

Product Data Sheet
Edition 05/01/2009
Identification no:
02 07 03 02 003 0 000002
Sikadur®-Combiflex® CF Adhesive
Type N and Type R

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2-part epoxy adhesive

Part of the Sikadur®-Combiflex® System

Product Description

Sikadur®-Combiflex® CF Adhesive Type N and Type R are thixotropic two part adhesives based on epoxy resins and fillers.

The Sikadur-Combiflex CF Adhesive Type N and Type R are part of the Sikadur®-Combiflex® System and used to glue the Sikadur®-Combiflex® Tape or the Sikadur®-Hypalon Strip to different substrates.

Type N (= Normal Potlife) is used for temperatures between +10°C to +30°C.
Type R (= Rapid Potlife) is used for temperatures between +5°C to +15°C.

Uses

- As adhesive for the Sikadur®-Combiflex® System

Characteristics / Advantages

- Easy to mix and apply
- Suitable for both dry and damp concrete surfaces
- Excellent adhesion to many materials
- Styrene and nonylphenol free
- Performs well within a wide temperature range
- Completely weather and water resistant
- Root resistant
- Good resistance to many chemicals
- Available with normal or rapid hardening grade adhesive
- No primer needed
- High mechanical resistance
- Good abrasion resistance

Tests

Approval / Standards

Testing according to EN 1504-4.



Product Data

Form

Colours	Part A:	White
	Part B:	Dark grey
	Part A+B mixed:	Light grey

Packaging	Pallets of 600 kg (20 x 20 kg Part A and 20 x 10 kg Part B) Not pre-dosed industrial packaging: Part A: 20 kg pails Part B: 10 kg pails
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Storage

Storage Conditions / Shelf Life	24 months from date of production if stored properly in unopened undamaged and sealed original packaging in dry conditions at temperatures between +5°C and +30°C.
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Technical Data

Chemical Base	Modified, solvent free, filled 2-part epoxy resin.
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Density	~ 1.5 kg/l	part A	(at +23°C)
	~ 1.5 kg/l	part B Type N	(at +23°C)
	~ 1.6 kg/l	part B Type R	(at +23°C)
	~ 1.5 kg/l	part A+B mixed	(at +23°C)

Thermal Expansion Coefficient	<i>Linear expansion (1 / °C)</i>		
	Type Normal:	$5.3 \times 10^{-5} (\pm 0.2 \times 10^{-5})$	at -20°C to +40°C (EN ISO 1770)
	Type Rapid:	$4.5 \times 10^{-5} (\pm 0.2 \times 10^{-5})$	at -20°C to +40°C

Service Temperature	-30°C to +60°C
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Mechanical / Physical Properties

Compressive Strength

(ASTM D 695-96)

Curing time	Type Normal		
	+10°C	+23°C	+30°C
3 days	~ 35 N/mm ²	~ 48 N/mm ²	~ 52 N/mm ²
7 days	~ 41 N/mm ²	~ 50 N/mm ²	~ 54 N/mm ²
14 days	~ 43 N/mm ²	~ 54 N/mm ²	~ 55 N/mm ²

Curing time	Type Rapid		
	+5°C	+10°C	+15°C
3 days	~ 26 N/mm ²	~ 34 N/mm ²	~ 45 N/mm ²
7 days	~ 39 N/mm ²	~ 43 N/mm ²	~ 53 N/mm ²
14 days	~ 41 N/mm ²	~ 50 N/mm ²	~ 55 N/mm ²

Bond Strength

(DafSt-Richtlinie, Part 3)

Substrate	Bond strength
Concrete (dry)	> 4 N/mm ² (failure in concrete)
Concrete (mat moist / damp)	> 4 N/mm ² (failure in concrete)
Steel (blastcleaned)	> 10 N/mm ²

E-Modulus	(ASTM D 695)	
	Temperature	E-Modulus (compressive)
	+5°C	~ 4'200 N/mm ²
	+23°C	~ 3'500 N/mm ²

Resistance

Chemical Resistance Please consult the Sikadur®-Combiflex® System product data sheet.

System Information

System Structure Please consult the Sikadur®-Combiflex® System product data sheet.

Application Details

Consumption Please consult the Sikadur®-Combiflex® System product data sheet.

Substrate Quality *Concrete, stone, mortar, rendering:*
Substrate must be clean, free from oil, grease, laitance or loose particles.
Age of concrete 3 - 6 weeks dependent on environmental conditions.

Construction Steel 37:
Clean, free from oil, grease, rust and scale.

Substrate Preparation *Concrete, stone, mortar, rendering:*
Blastcleaning or equivalent mechanical means followed by thorough vacuum/dust removal.

Construction Steel 37:
Blastcleaning or equivalent mechanical means followed by thorough vacuum/dust removal.

Avoid dew point conditions for application.

Application Conditions / Limitations

Substrate Temperature Type Normal: +10°C to +30°C
Type Rapid: +5°C to +15°C

Ambient Temperature Type Normal: +10°C to +30°C
Type Rapid: +5°C to +15°C

Material Temperature Type Normal: +10°C to +30°C
Type Rapid: +5°C to +15°C

Substrate Moisture Content *Cementitious substrates:*
Dry, max. mat damp (surface dry)

When applied to mat damp concrete, brush the adhesive well into the substrate.

Dew Point Beware of condensation!

Ambient temperature during application must be at least +3°C above dew point.

Application Instructions

Mixing

Part A : B = 2 : 1 parts by weight or volume

Pre-batched units:

Mix parts A+B together for at least 2 minutes with a mixing spindle attached to a slow speed electric drill (max. 500 rpm) until the material becomes smooth in consistency and a uniform grey colour. Avoid aeration while mixing. Then, pour the whole mix into a clean container and stir again for approx. 1 more minute at low speed to keep air entrapment at a minimum. Mix only that quantity which can be used within its potlife.



Bulk packing, not pre-batched:

First, stir each part thoroughly. Add the parts in the correct proportions into a suitable mixing pail and stir correctly using an electric low speed mixer as above for pre-batched units.



Application Method / Tools

Please consult the Sikadur®-Combiflex® System product data sheet.

Cleaning of Tools

Clean all tools and application equipment with Sika® Colma-Cleaner immediately after use. Hardened / cured material can only be mechanically removed.

Potlife

Potlife

Temperature	Type Normal (6 kg)	Type Rapid (6 kg)
+5°C	-	~ 65 minutes
+10°C	~ 125 minutes	~ 45 minutes
+15°C	~ 95 minutes	~ 25 minutes
+23°C	~ 50 minutes	-
+30°C	~ 25 minutes	-

If larger quantities are being mixed the temperature of Sikadur®-Combiflex® CF Adhesive will increase due to the chemical reaction, resulting in a reduced potlife.

Open time:

Type Normal: ~ 70 minutes at +23°C

Type Rapid: ~ 65 minutes at +10°C

Scratch resistance:

Temperature	Type Normal	Type Rapid
+5°C	-	~ 16 hours
+10°C	~ 14 hours	~ 11 hours
+15°C	~ 10 hours	~ 7 hours
+23°C	~ 8 hours	-
+30°C	~ 6 hours	-

Waiting Time / Overcoating

Sikadur®-Combiflex® CF Adhesive may be overcoated with an epoxy coating. In this event do not smooth the adhesive with detergent. If waiting time between application of adhesive and overcoating is to be longer than 2 days, the adhesive must be blinded to excess with quartz sand immediately after application.

Notes on Application / Limitations

Please consult the Sikadur®-Combiflex® System product data sheet.

Value Base

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

Local Restrictions

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.


Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

Legal Notes

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

Note**The following chapter is only mandatory for European countries****CE Labelling****Sikadur® Combiflex® CF Adhesive Type N**

		
0921		2)
Sika Schweiz AG Tueffenwies 16-22 CH - 8048 Zuerich 1001		← *)
08		1)
0921-CPD-2054		3)
EN 1504-4		4)
Structural bonding product for bonded mortar or concrete for uses other than low performance requirements		
Bond/adhesion strength:		Pass (concrete failure)
Shear strength: (hardened- hardened concrete)		≥ 12 N/mm ²
Compressive strength		≥ 30 N/mm ²
Shrinkage / expansion:		≤ 0.1%
Workability:		110 min. at 23°C
Sensitivity to water		Pass
Modulus of elasticity:		≥ 2'000 N/mm ²
Coefficient of thermal expansion:		≤ 100 * 10 ⁻⁶
Glass transition temperature:		≥ 40°C
Reaction to fire		Euroclass E
Durability		Pass
Dangerous substances:	(comply with 5.4)	None

1) Last two digits of the year in which the marking was affixed

2) Identification number of the notified body

3) Number of the EC Certificate

4) Number of European standard

*) **Please fill in your relevant producer address**

Note**The following chapter is only mandatory for European countries****CE Labelling****Sikadur® Combiflex® CF Adhesive Type R**

CE		
0921		2)
Sika Schweiz AG Tueffenwies 16-22 CH - 8048 Zuerich 1001		← *)
08		1)
0921-CPD-2054		3)
EN 1504-4		4)
Structural bonding product for bonded mortar or concrete for uses other than low performance requirements		
Bond/adhesion strength:	Pass (concrete failure)	
Shear strength: (hardened- hardened concrete)	≥ 12 N/mm ²	
Compressive strength	≥ 30 N/mm ²	
Shrinkage / expansion:	≤ 0.1%	
Workability:	60 min. at 15°C	
Sensitivity to water	Pass	
Modulus of elasticity:	≥ 2'000 N/mm ²	
Coefficient of thermal expansion:	≤ 100 * 10 ⁻⁶	
Glass transition temperature:	≥ 40°C	
Reaction to fire	Euroclass E	
Durability	Pass	
Dangerous substances:	(comply with 5.4) None	

1) Last two digits of the year in which the marking was affixed

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