

Test report no.: 205279/19-V

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

Order: Testing of the one- component joint sealant **Sikaflex® PRO-3 Purform** following the approval principles for waste water plants DIBT: 2003-03

E-mail of: 2019-11-07 **Ref:** Mr Ralf Heinzmann

Sample receipt: 2020-01-21

Test period: 2020-02-05 to 2020-07-02

The test report comprises 7 pages.

Würzburg, 17. Juli 2020
Lg/km

i. V.

Dr.-Ing. Andrea Monami
Deputy Head of Testing Laboratory



i. A.

Dr. Philipp Lang
Group Manager Testing Laboratory
Profiles and Sealants

Die ungekürzte oder auszugsweise Wiedergabe, Vervielfältigung und Übersetzung dieses Berichtes zu Werbezwecken bedarf der schriftlichen Genehmigung der SKZ - Testing GmbH. Die Ergebnisse beziehen sich auf die geprüften Produkte.

Contents

1. Order	3
2. Test material	3
3. Test procedure	4
3.1 Requirements of the approval principles for sealants in waste water plants	5
3.1.1 Resistance to flow	5
3.1.2 Adhesion and cohesion properties	5
3.1.3 Resistance to water pressure	6
3.1.4 Weight change after heat storage.....	6
3.1.5 Chemical resistance	6
4. Test results - Sikaflex® PRO-3 Purform	7



1. Order

The Company Sika Services AG, Stuttgarter Straße 117, 72574 Bad Urach, GERMANY, instructed SKZ - Testing GmbH by e-mail of 7 November 2019 to test the one-component sealant **Sikaflex® PRO-3 Purform** following the approval principles for waste water plants DIBT: 2003-03.

2. Test material

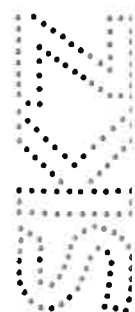
The SKZ - Testing GmbH received the following samples for testing (description is based on inspection of the samples at SKZ - Testing GmbH and on the manufacturer's data):

10 cartridges one-component sealant

Designation:	Sikaflex® PRO-3 Purform
Type (chemical family):	---
Colour:	Grey
Batch number:	3004406492
Sample receipt:	2020-01-21

1x 250 mL Primer

Designation:	Sika Primer 3N
Batch number:	3004160491423802
Sample receipt:	2020-01-16



3. Test procedure

The test the one-component joint sealant **Sikaflex® PRO-3 Purform** was performed following the approval principles for waste water plants DIBT: 2003-03.

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 *.

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 3N	90 min.

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

Method B: The test specimens were conditioned according to method A and subsequently, subjected three times to the following storage cycle:

- a) 3 days in the oven at $(70 \pm 2) \text{ }^\circ\text{C}$;
- b) 1 day in distilled water at $(23 \pm 2) \text{ }^\circ\text{C}$;
- c) 2 days in the oven at $(70 \pm 2) \text{ }^\circ\text{C}$;
- d) 1 day in distilled water at $(23 \pm 2) \text{ }^\circ\text{C}$



3.1 Requirements of the approval principles for sealants in waste water plants

3.1.1 Resistance to flow

The test was carried out following the approval principles for waste water plants DiBT: 2003-03, Part 5.1.

Requirement:

The sealant must not have a tendency to leak after being introduced into the joint space to be filled. The bulge must not exceed 2 mm

3.1.2 Adhesion and cohesion properties

The test was carried out following the approval principles for waste water plants DiBT: 2003-03, Part 5.2. For storage A and B, the sample must be expanded by 50% of the initial joint width. The tests shall be carried out at 23 ± 1 °C.

For storage C the sample must be expanded by 20% of the initial joint width. The test shall be carried out at -20 ± 2 °C.

The following types of storage were used:

Storage A

- 28 days in $\text{Ca}(\text{OH})_2$ saturated water at 23 ± 1 °C

Storage B:

- 3 days (70 ± 2) °C in air
- 1 day (23 ± 2) °C in distilled water
- 2 days (70 ± 2) °C in air
- 1 day (23 ± 2) °C in distilled water

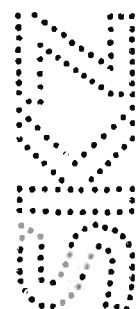
This 7-day cycle is to be carried out four times.

Storage C:

- 7 days at (-20 ± 1) °C

Requirement:

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



3.1.3 Resistance to water pressure

The test was carried out following the approval principles for waste water plants DiBT: 2003-03, Part 5.3.

Requirement:

The joint filled with the sealant must be subjected to a permanent water pressure of 0.5 bar withstand. During the test according to 5.3, the outward oiling of the sealant must not exceed 24 hours not be larger than 5 mm after pressure application and at a constant pnif pressure of 2 bar after a further 7 days only increase by a maximum of 1 mm. During the test there is no water penetration at the joint.

3.1.4 Weight change after heat storage

The test was carried out following the approval principles for waste water plants DiBT: 2003-03, Part 5.4.

Requirement:

The maximum loss of weight shall not exceed 10%.

3.1.5 Chemical resistance

The test was carried out following the approval principles for waste water plants DiBT: 2003-03, Part 5.5.

For a period of 7 days, the test specimens were stored in the following solutions at 23 ± 2 °C:

- dilute sulphuric acid with a pH of 2,0
- Diluted caustic soda lye with a pH value of 12.0
- Commercial sanitary cleaner in 5 % aqueous solution (contains peroxide).

Requirement:

The changes in volume and weight shall not exceed 5%



4. Test results - Sikaflex® PRO-3 Purform

	Property	Unit	Requirement¹	Result
4.1	Resistance to flow	mm	≤ 2	0
4.2 Adhesion and cohesion properties				
	Storage A: 28 days Ca(OH) ₂ at 50 % elongation	---	No failure (NF)	NF ²
	Storage B: 28 days alternate storage at 50 % elongation	---	No failure (NF)	NF ²
	Storage C: 7 days -20°C at 20 % elongation	---	No failure (NF)	NF ²
4.3 Resistance to water pressure				
	after 24 h	mm	≤ 5	4.1
	after another 168 h	mm	≤ 1	0.6
	No water penetration	---	No failure (NF)	NF ²
4.4	Weight change after heat storage	%	≤ 10	0
4.5 Chemical resistance				
4.5.1 Change in Volume				
	dilute sulphuric acid with a pH of 2,0	%	≤ 5	-0.2
	Diluted caustic soda lye with a pH value of 12.0	%	≤ 5	0.1
	Commercial sanitary cleaner in 5 % aqueous solution (contains peroxide)	%	≤ 5	-0.4
4.5.2 Change in weight				
	dilute sulphuric acid with a pH of 2,0	%	≤ 5	-0.3
	Diluted caustic soda lye with a pH value of 12.0	%	≤ 5	0
	Commercial sanitary cleaner in 5 % aqueous solution (contains peroxide)	%	≤ 5	-0.3

¹ Requirement according to DIBT approval principles for waste water plants DIBT: 2003-03

² Neither adhesive nor cohesive failure occurred.