Test report no.: **220740/21-IX**

Customer:
Sika Services AG
Stuttgarter Straße 117
72574 Bad Urach
GERMANY

Order: Testing of the booster accelerated sealant **Sikaflex®-423 PowerCure** in accordance with DIN EN ISO 11600 with the contact partner Mortar M1.

Letter of: 2021-11-11 **Ref:** Mr Ralf Heinzmann

Sample receipt: 2021-11-24 and 2021-12-01(Primer)

Test period: 2021-12-08 to 2022-03-23

The test report comprises 7 pages.

Würzburg, 13 April 2022
Fs/km

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1. Order

The Company Sika Deutschland GmbH, Stuttgarter Straße 117, 72574 Bad Urach, GERMANY, instructed SKZ - Testing GmbH by letter of 11 November 2021 to test the performance of a booster accelerated joint sealant **Sikaflex®-423 PowerCure** in accordance with DIN EN ISO 11600:2011-11 Building construction - Jointing products - Classification and requirements for sealants, Class 25HM.

2. Test material

The SKZ - Testing GmbH received the following samples for testing (description is based on inspection of the samples at SKZ - Testing GmbH and on the manufacturer`s data):

6 cartridges booster accelerated sealant

Designation:	**Sikaflex®-423 PowerCure**
Type (chemical family):	Polyurethane
Colour:	Concrete-grey
Batch number:	3005424469
Sample receipt:	2021-11-24

250 ml one-component primer for absorbent surfaces (concrete)

Designation:	**Sika® Primer 115**
Batch number:	3005641873
Sample receipt:	2021-12-01

3. Test procedure

The test of the booster accelerated sealant **Sikaflex®-423 PowerCure** was performed in accordance with DIN EN ISO 11600:2011-11, table 3 - requirements for building sealants (F) - class 25HM.

Usually we carry out tests according to standards for which we have an accreditation. The list of all standards for which we are accredited is shown on the homepage at www.skz.de. In case of non-accredited procedures they are marked with *.

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Production and pre-treatment of test specimens

For the test specimens with the joint dimensions 12 x 12 x 50 mm were produced according to ISO 8340:2005-06.

For the determination of all tensile properties and adhesion/cohesion properties substrate according to the following table was used and prepared:

Substrate according to ISO 13640:1999-12	Primer	Drying time of the primer up to the application of the sealant in the joints
Mortar M1	**Sika® Primer 115**	**90 min**

The test specimens Mortar (M1) were blown off with compressed air.

The preconditioning of the test specimens was carried out according to DIN EN ISO 8340:2005-09, method B.

Method A: Standard conditioning atmosphere 23/50, class 1 according to DIN EN ISO 291:2008-08

Methode B: The test specimens shall be conditioned according to method A and shall then be submitted three times to the following storage cycle:

a) 3 days in the oven at (70 ± 2) °C;

b) 1 day in distilled water at (23 ± 2) °C;

c) 2 days in the oven at (70 ± 2) °C;

d) 1 day in distilled water at (23 ± 2) °C

3.1 Requirements for building sealants

3.1.1 Elastic recovery

The test was carried out according to DIN EN ISO 7389:2004-04 with test specimens made of anodised aluminium with a 100 % extension, in relation to the initial joint width.

Requirement:

The elastic recovery shall be at least 70 %.

3.1.2 Tensile properties (secant tensile modulus)

The test was carried out according to ISO 8339:2005-06. The secant tensile modulus was determined on test specimens, which were extended by 100 % of the original width at temperatures of 23 °C and -20 °C.

Requirement:

Secant tensile modulus at	23 °C:	> 0.4 MPa
		or
	at -20 °C:	> 0.6 MPa

3.1.3 Tensile properties at maintained extension

The test was carried out according to ISO 8340:2005-06 with an extension of 100 % at temperatures of 23 °C and -20 °C.

Requirement:

After 24 h neither an adhesive nor a cohesive failure shall occur on the test specimens which are extended by 100 %.

3.1.4 Determination of adhesion/cohesion properties at variable temperatures

The test was carried out according to ISO 9047:2016-02. The amplitude of extension/compression was ± 25 % of the initial joint width.

Requirement:

The joint sealant must not separate from the contact material nor shall the joint sealant display any signs of crack formation.

3.1.5 Adhesion/cohesion properties at maintained extension after immersion in water

The test was carried out according to ISO 10590:2005-07 with an extension of 100 %.

Requirement:

After 24 h neither an adhesive nor a cohesive failure shall occur on the test specimens which are extended by 100 %.

3.1.6 Change in volume

The test was carried out according to ISO 10563:2017-09 in a forced ventilated oven with open flap.

Requirement:

The change in volume must be ≤ 10 %.

3.1.7 Resistance to flow

The test was carried out according to DIN EN ISO 7390:2004-04.

Requirement:

According to method A and B at 5 °C and 50 °C the slump (flow) of the joint sealant must not exceed 3 mm.

4. Test results - Sikaflex®-423 PowerCure

Requirements for building sealants (F)					
	Property	*Unit*	*Requirement*		*Result*
4.1	Elastic recovery (DIN EN ISO 7389)	%	≥ 70		88
4.2	Secant tensile modulus (ISO 8339)	MPa MPa	at 23 °C, 100 % extension	> 0.4 or	0.6
			at -20 °C, 100 % extension	> 0.6	1.0
4.3	Tensile properties at maintained extension (ISO 8340)	---	No failure (NF) at 23 °C and -20 °C		NF
4.4	Adhesion/cohesion properties at variable temperatures (ISO 9047)	---	No failure (NF)		NF[1]
4.5	Adhesion/cohesion properties at maintained extension after immersion in water (ISO 10590)	---	No failure (NF)		NF[1]
4.6	Change in volume (ISO 10563)	%	≤ 10		-0.9
4.7	Resistance to flow (DIN EN ISO 7390)	mm	A vertical 5 °C	≤ 3	0
			A vertical 50 °C	≤ 3	0
			B horizontal 5 °C	≤ 3	0
			B horizontal 50 °C	≤ 3	0

5. Designation

Sealant DIN EN ISO 11600 - F - 25 HM – M1p

6. Assessment of test results

The booster accelerated sealant **Sikaflex® -423 PowerCure** meets the requirements according to DIN EN ISO 11600:2011-11, table 3 - requirements for building sealants (F) - class 25HM.

[1] Neither adhesive nor cohesive failure occurred