



SLOVENSKI STANDARD

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Tesnilne mase za nekonstrukcijske stike v stavbah in na sprehajalnih površinah - 4. del: Tesnilne mase za sprehajalne površine

Sealants for non-structural use in joints in buildings and pedestrian walkways - Part 4:
Sealants for pedestrian walkways

Fugendichtstoffe für nicht tragende Anwendungen in Gebäuden und Fußgängerwegen -
Teil 4: Fugendichtstoffe für Fußgängerwege

Mastics pour joints dans la construction immobiliere - Définitions, exigences et évaluation
de la conformité - Partie 4: Mastics pour chemins piétonniers

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Sealants for non-structural use in joints in buildings and pedestrian walkways - Part 4: Sealants for pedestrian walkways

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Fugendichtstoffe für nicht tragende Anwendungen in
Gebäuden und Fußgängerwegen - Teil 4: Fugendichtstoffe
für Fußgängerwege

This European Standard was approved by CEN on 29 January 2010.

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Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions.....	5
4 Requirements	5
4.1 Identification requirements	5
4.1.1 Short description of the sealant	5
4.1.2 Thermogravimetric test	6
4.1.3 Specific Gravity	6
4.1.4 Indentation hardness (Shore hardness).....	6
4.2 Conditioning, test procedure and substrates	6
4.2.1 General.....	6
4.2.2 Classification.....	6
4.3 Performance requirements and test methods for non-structural sealants for pedestrian walkways.....	7
4.3.1 General.....	7
4.3.2 Sealants in pedestrian walkways used in cold climates.....	9
4.4 Additional performance requirements for exterior applications	11
4.4.1 General.....	11
4.4.2 Artificial weathering by UV-radiation	12
4.5 Reaction to fire	13
4.5.1 General.....	13
4.5.2 Mounting and fixing conditions for test samples.....	13
5 Durability.....	13
6 Sampling	14
7 Evaluation of conformity.....	14
7.1 General.....	14
7.2 Initial type testing.....	14
7.3 Factory production control	14
8 Marking and labelling	14
Annex A (informative) Example on the frequency of tests for factory production control	15
Annex B (normative) Determination of the change of volume of self levelling cold applied joint sealants	16
B.1 Principle	16
B.2 Apparatus and materials	16
B.3 Preparation of test specimens.....	16
B.4 Test procedure	16

Foreword

This document (EN 15651-4:2010) has been prepared by Technical Committee CEN/TC 349 “Sealants for joints in building construction”, the secretariat of which is held by AFNOR.

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 2010, and conflicting national standards shall be withdrawn at the latest by September 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes an informative Annex A dealing with factory production control and a normative Annex B dealing with the determination of the change of volume of self levelling cold applied joint sealants.

This document is one of the product European Standards within the framework series of EN 15651 on *Sealants for non-structural use in joints in buildings and pedestrian walkways*, as follows:

- *Part 1: Sealants for facade elements,*
- *Part 2: Sealants for glazing,*
- *Part 3: Sealants for sanitary joints,*
- *Part 4: Sealants for pedestrian walkways (this document),*
- *Part 5: Evaluation of conformity and marking.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

EN 15651-4:2010 (E)**1 Scope**

This document specifies definitions and requirements for cold applied non-structural elastic sealants used for movement joints in floors in building construction for interior and exterior use.

Areas of application are: floor joints designed for pedestrian walkways, public areas, movement joints between concrete slabs, areas with pedestrian load, areas used with trolleys, walkable floors, balconies, terraces, warehouses.

NOTE Provisions on evaluation of conformity (i.e. Initial Type Testing and Factory Production Control) and marking of these products are given in EN 15651-5.

Chemical containment, cold applied joint sealants for concrete pavements to be used in roads, airfields and sewage treatment plants, perimeter seals are excluded.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 14187-3, *Cold applied joint sealants — Part 3: Test method for the determination of self-levelling properties*

EN 15651-5, *Sealants for non-structural use in joints in buildings and pedestrian walkways — Part 5: Evaluation of conformity and marking*

EN 26927:1990, *Building construction — Jointing products — Sealants — Vocabulary (ISO 6927:1981)*

EN ISO 291, *Plastics — Standard atmospheres for conditioning and testing (ISO 291:2008)*

EN ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868:2003)*

EN ISO 1183-1, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1:2004)*

EN ISO 7389, *Building construction — Jointing products — Determination of elastic recovery of sealants (ISO 7389:2002)*

EN ISO 7390, *Building construction — Jointing products — Determination of resistance to flow of sealants (ISO 7390:2003)*

EN ISO 8339, *Building construction — Sealants — Determination of tensile properties (Extension to break) (ISO 8339:2005)*

EN ISO 8340, *Building construction — Sealants — Determination of tensile properties at maintained extension (ISO 8340:2005)*

EN ISO 9047, *Building construction — Jointing products — Determination of adhesion/cohesion properties of sealants at variable temperatures (ISO 9047:2001)*

EN ISO 10563, *Building construction — Sealants — Determination of change in mass and volume (ISO 10563:2005)*

EN ISO 10590, *Building construction — Sealants — Determination of tensile properties of sealants at maintained extension after immersion in water (ISO 10590:2005)*

EN ISO 11358, *Plastics — Thermogravimetry (TG) of polymers — General principles (ISO 11358:1997)*

EN ISO 11431, *Building construction — Jointing products — Determination of adhesion/cohesion properties of sealants after exposure to heat, water and artificial light through glass (ISO 11431:2002)*

EN ISO 11600:2003, *Building construction — Jointing products — Classification and requirements for sealants (ISO 11600:2002)*

ISO 13640, *Building construction — Jointing products — Specifications for test substrates*

3 Terms and definitions

For the purposes of this document, the following terms and definitions given in EN 26927:1990 and the following apply.

3.1

reactive sealant

mainly curing by chemical reaction, with significant increase of the molecular weight of the main polymer

3.2

cure

irreversible transformation of a sealant from a liquid or paste like state into a hardened or rubber like solid state

3.3

uncured/wet

state of a sealant prior to the above transformation

4 Requirements

4.1 Identification requirements

4.1.1 Short description of the sealant

The short description of the non-structural sealant for pedestrian walkways shall include brand name, type (general chemical family one or multi-component (e.g. one component Polyurethane sealant in different colours, etc.).

The primer shall be stated for the substrate concerned, if relevant (name, chemical type, etc.).

EN 15651-4:2010 (E)**4.1.2 Thermogravimetric test**

The test shall be carried out in accordance with EN ISO 11358 on the uncured or wet sealant, between 35 °C and 900 °C, temperature slope 10 °C/min, non-oxidative condition (e.g. nitrogen). A single sample shall be used for this test. A single specimen may be tested and there shall be no significant difference between the reference curve and derivative (profile).

In the case of a multi-component sealant, each component shall be evaluated (if relevant).

4.1.3 Specific Gravity

The determination of the specific gravity shall be in accordance with EN ISO 1183-1, on the uncured or wet sealant, using Method A or Method B, depending on the type of sealant under test. The testing temperature shall be (23 ± 2) °C. At least three samples shall be tested. The method used and the mean value, recorded to two decimal places, shall be declared. The tolerance of the declared values shall be within ± 5 %.

In the case of a multi-component sealant, each component shall be evaluated.

4.1.4 Indentation hardness (Shore hardness)

The determination of the indentation hardness shall be in accordance with EN ISO 868. The test shall be performed on the cured sealant.

The exact conditions of test shall be defined by the manufacturer (i.e. thickness, cure/drying times and temperature and relative humidity, specific Shore type (A, D...), test time, temperature, etc.).

At least three samples shall be tested and five measurements taken per sample. The mean value and tolerances of all measurements, recorded to the nearest unit, shall be declared.

4.2 Conditioning, test procedure and substrates

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4.2.1 General

When determining the classification of a sealant according to the requirements of this standard, the same conditioning procedure shall be used in all relevant test methods (use only Method A or Method B). For each test method, three test specimens for each substrate shall be tested. The same batch of sealant (and primer, if used) shall be used in all tests. The same substrates (material and surface finish) shall be used in all tests.

4.2.2 Classification**4.2.2.1 General**

Classes for cold applied elastic sealants for movement joints in floors in building construction are referred to as type PW (= pedestrian walkways).

4.2.2.2 Classification according to the movement capability

According to their movement capability, sealants are subdivided into different classes as given in Table 1.

Table 1 — Sealant classes

Class	Test amplitude %	Movement capability % ^a
25	± 25	25,0
20	± 20	20,0
12,5	± 12,5	12,5

^a For the correct interpretation and application of movement capability to the design of joints, relevant national standards and advisory documents should be considered.

4.2.2.3 Classification according to the secant tensile modulus

Sealants of class 25 and class 20 are additionally sub-classified according to their secant tensile modulus (see EN 26927 and EN ISO 11600):

- low modulus: code LM;
- high modulus: code HM.

If the evaluated secant tensile modulus value exceeds the values specified below for either or both temperatures, the sealant shall be classified as high modulus. Specified values (see Tables 2 and 3, second column) are as follows:

- 0,4 N/mm² at + 23 °C;
- 0,6 N/mm² at - 20 °C.

The secant modulus shall be the mean value of the three measured values. Round the mean value to one decimal place.

Substrates to be used in all mechanical tests concerned are: mortar M1 or M2 according to ISO 13640 and/or other substrates.

4.3 Performance requirements and test methods for non-structural sealants for pedestrian walkways

4.3.1 General

The requirements and test methods are specified in Table 2.