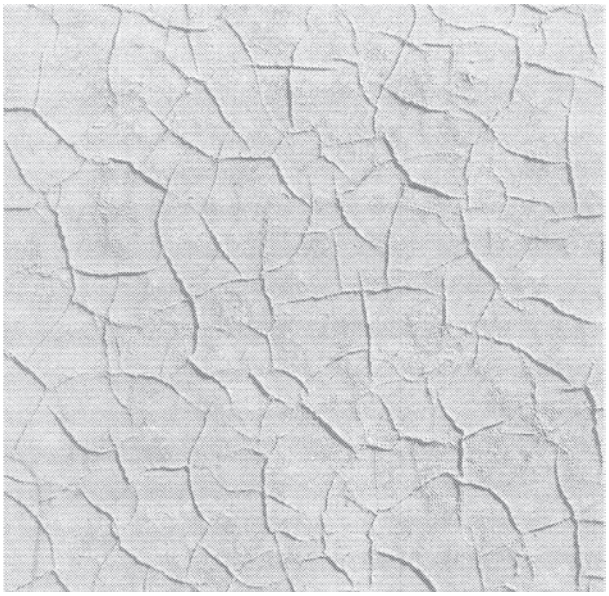

Figure 3 — Crazing

2.69
critical pigment volume concentration
CPVC
value of the *pigment volume concentration* at which the voids between the solid particles which are nominally touching are just filled with *binder* and above which certain properties of the *film* are markedly changed

2.70
crocodiling
form of *cracking* characterized by a pattern of cracks resembling a crocodile skin

Note 1 to entry: An example of crocodiling is shown in Figure 4.

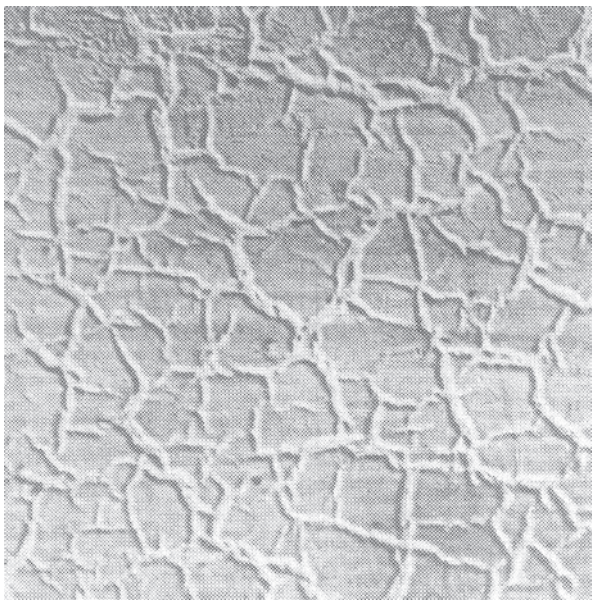

Figure 4 — Crocodiling

2.71
crow's foot cracking
form of *cracking* characterized by a pattern of cracks resembling a crow's foot

Note 1 to entry: An example of crow's foot cracking is shown in Figure 5.

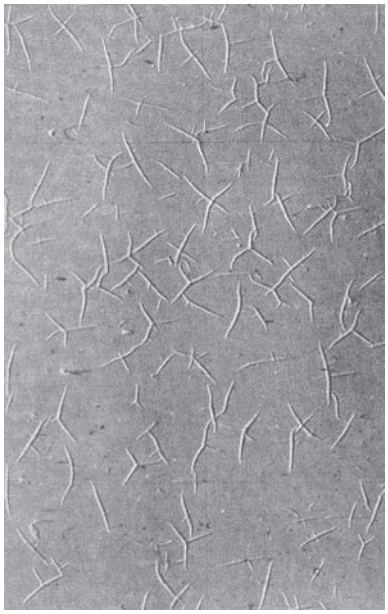

Figure 5 — Crow's foot cracking

2.72
curing
hardening
increase in the molecular size of a *binder* by chemical reaction

Note 1 to entry: Acceleration is possible by physical means (heat, radiation) or a catalyst.

Note 2 to entry: In French, curing is used for two-component *paints*, the second component generally being called the *hardener*.

2.73
curing agent
additive that promotes the chemical *curing* of a *coating*

2.74
curtain coating
application of a *coating material* by passing the article to be coated horizontally through a descending sheet of a continuously recirculated *coating material*

2.75
cutting-in
application of a *coating material* by brush up to a predetermined line

Note 1 to entry: An example is applying the *coating material* to the frames of windows without applying it to the glazing.

2.76
defoaming agent
additive that reduces foam which can form during manufacture and/or application of the *coating material*

Note 1 to entry: See also *anti-foaming agent*.

2.77
degreasing
removal from a surface, prior to painting, of oil, grease and similar substances by either an organic *solvent* or a water-based cleaning agent

2.78
de-nibbing
removal of small particles protruding from the dry surface of an applied *coating* or of a *substrate*

2.79
de-scaling
removal of *mill scale* or laminated rust from steel or other ferrous *substrates*

2.80
diluent
volatile liquid, single or blended, which, whilst not a *solvent*, may be used in conjunction with the *solvent* without causing any deleterious effects

Note 1 to entry: See also *solvent* and *thinner*.

2.81
dipping
application of a *coating material* by immersing the object to be coated in a bath containing the *coating material* and then, after withdrawal, allowing it to drain

2.82
dirt pick-up
tendency of a dry *film* or *coat* to attract to the surface appreciable amounts of soiling material

2.83
dirt retention
tendency of a dry *film* or *coat* to retain on the surface soiling material which cannot be removed by simple cleaning

2.84
dispersion
heterogeneous mixture of at least two materials, which are insoluble or only sparingly soluble in each other and not chemically bonded

Note 1 to entry: Dispersion is the generic term for *suspension* and *emulsion*.

2.85
dispersing agent
dispersant
additive that facilitates the dispersion of solids in the *medium* during manufacture and that increases the stability of the mixture thereafter

2.86
drier
compound, usually a metal soap, that is added to products drying by oxidation in order to accelerate this process

2.87
drying
all the processes through which an applied *coating material* passes in going from the liquid to the solid state

Note 1 to entry: “Oxidative drying” is used frequently, instead of the more correct term “oxidative hardening”.

Note 2 to entry: See also *curing*.

2.88
drying oil
oil based on unsaturated fatty acids, yielding a *film* by oxidation

2.89
durability
ability of a *coating* to resist the damaging effects of its environment

2.90
dyestuff
colouring material, soluble in the application medium

2.91
effect pigment
pigment, usually plate-like in form, that, confers not only *colour* but additional properties such as iridescence (interference at thin layers), angle dependency of colour (colour travel, colour flop, light-dark flop), or texture

2.92
efflorescence
phenomenon that occurs when water-soluble salts in a dry *film* or from the *substrate* migrate to the surface and form a crystalline deposit

2.93.1
elasticity
<general> ability of a dry *film* to return to its original form after the removal of stress applied in any lateral direction

Note 1 to entry: See also *flexibility*.

2.93.2
elasticity
<rheology> property of a material to show a reversible recovery after deformation

2.94
electrodeposition
process whereby a *film* of a water-based *coating material* is deposited, under the influence of electric current, on an object that forms either the anode or cathode, depending on the nature of the coating material

2.95
electron beam curing
process for the rapid *curing* of specially formulated *coating materials* by means of a concentrated stream of electrons

2.96
electrostatic spraying
method of application by which an electrostatic potential difference is applied between the article to be coated and the atomized *coating material* particles

2.97
emulsion
finely dispersed mixture of at least two liquids which are insoluble, or only sparingly soluble, in each other

2.98
epoxy ester
synthetic resin resulting from the reaction between an *epoxy resin* and fatty acids and/or oils

2.99
epoxy resin
synthetic resin containing epoxy groups, generally prepared from epichlorhydrin and a bisphenol

2.100
etch primer
primer, often supplied as two reactive components mixed immediately prior to *application*, designed to react with a metal surface to improve the *adhesion* of subsequent *coats*

2.101
etching
cleaning, *roughening* or removal of a natural oxide layer from a surface using a chemical agent prior to painting in order to increase *adhesion*

2.102
extender
substance in granular or powder form, insoluble in the *medium* and used to modify or influence certain physical properties

Note 1 to entry: In German the terms “Extender”, “Extenderpigment”, “Pigmentextender” or “Verschnittmittel” should be avoided.

2.103
exudation
sweating
migration of liquid components of a *coating material* to the surface of a *film*

2.104
fading
loss of *colour* of a *film* of a *coating material*

2.105
feather edging
reducing the thickness of the edge of an area of *coating* prior to recoating in order to avoid a ridge appearing in the merged layers

2.106
feeding
change in the consistency, i.e. increase in the viscosity, of a *coating material* during storage, to such an extent as to make it unusable

2.107
filler
coating material with a high proportion of *extender*, intended primarily to even out irregularities in *substrates* to be painted and to improve surface appearance

Note 1 to entry: The term filler is also widely used in the sense of *extender*.

2.108
filling
application of a *filler* to give a level surface

2.109
film
continuous layer of an applied *coating material*

2.110
film formation
transition of an applied *coating material* from the liquid to the solid state or, in the case of a *powder coating material*, through a liquid phase to the solid phase

Note 1 to entry: Film formation is brought about by *drying* and/or *hardening*. Both changes can proceed simultaneously.

2.111
fineness of grind
term related to the size of the largest particles in a mill base or in a *coating material*

2.112
finishing coat
top coat
final *coat* of a *coating system*

2.113
fish eyes
presence of craters in a *coat* each having a small particle of impurity in the centre

2.114
flaking
detachment of small parts of a *coating* due to a loss of *adhesion*

2.115
flame cleaning
process by which a reducing flame is applied to a surface, followed by manual or mechanical cleaning operations

2.116
flame treatment
method of pre-treatment, by a flame, where the surface of a plastics material (e.g. polyethylene) is oxidized to improve the wetting properties of the *coating material* and the *adhesion* of the *coating*, or even to render these possible

2.117
flash-off time
time necessary between the application of successive *coats* wet-on-wet or the time for the evaporation of most of the volatile matter before *stoving* or *curing* by radiation

2.118
flash point
lowest temperature, as measured in the prescribed manner, of the test portion corrected to a barometric pressure of 101,3 kPa, at which application of an ignition source causes the vapour of the test portion to ignite momentarily and the flame to propagate across the surface of the liquid under the specified conditions of test

2.119
flash rust
rapid formation of a very thin layer of rust on ferrous *substrates* after blast-cleaning, or of rust stains after the application of a water-based *coating material* on a ferrous *substrate*

2.120
flexibility
ability of a dry *film* or *coat* to follow without damage the deformations of the *substrate* to which it is applied

Note 1 to entry: The use of the term "*elasticity*" to describe the flexibility of a film is incorrect.

2.121
floating
separation of one or more *pigments* from a coloured coating material, causing streaks or areas of uneven *colour* on the surface of the coat

2.122
flocculation
formation of loosely coherent *pigment* or *extender agglomerates* in a *coating material*

2.123
flooding
movement of *pigment* particles in a liquid *coating* producing a *colour* which, although uniform over the whole surface, is markedly different from that of the freshly applied wet *film*

Note 1 to entry: See "*leafing*".

2.124
flow
property of a *coating material* that enables *levelling*

Note 1 to entry: Flow in this context is not a term for rheology.

2.125
flow agent
additive that improves the levelling of a *coating material* on a *substrate*

2.126
flow coating
application of a *coating material* either by pouring or by allowing it to flow over the object to be coated, and allowing the excess to drain off

2.127
flow properties
combination of all rheological properties of a *coating material*

2.128
force drying
process by which the *drying* of a *coating material* is accelerated by exposing it to a temperature higher than ambient, but below that normally used for *stoving*

2.129
frosting
formation of a large number of very fine wrinkles in the form of frost-like patterns

2.130
functional pigment
pigment, which based on its chemical or physical properties fulfils additional functions in addition to its *colour*

Note 1 to entry: Additional functions may be corrosion protection, function as barrier pigment, photocatalytical properties, infrared absorption or infrared reflection.

2.131
gassing
formation of gas during storage of a *coating material*

2.132
gloss
optical property of a surface, characterized by its ability to reflect light specularly

Note 1 to entry: Examples of degrees of gloss are high gloss, gloss, silkgloss, semigloss, satin, matt and dead matt.

2.133
graining
imitation of the appearance of wood by the use of suitable tools and *coating materials*

2.134
grit blasting
process of *abrasive blast-cleaning* using particulate material, such as steel, slag or aluminium oxide (corundum)

Note 1 to entry: For a fuller description of the term "grit", see ISO 11124-1 or ISO 11126-1.

2.135
hardener
one component of a *multi-pack product* that, mixed together, forms by chemical reaction a *film* having the desired properties

Note 1 to entry: See also *curing agent*.

2.136
hardness
ability of a dry *film* or *coat* to resist indentation or penetration by a solid object

2.137
haze
milky opalescence in high-gloss or clear *coatings*

2.138
hiding power
ability of a *coating* to obliterate the *colour* or colour differences of the *substrate*

Note 1 to entry: The use of the German expressions "Deckkraft" und "Deckfähigkeit" should be avoided.

Note 2 to entry: The term "coverage" is ambiguous because it is used in some instances to refer to hiding power and in others to mean *spreading rate*. The more precise terms hiding power and *spreading rate* should always be used.

2.139
holiday
defect of a paint *film*, e.g. pinholes, craters

2.140
hot spraying
spraying of a *coating material* that has been reduced in viscosity by heating

2.141
hydrocarbon resin
resin resulting from copolymerization of aliphatic and/or aromatic hydrocarbons

2.142
impregnating material
low viscosity *coating material* for the treatment of absorptive *substrates* to reduce their absorptivity

Note 1 to entry: See also *sealer*.

2.143
in-can preservative
biocide used to prevent growth of microorganisms during storage of a water-based *coating material* or stock solution

2.144
induction period
minimum time interval needed between mixing and application of *coating materials* supplied as a *multi-pack product*

Note 1 to entry: Not to be confused with *pot life*.

2.145
intermediate coat
any coat applied between the *priming coat* and the *finishing coat*

2.146
isocyanate resin
synthetic resin, containing free or blocked isocyanate groups, based on aromatic, aliphatic or cycloaliphatic isocyanates

2.147
lap
visible zone where a *coat* extends over an adjacent freshly applied *coat*

Note 1 to entry: A lap might occur where an attempt to merge two recently applied adjacent applications of a coating material gives a visual discontinuity due to the partial drying of the first applied coat.

2.148
lasure
coating material, solvent- or water-based, containing small amounts of a suitable *pigment* and/or *extender* and used to form a transparent or semi-transparent *film* for decoration and/or protection of the *substrate*

2.149
leafing
flooding of effect pigments to the surface of a *coating material* shortly after application

2.150
levelling
ability of a *coating material* to flow out after application so as to minimize any surface irregularities caused by the application process

2.151
lifting
softening, *swelling*, or separation from the *substrate* of a dry *film*, resulting from the application of a subsequent *coat* or the influence of a *solvent*

2.152
mar (noun)
blemish on the surface of a *coating*, extending over a particular area of the *coating* and visible due to the difference in the light-reflection properties of the area affected compared with the light-reflection properties of adjacent areas

2.153
marbling
imitation of the *appearance* of polished marble by use of suitable tools and *coating materials*

2.154
masking
temporary covering of that part of a surface which is to remain uncoated

2.155
matting agent
flatting agent
product incorporated in a *coating material* to reduce the *gloss* of the dry *film*

2.156
medium
vehicle
all constituents of the liquid phase of a *coating material*

Note 1 to entry: This definition does not apply to *coating powders*.

Note 2 to entry: There is no German term for "medium" or "vehicle".

2.157
metamerism
phenomenon perceived when two specimens have the same colour under the lighting of an illuminant, but different spectral reflection and transmission curves

2.158
mill base
proportions of those constituents of a *coating material* necessary to obtain the optimum degree of dispersion

2.159
mill scale
layer of iron oxides formed during the hot rolling of steel

2.160
mottling
non-uniform appearance of a *film* caused by presence of irregularly shaped, randomly distributed areas on the surface that vary in *colour* and/or *gloss*

2.161
mud cracking
formation of an irregular broken network of cracks in a *film*, which occurs due to volume reduction during *drying* or *curing*

2.162
multi-pack product
coating material that is supplied in two or more separate components which have to be mixed before use in the proportions specified by the manufacturer

2.163
nanoaerosol
solid or liquid *nano-objects* in dispersion in a gaseous medium

2.164
nanocoating
coating having a dry film thickness in the range 1 nm to 100 nm

2.165
nanodispersion
material in which *nano-objects* are dispersed in a continuous phase of a different composition

Note 1 to entry: Nanodispersions comprise *nanosuspensions*, and *nanoemulsions*.

Note 2 to entry: Gaseous matrices are excluded (solid and liquid drops in gases are "aerosols").

2.166
nanoemulsion
nanodispersion with a liquid matrix and at least one or more liquid *nano-objects*

2.167
nanoextender
extender made of nano-objects

2.168
nanofilm
film having a thickness in the range of 1 nm to 100 nm

2.169
nano-object
material with one, two or three external dimensions in the nanoscale

Note 1 to entry: This is a generic term for all discrete objects in the nanoscale.

2.170
nanopigment
pigment, made of nano-objects

2.171
nanoscale
size range from approximately 1 nm to 100 nm

2.172
nanostructured coating
coating having internal or surface structure in the nanoscale

2.173
nanosuspension
heterogeneous mixture of materials comprising a liquid and finely dispersed solid *nano-objects*

Note 1 to entry: As examples, *nanosuspension* can apply to either *suspensions* of nano-pigments or *nanoextenders* (minerals), or to polymeric *nanosuspensions*.

2.174
nanotexture
regular surface structure pattern in the nanoscale

2.175
natural resin
resin of vegetable or animal origin

2.176
non-volatile matter
NV
residue by mass obtained by evaporation under specified conditions

Note 1 to entry: Instead of the term "non-volatile matter" different terms, such as solid, dry residue, dry matter, solid matter, stoving residue are being used commonly with the respective abbreviations. The term "non-volatile matter" which is also applied in ISO 3251 should be used together with the abbreviation "NV" instead of these terms.

2.177
non-volatile matter by volume
NV_V
percentage residue by volume obtained by evaporation under specified conditions

2.178
oil absorption value
quantity of refined linseed oil that is absorbed under defined conditions by a sample of *pigment* or *extender*

Note 1 to entry: The oil absorption value may be expressed either on a volume/mass basis or a mass/mass basis.

2.179
orange peel
appearance of a *film* or *coat*, resembling the *texture* of the surface of an orange

2.180
organosol
dispersion of a thermoplastic polymer and, if required, *plasticizer*, usually containing *pigments*, in a volatile organic liquid

Note 1 to entry: On heating after application, an organosol forms a coherent *film* by the loss of volatile organic liquid.

2.181
overcoatability
ability of a film of a coating material to accept a coat of a different coating material

2.182
overlap
application of a *coat* of a *coating material* over and beyond a previously applied *coat*

2.183
overspray
that part of a sprayed *coating material* that does not reach the surface to be coated

2.184
paint
pigmented *coating material* which, when applied to a *substrate*, forms an opaque dried *film* having protective, decorative or specific technical properties

2.185
paint remover
material that, when applied to a coated *substrate*, softens the *coating* so that it can be removed easily

2.186
particle size
linear dimension of particles of *pigments*, *extenders* or other particulate matter such as is present in *polymer dispersions*

Note 1 to entry: It is normally quoted as the mean particle size.

2.187
peeling
detachment of large areas of the *coating* due to loss of *adhesion*

2.188
performance
characteristics defining the product behaviour

Note 1 to entry: For designation of a product the special characteristics should be stated.

Note 2 to entry: The word “performance” has no special paint related meaning in English.

2.189
permeability
property of a *coat* or *coating* that allows a liquid or a gas to diffuse through it

2.190
phenolic resin
synthetic resin resulting from the polycondensation of phenol, its homologues and/or derivatives with aldehydes, in particular formaldehyde

2.191
phosphating
chemical pre-treatment of the surface of certain metals using solutions essentially consisting of phosphoric acid and/or phosphates

2.192
pickling
removal of rust and *mill scale* from ferrous *substrates* by electrochemical procedures or by means of an acidic solution usually containing an inhibitor

Note 1 to entry: In German, the term “Beizen” refers also to:

a) a process in which a metal surface is treated with a chemical agent prior to painting in order to improve adhesion;

b) a specific treatment for the colouring of wood as in the English term “staining”.

2.193
pigment
colorant consisting of particles, insoluble in the application medium (e.g. *coating material* or plastic)

2.194
pigment volume concentration
PVC
ratio, expressed as a percentage, of the total volume of the *pigments* and/or *extenders* and/or other non-film-forming solid particles in a product to the total volume of the *non-volatile matter*

2.195
pinholing
presence of small holes in the *film* or *coat* resembling those made by a pin

2.196
plasticizer
substance added to a *coating material* to make the dry *film* more flexible

2.197
plastisol
stabilized *dispersion* of a thermoplastic polymer in an organic liquid of which a substantial portion is a non-volatile *plasticizer* miscible with the polymer, usually containing *pigments*

Note 1 to entry: On heating after application, the polymer and plasticizer fuse to form a coherent *film*.

2.198
polyester resin
synthetic resin resulting from the polycondensation of polyacids and polyols

Note 1 to entry: Depending on their chemical structure, a distinction is drawn between saturated and *unsaturated polyester resins*.

2.199
polymer dispersion
liquid or semi-liquid material, usually milky white in appearance, containing the polymeric material in a stable condition, finely dispersed in a continuous liquid phase, normally water (aqueous dispersion) or an organic liquid (non-aqueous dispersion, NAD)

2.200
polyurethane resin
synthetic resin resulting from the reaction of polyfunctional isocyanates with compounds containing reactive hydroxyl groups

2.201
pot life
maximum time during which a *coating material* supplied as separate components should be used after the components have been mixed together

Note 1 to entry: The term pot life can relate to the maximum time after mixing that the applied coating material retains good dry film properties and/or the maximum time after mixing that a liquid coating material retains good application properties.

2.202
pourability
ability of a dry powder to flow or to be poured

2.203
practical spreading rate
spreading rate which is obtained in practice on the particular *substrate* being coated

2.204
pre-fabrication primer
fast-drying *primer* that is applied to blast-cleaned steel to protect it during fabrication of a structure while still allowing the steel to be cut and welded

2.205
preparation grade
degree of visual cleanliness of a steel surface after corrosion products and/or contaminants have been removed by a preparation method

2.206
primer
paint that has been formulated for use as a *priming coat* on prepared surfaces

2.207
priming coat
first *coat* of a *coating system*

2.208
recoatability
ability of a coating to accept a further *coat* of the same coating material

2.209
reflow effect
ability of the *coating* surface to revert to its original appearance after damage such as scratching

2.210
resin
predominantly amorphous macro-molecular material that ranges from the solid to the liquid state

2.211
retarder
additive used to slow down a chemical reaction or a change in physical state

2.212
rheological modifier
additive used to adjust the *flow properties* of a *coating material*

Note 1 to entry: Examples of rheological modifiers are *flow agents*, *thickening agents* and *thixotropic agents*.

2.213
rheopexy
rheopectic behaviour
behaviour of a material, where rheological parameters such as shear viscosity increase over time under a constant mechanical load to a constant limiting value returning, with a given time dependence, to the initial state after reducing the load

2.214
roller application
coating process whereby the *coating material* is applied by means of a hand-held roller

2.215
roller coating
coating process whereby sheets or flat articles are passed between two or more horizontally mounted rigid rollers from which a *coating material* is transferred to one or both faces of the sheet or article

Note 1 to entry: The process can be used for the application of a coating material both to individual items (e.g. panels, flush doors) and to strip materials.

2.216
ropiness
effect characterized by pronounced brush marks that have not flowed out because of the poor *levelling* properties of the *coating material*

2.217
run
small *sag*

2.218
rust bloom
discoloration indicating the beginning of rusting

2.219
rust grade
classification of degree of mill scale and/or rust on a steel surface prior to cleaning

2.220
sag
local irregularity in the *film* or *coat* thickness caused by the downward movement of a *coating material* during application and/or *drying* in a vertical or an inclined position

Note 1 to entry: Small sags may be called *runs*, tears or droplets; large sags may be called curtains.

2.221
sagging
downward movement of a *coating material* during application and/or *drying* in a vertical or an inclined position that results in irregularities in the dry *coat*

2.222
sanding
abrasive process used to level and/or roughen a *substrate*

2.223
scratch
cut or gouge through the surface of the *coating* resulting from contact with a sharp object

2.224
scribe
linear *holiday* through a *coating*, deliberately introduced in order to expose the underlying metal *substrate* prior to exposure in a corrosive environment

2.225
sealant
organic material that provides a flexible, impermeable continuous barrier between two adjacent surfaces

2.226
sealer
coating material, generally unpigmented, applied to absorbent *substrates* prior to painting to reduce the absorptivity and/or to consolidate the *substrate*

2.227
settling
deposition of a sediment on the bottom of a can of a *coating material*

Note 1 to entry: A compact sediment cannot be redispersed by simple stirring.

2.228
shear-thickening flow behaviour
dilatant flow behaviour
behaviour of a material showing increasing shear viscosity when increasing the shear rate or shear stress

2.229
shear-thinning flow behaviour
pseudoplastic flow behaviour
behaviour of a material showing decreasing shear viscosity when increasing the shear rate or shear stress

2.230
sheen
gloss observed on an apparently matt surface at glancing angles of incidence

Note 1 to entry: There is no German term for “sheen”.

2.231
shelf life
time during which a *coating material* will remain in good condition when stored in its original sealed container under specified storage conditions

2.232.1
shop primer
<general> protective *coating material* for application in the workshop to a component that is subsequently to be finished on site

Note 1 to entry: See also *pre-fabrication primer*.

2.232.2
shop primer
<surface preparation> *coating material* that is applied to a steel substrate directly after *abrasive blast-cleaning*

2.233
shot blasting
process of *abrasive blast-cleaning* using small metal spheres

Note 1 to entry: For a fuller description of the term “shot”, see ISO 11124-1 or ISO 11126-1.

2.234
silicone resin
synthetic resin in which the basic structure consists of siloxane (silicon-oxygen-silicon linkages)

2.235
sinkage
partial absorption of a *film* of a *coating material* by the *substrate*, mainly perceptible as local differences in *gloss* and/or *texture*

2.236
skinning
formation of a skin on the surface of a *coating material* in the can during storage

2.237
solvent
single liquid or blend of liquids, volatile under specified drying conditions and in which the *binder* is soluble

Note 1 to entry: See also *thinner* and *diluent*.

2.238
spreading rate
surface area that can be covered by a given quantity of *coating material* to give a dried *film* of requisite thickness

Note 1 to entry: It is expressed in m^2/l or m^2/kg.

Note 2 to entry: See also *application rate*, *practical spreading rate* and *theoretical spreading rate*.

2.239
steam cleaning
removal of surface contaminants by the action of steam jets

2.240
stopper
special type of *filler* used for specific purposes such as filling holes and cracks

2.241
storage stability
time during which a *coating material*, stored under the conditions indicated by the supplier, remains stable

2.242
stoving
baking, en US
hardening process by which the crosslinking (increase in molecular size) of a *binder* results from the application of heat at a minimum temperature and for a minimum time specific to the material

2.243
strippable coating
coating material removable by simple detachment from a *substrate* to which it is intended to provide temporary protection

2.244
substrate
surface to which a *coating material* is applied or is to be applied

2.245
surface structure
shape or form of the surface

Note 1 to entry: The surface structure depends on the topography of the *coating*, the viewing distance and the focus of the image of the surface. The surface structure is influenced e.g. by the levelling of the liquid *coating material* as well as the *substrate*.

2.246
suspension
heterogeneous mixture of materials comprising a liquid and a finely dispersed solid material

2.247
swelling
increase in the volume of a film as a result of the absorption of liquid or vapour

2.248
synthetic resin
resin manufactured by chemical reactions such as polyaddition, polycondensation or polymerization

2.249
tack-free
state of a *coating* when a finger touching the surface no longer leaves a pronounced mark

2.250
tack rag
piece of cloth impregnated with a sticky substance that is used to remove dust from a *substrate* after abrading and prior to painting

2.251
tamped density
ratio of the mass to the volume of a powder after compaction (e.g. by tamping or vibrating) under specified conditions

Note 1 to entry: See also *bulk density*.

2.252
tamped volume
ratio of the volume to the mass of a powder after compaction (e.g. by tamping or vibrating) under specified conditions

2.253
tear
small run on a vertical or inclined surface having the appearance of a teardrop

Note 1 to entry: In the English language, the term "tear" is also used to describe a large crack in a dry *film*.

2.254
texture
regular surface structure pattern

2.255
textured coating
coating which, after *drying*, is characterized by a regular structured surface

2.256
theoretical spreading rate
spreading rate calculated solely from the volume of *non-volatile matter*

2.257
thickening
increase in the *consistency* of a *coating material* but not to the extent as to render it unsuitable

2.258
thickening agent
thickener
additive that increases the consistency of a liquid *coating material*

2.259
thinner
single liquid or blend of liquids, volatile under specified conditions of use, added to a *coating material* to reduce viscosity or influence other properties

Note 1 to entry: Depending on the meaning, the French term "diluant" corresponds to two terms in English, "diluent" and "thinner".

Note 2 to entry: See *solvent*.

2.260
thixotropic agent
thixotrope
additive used to impart thixotropic flow properties to a *coating material*

2.261
thixotropy
thixotropic behaviour
behaviour of a material where rheological parameters such as shear viscosity decrease over time under a constant mechanical load to a constant limiting value; returning, with a given time dependence, to the initial state after reducing the load

2.262
tie coat
coat designed to improve intercoat *adhesion*

2.263
tinter
dispersion of *pigments*, with or without *extenders* and *binders*, that is compatible with a *paint* and is used to modify the *colour*

2.264
unsaturated polyester resin
polyester resin characterized by carbon-carbon double bonds in the polymer chain that facilitate subsequent crosslinking with reactive *solvents*, particularly styrene

2.265
UV curing
hardening of *coating materials* by exposure to ultra-violet radiation

2.266
varnish
transparent *coating material*

Note 1 to entry: There is no German term for "varnish".

2.267
vinyl resin
synthetic resin resulting from the polymerization or copolymerization of monomers containing vinyl groups

2.268
viscoelasticity
property of a material that shows both elastic and viscous behaviour

2.269
viscosity
parameter to describe the internal flow resistance of a material

2.270
volatile organic compound
VOC
any organic liquid and/or solid that evaporates spontaneously at the prevailing temperature and pressure of the atmosphere with which it is in contact

Note 1 to entry: As to current usage of the term VOC in the field of *coating materials*, see *volatile organic compound content* (*VOC content*).

Note 2 to entry: Under US government legislation, the term VOC is restricted solely to those compounds that are photochemically active in the atmosphere (see ASTM D 3960). Any other compound is then defined as being an exempt compound.

2.271
volatile organic compound content
VOC content
VOCC
mass of the *volatile organic compounds* present in a *coating material*, as determined under specified conditions

Note 1 to entry: The properties and the amounts of compounds to be taken into account will depend on the field of application of the coating material. For each field of application, the limiting values and the methods of determination or calculation are stipulated by regulations or by agreement.

2.272
washability
ease with which dust, soiling and surface stains can be removed by washing from a dry *film* without detriment to its specific properties

2.273
wash primer
special form of *etch primer* containing balanced proportions of an inhibitive *pigment*, phosphoric acid and a dissolved *synthetic resin*, generally a poly(vinyl butyral)

2.274
water-based coating material
water-borne coating material
coating material in which the main component of the volatile matter is water

Note 1 to entry: For the English terms “water-based coating material”, “water-borne coating material”, “water-dilutable coating material”, “water-reducible coating material” and “water-thinnable coating material”, the German term “wasserverdünnbarer Beschichtungsstoff” is used.

Note 2 to entry: The term “water paint” is deprecated.

2.275
water-repellent agent
hydrophobic agent
additive that confers water-repellent properties on a dry *film* by increasing the interfacial tension between the dry *film* and the incident moisture

Note 1 to entry: There are also products with hydrophobic characteristics used for the treatment of *substrates*.

2.276
water-soluble coating material
coating material in which the *binder* is soluble in water

2.277
water-thinnable coating material
water-dilutable coating material
water-reducible coating material
coating material whose viscosity is reduced by the addition of water

Note 1 to entry: For the English terms "water-based coating material", "water-borne coating material", "water-dilutable coating material", "water-reducible coating material" and "water-thinnable coating material", the German term "wasserverdünnbarer Beschichtungsstoff" is used.

2.278
wet-on-wet application
technique whereby a further *coat* is applied before the previous one has dried, and the composite *film* then dries as a single entity

2.279
wetting agent
additive used to improve the contact between the *medium* and the *pigment*/*extender* particles or between the *coating material* and the *substrate*, generally by reducing the surface tension

2.280
whitening in the grain
white or silvery areas, mainly in deep-grained wood, which appear as the formation of a clear *film* progresses

2.281
wood preservative
product containing a *biocide* which is intended to inhibit the development of wood-destroying and/or wood-staining organisms in the wood to which it is applied

2.282
wood stain
penetrating composition containing a *dyestuff* that changes the *colour* of a wood surface, usually transparent and leaving no surface *film*, the *solvent* for which may be oil, denaturated alcohol or water

2.283
wrinkling
development of ripples in a film of *coating material* during drying

2.284
yield point
yield stress
yield value
critical shear stress value below which a material never flows

2.285
zinc-rich paint
zinc-rich primer
anti-corrosion *coating material* incorporating zinc dust in a concentration sufficient to give initial cathodic protection

Annex A
(informative)

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SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science, Technology and Research.

The Principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote Standardization and quality control by educational, consultancy and research and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and Administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in return are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution Endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of Standardization as are of special interest to Sri Lanka.

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