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Third edition

Building and civil engineering sealants — Vocabulary

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Foreword

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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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This document was prepared by Technical Committee ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 8, *Sealants*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/SS B02, *Structures*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 6927:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

— modified the title;

— added important terminology for the property of the sealant to reflect the progress of the sealant technology.

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.

Building and civil engineering sealants — Vocabulary

1 Scope

The document defines technical terms for self-levelling and gun-grade (gunnable) sealants for above-ground exposed structures.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11600, *Building construction — Jointing products — Classification and requirements for sealants*

3 Terms and definitions

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Sealant classification

3.1.1
seal
install the appropriate products in the *joint* (3.2.15) between components in order to prevent the penetration of water, moisture and/or air between the elements, components and assemblies made of the same or dissimilar materials

3.1.2
sealant
text material applied in an unformed state which, once *cured* (3.4.7) or dried, has the adhesive and cohesive properties to *seal* (3.1.1) a *joint* (3.2.15)

3.1.3
elastic sealant
sealant (3.1.2) in which the *stresses* (3.5.8) induced as a result of *joint* (3.2.15) movement are nearly proportional to the *strain* (3.5.7)

Note 1 to entry: The elastic behaviour of the sealant is evaluated by the *elastic recovery* (3.5.10) measurement (see ISO 7389).

3.1.4
plastic sealant
sealant (3.1.2) in which the *stresses* (3.5.8) induced as a result of *joint* (3.2.15) movement are nearly proportional to the rate of joint movement and are rapidly relieved when joint movement ceases

Note 1 to entry: The plastic behaviour of the sealant is evaluated by the *elastic recovery* (3.5.10) measurement (see ISO 7389).

3.1.5
one component sealant
sealant (3.1.2) ready for use not requiring mixing

3.1.6
multi-component sealant
sealant (3.1.2) supplied in the form of multiple separate components which become ready for use after mixing together

3.1.7
solvent-release sealant
sealant (3.1.2) supplied in the form of a suspension or solution in an organic solvent and which *cures* (3.4.7) mainly by evaporation of solvent

3.1.8
water-borne sealant
water-based sealant
sealant (3.1.2) supplied in the form of a dispersion in which water is the main carrier and which *cures* (3.4.7) mainly by evaporation of water

Note 1 to entry: Water-borne sealants are sometimes referred to as water-based sealants. The term "water-based" is deprecated.

3.1.9
low-modulus sealant
sealant (3.1.2) with a *secant tensile modulus* (3.5.9) < 0,4 N/mm^2 at 23 °C and < 0,6 N/mm^2 at 20 °C

Note 1 to entry: Low-modulus sealants / High-modulus sealants shall be in accordance with ISO 11600.

3.1.10
high-modulus sealant
sealant (3.1.2) with a *secant tensile modulus* (3.5.9) > 0,4 N/mm^2 at +23 °C or > 0,6 N/mm^2 at −20 °C

Note 1 to entry: Low-modulus sealants / High-modulus sealants shall be in accordance with ISO 11600.

3.1.11
self-levelling sealant
sealant (3.1.2) that exhibits sufficient flow to achieve gravitational levelling

3.1.12
gun-grade sealant
sealant (3.1.2) suitable to extrude through the nozzle of a hand- or power-operated device

3.1.13
non-sag sealant
sealant (3.1.2) with minimal flow when applied in vertical or inverted *joints* (3.2.15)

3.2 Ancillary materials

3.2.1
ancillary materials
substrates (3.2.9), *back-up materials* (3.2.3) and other materials necessary for preparing a *sealant* (3.1.2) *joint* (3.2.15) for installation or testing

3.2.2
primer
surface coating applied to the faces of the *joint* (3.2.15) before placing the *sealant* (3.1.2) in order to ensure its adhesion

3.2.3
back-up material
backing material
material inserted in a *joint* (3.2.15), which defines the depth of *sealant* (3.1.2) applied, prevents three-sided adhesion, and defines the back profile of the sealant

3.2.4
surface finish
qualities of a surface determined by deliberate preparation or absence of said preparation

3.2.5
porous substrate
substrate (3.2.9) which absorbs liquids

3.2.6
non-porous substrate
substrate (3.2.9) that is impervious to liquids

3.2.7
anti-adherent substrate
substrate (3.2.9) to which a *cured* (3.4.7) *sealant* (3.1.2) has no adhesion

3.2.8
casting spacer
material that is placed to maintain a specified distance between the two *substrates* (3.2.9) of a *test specimen* (3.2.11), while the *sealant* (3.1.2) is curing

3.2.9
substrate
material to which a *sealant* (3.1.2) is applied in a test, specified both by composition, *surface finish* (3.2.4), and physical dimensions

3.2.10
separator
material that is placed to maintain a specified *strain* (3.5.7) level between the two *substrates* (3.2.9) of a *test specimen* (3.2.11) while the specimen is being subjected to a test

3.2.11
test specimen
piece or assembly with defined configuration subjected to a test

3.2.12
cleaning agent
material used to clean *substrates* (3.2.9)

3.2.13
masking tape
peelable material applied to the surface of the *substrate* (3.2.9) to prevent contamination or adhesion of the *sealant* (3.1.2)

3.2.14
glazing
installation of glass or other materials in framed prepared openings

3.2.15
joint
space or opening between two or more adjoining surfaces

3.3 Rheology

3.3.1
extrusion rate
amount of a *sealant* (3.1.2) which exits a container per unit of time under defined conditions

3.3.2
extrudability
property of a *sealant* (3.1.2) determined by *extrusion rate* (3.3.1)

3.3.3
resistance to flow
non-sag
property of a *sealant* (3.1.2) exhibiting little or no flow during *cure* (3.4.7) when applied in *joints* (3.2.15)

3.3.4
self-levelling
property of a *sealant* (3.1.2) in an uncured state that allows it to be poured into horizontal *joints* (3.2.15), forming a level surface without *tooling* (3.4.5)

3.4 Application

3.4.1
conditioning
storage of a *sealant* (3.1.2) and/or *ancillary materials* (3.2.1) under specified parameters prior to and/or during testing

3.4.2
pot life
working life
time after mixing a *multi-component sealant* (3.1.6) in which the material (still remains workable) and allows for *tooling* (3.4.5) into application

3.4.3
surface cure time
surface dry time
time after application when the *sealant* (3.1.2) has sufficiently *cured* (3.4.7) so that there is no transfer of materials when lightly touching the surface

3.4.4
depth of the sealant
smallest distance between the exposed surface of the *sealant* (3.1.2) and its back profile

3.4.5
tooling
smoothing
act of forcing the *sealant* (3.1.2), following application, into a *joint* (3.2.15) in order to ensure contact between the sealant and the *substrate* (3.2.9) surface, in order to improve the surface appearance and adhesion

3.4.6
tack-free time
time after which a *sealant* (3.1.2) surface looses its tackiness

3.4.7
cure
irreversible transformation of a *sealant* (3.1.2) from a liquid or paste-like state into a plastic or rubber-like solid state

Note 1 to entry: This transformation may be due to loss of solvent or water and/or to a chemical reaction, e.g. *crosslinking* (3.4.12).

3.4.8
cure time
time after application when the *sealant* (3.1.2) attains its serviceability properties

3.4.9
cure degree
relative state or level to which the *sealant* (3.1.2) has *cured* (3.4.7) at a given point in time

3.4.10
cure rate
rate at which the *sealant* (3.1.2) *cures* (3.4.7)

3.4.11
cure depth
measured thickness to which a *sealant* (3.1.2) has *cured* (3.4.7) after a given period of time

3.4.12
crosslinking
formation of a three-dimensional polymer network by means of inter-chain reactions resulting in physical property changes

3.4.13
tooled surface
aesthetic profile of the *sealant* (3.1.2) surface in a *joint* (3.2.15) after *tooling* (3.4.5) the sealant

3.4.14
skinning time
skin over time
time it takes to form a thin layer at the surface of an applied *sealant* (3.1.2) that differs in physical properties from the material beneath it

3.5 Physical properties

3.5.1
Compatibility
property of a *sealant* (3.1.2) to remain in direct contact with, or in close proximity to, another material without unfavourable physical or chemical interactions

3.5.2
movement capability
quantitative statement of the ability of a *sealant* (3.1.2) to accommodate movement while maintaining an effective seal

3.5.3
compression
C
reduction of a *joint* (3.2.15) width due to an applied force

Note 1 to entry: $C = (C_1 - C_0)/C_0 \times 100$

where

C_0 is the initial width of the joint;

C_1 is the joint width at the applied force.

Note 2 to entry: Compression is expressed as a percentage.

3.5.4
shrinkage
decrease in length, area or volume

3.5.5
extension
Y
increase of a *joint* (3.2.15) width due to an applied force

Note 1 to entry: $Y = (Y_1 - Y_0)/Y_0 \times 100$