

Joint fillers and sealants

Part 4: Specifications for primers to be used with joint sealants

ICS 93.080.20

National foreword

This British Standard is the UK implementation of EN 14188-4:2009.

The UK participation in its preparation was entrusted to Technical Committee B/510/3, Materials for concrete roads.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Types.....	5
5 Requirements	5
5.1 Homogeneity	5
5.2 Density	5
5.3 Viscosity	5
5.4 Resistance against alkali	5
5.5 Evaporation behaviour of volatiles	5
5.6 Solid content	5
5.7 Flash point.....	6
5.8 Softening point of solids.....	6
5.8.1 Bitumen based primers	6
5.8.2 Resin based primers	6
5.9 Dangerous substances	6
6 Evaluation of conformity.....	6
6.1 General.....	6
6.2 Type testing.....	6
6.2.1 Initial Type Testing	6
6.2.2 Further type testing	7
6.3 Factory Production Control (FPC)	7
6.3.1 General.....	7
6.3.2 Frequency of testing	7
6.3.3 Equipment	7
6.3.4 Raw materials and components.....	7
6.3.5 Design process	7
6.3.6 Non-conforming products	7
7 Marking, labelling and packaging	8
7.1 General.....	8
7.2 Primer.....	8
7.3 Containers	8
Annex A (normative) Initial Type Testing and frequencies of testing for Factory Production Control	9
Annex B (informative) Example of a product data sheet.....	10

Foreword

This document (EN 14188-4:2009) has been prepared by Technical Committee CEN/TC 227 “Road Materials”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.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 European Standard is one of a series of standards as listed below:

- EN 14188-1, *Joint fillers and sealants – Part 1: Specifications for hot applied sealants*;
- EN 14188-2, *Joint fillers and sealants – Part 2: Specifications for cold applied sealants*;
- EN 14188-3, *Joint fillers and sealants – Part 3: Specifications for preformed joint seals*;
- EN 14188-4, *Joint fillers and sealants – Part 4: Specifications for primers to be used with joint sealants*.

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, 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.

1 Scope

This European Standard specifies requirements for material characterisation for primers for hot and cold applied joint sealants for use in roads, airfields and other concrete pavements. This European Standard also applies to primers for hot and cold applied joint sealants in bituminous surfacing and a bituminous surfacing and an adjacent concrete pavement.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1427, *Bitumen and bituminous binders - Determination of the softening point - Ring and Ball method*

EN 12697-3, *Bituminous mixtures - Test methods for hot mix asphalt - Part 3: Bitumen recovery: Rotary evaporator*

EN 14188-1:2004, *Joint fillers and sealants — Part 1: Specifications for hot applied sealants*

EN 14188-2:2004, *Joint fillers and sealants — Part 2: Specifications for cold applied sealants*

EN 15466-1, *Primers for cold and hot applied joint sealants — Part 1: Determination of homogeneity*

EN 15466-2, *Primers for cold and hot applied joint sealants — Part 2: Determination of resistance against alkali*

EN 15466-3, *Primers for cold and hot applied joint sealants — Part 3: Determination of solids content and evaporation behaviour of volatiles*

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

EN ISO 2431, *Paints and varnishes — Determination of flow time by use of flow cups (ISO 2431:1993, including Technical Corrigendum 1:1994)*

EN ISO 2719, *Determination of flash point — Pensky-Martens closed cup method (ISO 2719:2002)*

EN ISO 2811-2, *Paints and varnishes - Determination of density - Part 2: Immersed body (plummet) method (ISO 2811-2:1997)*

EN ISO 9001, *Quality management systems – Requirements (ISO 9001:2008)*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 14188-1:2004, EN 14188-2:2004 and EN 26927:1990 and the following apply.

3.1 manufacturer's limiting value MLV
manufacturer's stated minimum or maximum value to be met during testing according to the requirements of this European Standard

3.2

manufacturer's declared value MDV

value declared by the manufacturer accompanied by a declared tolerance

4 Types

Primers for joint sealants shall be one of the types given in Table 1.

Table 1 — Types of primers for joint sealants

Primer	Type
Bitumen based for hot applied joint sealants	PBH
Resin based for hot applied joint sealants	PRH
Resin based for cold applied joint sealants (One component primer)	PRC-o
Resin based for cold applied joint sealants (Multi-component primer)	PRC-m

5 Requirements

5.1 Homogeneity

The homogeneity after homogenization shall be determined in accordance with EN 15466-1 and shall give a result "homogenous".

5.2 Density

The density shall be determined in accordance with EN ISO 2811-2 and the results shall lie within the declared tolerance of the MDV. The tolerance of the MDV shall lie within –5 % and +5 %.

5.3 Viscosity

The viscosity shall be determined in accordance with EN ISO 2431 and the results shall lie within the declared tolerance of the MDV. The tolerance of the MDV shall lie within –15 % and +15 %.

5.4 Resistance against alkali

The resistance against alkali shall be determined in accordance with EN 15466-2 and shall give a result "resistant".

5.5 Evaporation behaviour of volatiles

The evaporation behaviour of volatiles shall be determined in accordance with EN 15466-3 and the results shall lie within the declared tolerance of the MDV. The tolerance of the MDV shall lie within –5 % and +5 %.

5.6 Solid content

The solid content shall be determined in accordance with EN 15466-3 and the results shall lie within the declared tolerance of the MDV. The tolerance of the MDV shall lie within –2 % and +5 %.

5.7 Flash point

The flash point shall be determined in accordance with EN ISO 2719 and the results shall lie within the declared tolerance of the MDV. The tolerance of the MDV shall lie within $-5\text{ }^{\circ}\text{C}$ and $+5\text{ }^{\circ}\text{C}$.

5.8 Softening point of solids

5.8.1 Bitumen based primers

After diluting the primer with approximately the same amount of solvent (ratio Primer : Solvent about 1:1) and extracting the solvent by a rotary evaporator in accordance to EN 12697-3, the softening point shall be determined in accordance with EN 1427 and the results shall lie within the declared tolerance of the MDV. The tolerance of the MDV shall lie within $-5\text{ }^{\circ}\text{C}$ and $+5\text{ }^{\circ}\text{C}$.

5.8.2 Resin based primers

The determination of this property is not applicable.

5.9 Dangerous substances

The manufacturer shall ensure that the national laws and regulations of the member state of destination for the protection of health and the environment are observed when using his product.

6 Evaluation of conformity

6.1 General

The compliance of the product with the requirements of this European Standard shall be demonstrated by:

- a) Initial Type Testing;
- b) Factory Production Control by the manufacturer, including product assessment.

The characteristics indicated in Clause 5 shall be determined within 3 months of the date of delivery from the manufacturer or before the expire date, whichever is the sooner.

For the purposes of testing, the product may be grouped into families, where it is considered that the selected property is common to all products within that family.

6.2 Type testing

6.2.1 Initial Type Testing

Initial Type Testing shall be performed to show conformity with this document. Tests previously performed in accordance with the provisions of this document (same product, same characteristic(s), test method, sampling procedure, system of attestation of conformity, etc.) may be taken into account. In addition, Initial Type Testing shall be performed at the beginning of the production of a new product type (unless a member of the same family) or at the beginning of a new method of production (where this may affect the stated properties).

All characteristics in Clause 5 shall be subject to Initial Type Testing.

6.2.2 Further type testing

Whenever a change occurs in the product design, or the raw materials, or the supplier of the components, or the production process (subject to the definition of a family), which would change significantly one or more of the characteristics, the type tests shall be repeated for the appropriate characteristic(s).

6.3 Factory Production Control (FPC)

6.3.1 General

The manufacturer shall establish, document and maintain a FPC system to ensure that the products placed on the market conform with the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

A FPC system conforming with the requirements of EN ISO 9001 and made specific to the requirements of this standard, is considered to satisfy the above requirements.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturer's FPC procedures.

6.3.2 Frequency of testing

Minimum frequencies of testing for Factory Production Control shall be as shown in Table A.1.

6.3.3 Equipment

Testing – All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedure, frequencies and criteria.

Manufacturing – All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the manufacturing process. Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures and the records retained for the period defined in the manufacturer's FPC procedures.

6.3.4 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their conformity.

6.3.5 Design process

The Factory Production Control system shall document the various stages in the design of products, identify the checking procedure and those individuals responsible for all stages of design.

During the design process itself, a record shall be kept of all checks, their results, and any corrective actions taken. This record shall be sufficiently detailed and accurate to demonstrate that all stages of the design phase, and all checks, have been carried out satisfactorily.

6.3.6 Non-conforming products

The manufacturer shall have written procedures which specify how non-conforming products shall be dealt with. Any such events shall be recorded as they occur and these records shall be kept for the period defined in the manufacturer's written procedures.

7 Marking, labelling and packaging

7.1 General

Each container of the primer for joint sealant shall be clearly and indelibly marked, giving as a minimum requirement the following information:

7.2 Primer

- a) manufacturer's name and address;
- b) type of primer in accordance with Table 1;
- c) designation and batch number and date of manufacture;
- d) expiry date;
- e) type of sealant with which it is to be used;
- f) directions for use;
- g) directions for storage and disposal;
- h) labelling according to national regulations related to dangerous substances and/or health and safety.

7.3 Containers

Primers shall be supplied in sealed packages which allow the primer to be stored without detriment for the full shelf life under the manufacturer's defined conditions.

Annex A
 (normative)

Initial Type Testing and frequencies of testing for Factory Production Control

The minimum frequencies of testing for Factory Production Control are given in Table A.1.

Table A.1 — Initial Type Testing and frequencies of Factory Production Control

Product characteristic	Clause	Initial type testing	Factory Production Control: Minimum frequencies of testing per			
			Batch	week	month	year
Homogeneity	5.1	X	1			
Density	5.2	X	1			
Viscosity	5.3	X	1			
Resistance against alkali	5.4	X				1
Evaporation behaviour of volatiles	5.5	X				1
Solid content	5.6	X	every 5 th		1	
Flash point	5.7	X				1
Softening point solids	5.8	X	every 5 th		1	

Annex B (informative)

Example of a product data sheet

General information:

- a) Date and reference of this technical data sheet
- b) Product trade name
- c) Manufacturer/supplier
- d) Origin/source of manufacturing
- e) Description of the product
- f) Primer and amount for the application
- g) Intended use and method of application
- h) Product performance (see Table B.1)
- i) Certification mark where relevant
- j) Consumer information

Table B.1 — Information from testing

Characteristic	Test method	Unit	Expression of result ^a	Value or statement ^b
Homogeneity	EN 15466-1	[-]	threshold value	
Density	EN ISO 2811-2	[kg/m ³]	MDV	
Viscosity	EN ISO 2431	[mm ² /s]	MDV	
Resistance against alkali	EN 15466-2	[-]	threshold value	
Evaporation behaviour of volatiles	EN 15466-3	% by mass	MLV	
Solids content	EN 15466-3	% by mass	MDV	
Flash point	EN ISO 2719	°C	MDV	
Softening point solids	EN 1427	°C	MDV	
^a MLV: manufacturer's limiting value according to 3.1; MDV: manufacturer's declared value according to 3.2. ^b To be completed by the manufacturer. – not relevant				

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