

Test Report 2010105

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Sikaflex-11 FC+ (i-cure)			
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1. Task

Testing of the adhesion properties of Sikaflex-11FC⁺ (ic = i-Cure) manufactured in Bad Urach (DE) and Düringen (CH) in comparison to Sikaflex PRO-3 WF (corresponds to current Sikaflex-11 FC⁺ formulation).

2. Results

The adhesion results of the tested Sikaflex-11 FC⁺ (ic) batches are better in comparison to Sikaflex PRO-3 WF. On smooth concrete (after pre-treatment with SikaPrimer-3 N) and on all tested metal surfaces Sikaflex-11 FC⁺ (ic) performed better than Sikaflex PRO-3 WF.

3. Summary:

Sikaflex-11 FC⁺ (ic) shows significant improved adhesion properties in comparison with Sikaflex PRO-3 WF.

4. Materials

4.1 Substrates

Concrete, smooth	Concrete, rough	Granite
Tile glazed	Tile without glazing	Float glass
AlMgSi1	Aluminium anodized	Steel ST 37 bare
Steel, galvanised	Stainless steel	Sikafloor 381
Icosit EG 5	GFK	PVC Kömadur
Wood board	Powder coating	

4.2 Adhesives

name	batch Nr.:	colour
Sikaflex-11 FC ⁺ (ic)) BU	12644319	concrete grey
Sikaflex PRO-3 WF	12581806	concrete grey
Sikaflex-11 FC ⁺ (ic)Dü	12632034	concrete grey

4.3 Primer

name	batch Nr.:
SikaAktivator-205	12527257
SikaPrimer-3 N	12562162
SikaPrimer-215	12521655

4.4 Cleaner

Sika Cleaner 5

4.5. Pre treatment

Abrasive Pad scotch brite, 360 (A)

5. Testing method

5.1 Peel test according to Sika-testing method U-TA 301B/94-2. The adhesion was tested after the following storage conditions: **1.)** 7d 23°C/50% R.h. **2.)** 14d 23°C/50% R.h. **3.)** 4d water 21°C (+1h standard clime), **4.)** 3 d 70°C (+1h standard clime)

6. Results:

6.1 Adhesion results peel test

Substrate	Pre-treatment	Primer	Sealant	adhesion result				
				7 d NK	14 d NK	4 d H ₂ O	3 d 70°C	
Concrete smooth	without	without	Sikaflex 11 FC ⁺ (ic)BU	4-5	4-5	5	5FH	
			Sikaflex PRO 3 WF	5	5	5	5	
			Sikaflex 11 FC ⁺ (ic)DÜ	5	5	5	5FH	
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)BU	1	1	3-4	2-3	
			Sikaflex PRO 3 WF	1	1	5FH	1-2	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	5FH	4FH	
Concrete rough	without	without	Sikaflex 11 FC ⁺ (ic)BU	5	5	5	5FH	
			Sikaflex PRO 3 WF	5	5	5	5	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	3	5	5FH	
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)BU	1	1	2-3	1-2	
			Sikaflex PRO 3 WF	1	1	2	1-2	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	2-3	1	
Aluminium anodized	without	without	Sikaflex 11 FC ⁺ (ic)BU	5	2RA	2RA	1	
			Sikaflex PRO 3 WF	5	5	5	1-2	
			Sikaflex 11 FC ⁺ (ic)DÜ	5	3RA	3RA	1	
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1	
			Sikaflex PRO 3 WF	1	1	1	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)BU	1	1	1-2	1	
			Sikaflex PRO 3 WF	1	1	1-2	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	
	abrasive pad	without	without	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1
				Sikaflex PRO 3 WF	1	1	3RA	1
				Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1	
			Sikaflex PRO 3 WF	1	1	1	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1	
			Sikaflex PRO 3 WF	1	1	1	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	
Stainless steel	without	without	Sikaflex 11 FC ⁺ (ic)BU	5	2RA	2RA	1	
			Sikaflex PRO 3 WF	5	5	5	2	
			Sikaflex 11 FC ⁺ (ic)DÜ	5	2RA	2-3RA	1	
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1	
			Sikaflex PRO 3 WF	1	1	1	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1	
			Sikaflex PRO 3 WF	1	1	1	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	
	abrasive pad	without	without	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1-2
				Sikaflex PRO 3 WF	1	1	3RA	5
				Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1	
			Sikaflex PRO 3 WF	1	1	1	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1	
			Sikaflex PRO 3 WF	1	1	1	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	
PVC	without	without	Sikaflex 11 FC ⁺ (ic)BU	5-	5-	5-	5-	
			Sikaflex PRO 3 WF	5-	5-	5-	5-	
			Sikaflex 11 FC ⁺ (ic)DÜ	5-	5-	5-	5-	
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)BU	5	5	5	5-	
			Sikaflex PRO 3 WF	5	5	5	5-	
			Sikaflex 11 FC ⁺ (ic)DÜ	5	5	5	5-	
		Sika Primer 215	Sikaflex 11 FC ⁺ (ic)BU	1	1	1	1	
			Sikaflex PRO 3 WF	1	1	1	1	
			Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1	

Substrate	Pre-treatment	Primer	Sealant	adhesion result			
				7 d NK	13 d NK	4 d H ₂ O	3 d 70°C
Steel galvanized	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	5 (3)	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
	abrasive pad	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	5	5	5	5
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
Steel ST 37 bare	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	2ra	1	5	1
			Sikaflex PRO 3 WF	5	5	5	5
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	5	1
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
	abrasive pad	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	4-5	5
			Sikaflex PRO 3 WF	5	5	5	5
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1		1
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
GFK	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaPrimer-215	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
	abrasive pad	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaPrimer-215	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
Wood board	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	2	2	5	2
			Sikaflex PRO 3 WF	2	2	5	2
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	2-3	1-2
			Sikaflex PRO 3 WF	1	1	5	1
Tile without glaze	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1-2	1	2-3	1
			Sikaflex PRO 3 WF	1-2	1	1	1
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
Tile glazed	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
Sikafloor 381	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	5	5	5	2-3
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
Icosit EG 5	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
Float glass	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
Polyester powder coating	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	5-	5-	5-	5
			Sikaflex PRO 3 WF	5-	5-	5-	5

Substrate	Pre-treatment	Primer	Sealant	adhesion result			
				7 d NK	13 d NK	4 d H ₂ O	3 d 70°C
Granite	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
AlMgSi1	without	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
	abrasive pad	without	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaAktivator-205	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1
		SikaPrimer-3 N	Sikaflex 11 FC ⁺ (ic)DÜ	1	1	1	1
			Sikaflex PRO 3 WF	1	1	1	1

Note	Judgement of the adhesion	
1	Very good	100 % cohesive break
2	Good	≥ 90 % cohesive break
3	Sufficient	> 50% cohesive break
4	Not sufficient	≤ 50% cohesive break
5	Bad	≤ 25% cohesive break

Following codes may follow the rating numbers:

L=Bad adhesion on coating
 BK=Bubbles in adhesive
 T=Tunnelling

P=Primer failure
 B=Bubbles on the substrate's surface
 K=Uncured adhesive on the surface

S = Foam structure on surface
 FH=Film adhesion
 RA=Separation on the edges