BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET
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EPOXY INJECTION GROUTING

Sika AnchorFix®-1

FAST-CURING ANCHORING ADHESIVE

Description

Solvent- and styrene-free methacrylate-based two-part polyester anchoring adhesive.

Where to Use

As a fast curing anchoring adhesive for all grades of:
- Rebars / reinforcing steel
- Threaded rods
- Bolts and special fastening systems

On the following substrates:
- Concrete
- Hollow and solid masonry
- Hard natural stone
- Solid rock

Advantages

- Fast curing
- Applicable with standard calking guns
- Can be used at low temperatures
- High load capacity
- Non-sag, even overhead
- Styrene-free
- Low odour
- Low wastage
- No transportation restrictions

Technical Data

Packaging	300 mL standard cartridge, 12 per box.
Colour	Part A: White Part B: Black Part A + B mixed: Light grey
Shelf Life	12 months from date of production if stored properly in original and unopened packaging and in cool and dry conditions at temperatures between 0 and 20 °C (32 and 68 °F). Protect from direct sunlight. Condition the product between 5 and 40 °C (41 and 104 °F) before use to ease application.

Properties at 23 °C (73 °F) and 50 % R.H.

Density	1.63 kg/L (part A + B mixed).
Sag Flow	Non-sag, even overhead
Layer Thickness	3 mm max.
Thermal Stability	Glass-Transition Temperature (TG): 60 °C / 140 °F (According to DIN EN ISO 6721-2)
Compressive Strength ASTM D695	~ 60 N/mm² (7 jours, à 20 °C)
Compressive E-Modulus ASTM D695	~ 3,500 N/mm² (7 jours, +20 °C) ()
Flexural Strength ASTM D790	~ 28 N/mm² (7 jours, +20 °C)
Tensile Strength ASTM D638	~ 12 N/mm² (7 jours, +20 °C)
Tensile Modulus of elasticity ASTM D638	~ 4,500 N/mm² (7 jours, +20 °C)
Thermal Resistance	**Long term:** -40 °C min. / +50 °C max. (ETAG 001, deel 5) **Short term (1 to 2 hours):** +80 °C

Curing Speed

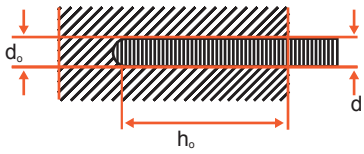
Temperature	Open Time T_{gel}	Curing Time T_{cur}
-10 °C (14 °F)	30 minutes	24 hours
5 °C (41 °F)	18 minutes	145 minutes
10 °C (50 °F)	10 minutes	85 minutes
20 °C (68 °F)	6 minutes	50 minutes
30 °C (86 °F)	4 minutes	35 minutes

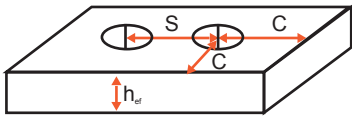
For application at -10 °C (14 °F) store cartridges at 5 °C (41 °F)

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

Design

Terminology and Abbreviations:





h_{ef} = Effective anchorage depth (mm)

f_{cm} = Concrete compressive strength (N/mm²)

S_{cr} = Distance between anchors

C_{cr} = Distance for anchor from free edge (mm)

h_o = Hole depth (mm)

d_o = Drilled hole diameter (mm)

d = Stud or bar nominal diameter (mm)

N_{rk} = Characteristic tensile load (kN)

V_{RK} = Characteristic shear load (kN)

N_{rec} = Recommended load = NRK multiplied with a total safety factor according to local norms (kN)

Rf_{cN} = Close edge reduction factor, tension only

Rf_{cV} = Close edge reduction factor, shear only

Rf_{sN} = Close spacing reduction factor, tension only

Rf_{sV} = Close spacing reduction factor, shear only

Load capacity Data for all Thread Rods:

Thread rod d	Hole diameter do [mm]	Hole depth ho [mm]	Required edge distance to achieve Nrec C cr [mm]	Required edge distance to achieve Nrec S cr [mm]	Min. thickness of concrete member hmin [mm]	Characteristic load in concrete C 20 / 25 NRK(kN)	Recommended load in concrete C 20 / 25 Nrec(kN)
M 8	10	80	120	80	110	14.9	5.0
M 10	12	90	135	90	120	24.6	8.2
M 12	14	110	165	110	140	31.3	10.4
M 16	18	125	190	125	165	44.0	14.7
M 20	24	170	255	170	220	63.2	21.6
M 24	26	210	315	210	270	80.3	26.8

Important Note: The load capacity of the threaded rod by itself must be verified. The anchor hole must be dry.

Load capacity Data for Reinforcing Bar Anchors:

Requirements for the calculation of the characteristics load capacity:
Reinforcing bar S500 ribbed
Min. concrete C20 / 25

Bar diameter d (mm)	6	8	10	12	14	16	20	25
Hole diameter d_o (mm)	8	10	12	14	18	20	25	32
Minimum anchor embedment h_{min} (mm)	60	80	90	100	115	130	140	150

Important Note: The load capacity of the threaded rod by itself must be verified. The anchor hole must be dry.

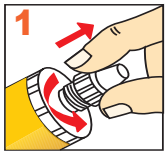
HOW TO USE

Surface Preparation

Mortar and concrete substrates must be at the required strength. No need to be 28 days old. Susbtrate strength (concrete, masonry, natural stone) must be verified. Pull-out tests must be carried out if the substrate strength is unknown. The anchor hole must always be clean, dry, free from oil and grease etc. Loose particles must be removed from the holes.

Mixing

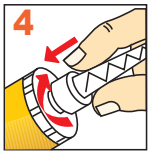
Part A:part B = 10:1 by volume
When the work is interrupted, the static mixer can remain on the cartridge after the gun pressure has been relieved. If the resin has hardened in the nozzle when work is resumed, a new nozzle must be attached.



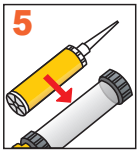
Unscrew and remove the cap.

Pull out the red plug.

Cut the film and remove the red plug.



Screw on the static mixer.



Place the cartridge into the gun and start application.

Note: When the red plug has been removed and before the static mixing nozzle is secured to the cartridge, it is strongly recommended that an initial material purge is carried out. This involves loading the cartridge, with the plug cut off, into a suitable gun and triggering until a consistent distribution of the two components is achieved. This process ensures that suitable material is available, blockages in the static mixer are avoided and gunning is easier.

Yield per hole (mL)

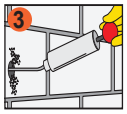
The indicated filling quantities are calculated without wastage. Wastage 10 - 50 %. The filled quantity can be monitored during injection with the help of the scale on the cartridge label.
Substrate and Ambient temperature: -10 °C (14 °F) min. / 40 °C (104 °F) max.

Anchor	Drill	Drill hole depth (mm)																	
mm	mm	8	90	110	120	130	140	160	170	180	200	210	220	240	260	280	300	350	400
8	10	3	4	4	5	5	5	6	6	7	7	7	8	8	9	9	10	11	12
10	12	4	5	5	6	6	6	7	8	8	8	8	9	10	10	11	12	14	15
12	14	5	6	6	6	7	7	8	8	9	10	10	11	11	12	13	14	16	18
14	18	9	10	11	14	14	15	18	19	20	22	23	24	26	28	30	32	37	42
16	18	9	10	11	13	14	15	17	18	19	21	22	23	26	28	30	32	36	40
	20	10	12	12	15	16	17	20	21	22	24	25	26	29	31	33	35	40	46
20	24	12	13	14	15	16	18	22	24	26	28	30	32	36	38	42	48	58	66
	25	18	19	21	23	24	26	30	31	32	36	38	40	44	46	50	54	64	72
24	26	24	25	28	30	33	35	40	43	45	50	55	58	60	65	70	75	100	125

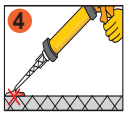
Application

Drill hole with an electric drill to the diameter and depth required. Drill hole diameter must be in accordance with anchor size.

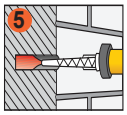
The drill hole must be thoroughly cleaned with a round brush. Brush at least three (3) times. The diameter of the brush must be larger than the diameter of the drill hole.



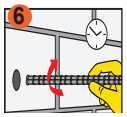
The drill hole must be cleaned after each cleaning step with a blow pump or by compressed air, starting from the bottom of the hole.
Important: use oil-free air.



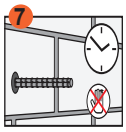
Pump approx. twice until both components come out uniformly. Do not use this material. Release the gun pressure and clean the cartridge opening with a cloth. Attach the mixing nozzle.



Inject the adhesive into the hole, starting from the bottom, while slowly drawing back the static mixer. Avoid entrapping air. For deep holes extension tubing can be used.

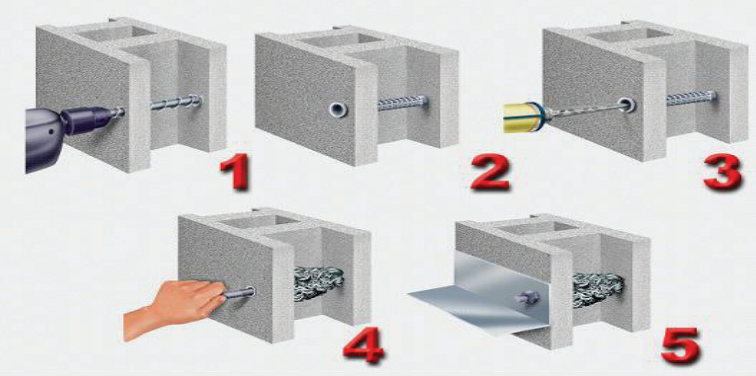


Insert the anchor with a rotary motion into the filled drill hole. Some adhesive must come out of the hole.
Important: the anchor must be placed within the open time.



During the resin hardening time the anchor must not be moved or loaded. Wash tools immediately with Sika® Epoxy Cleaner. Wash hands and skin thoroughly with warm soap and water.
To fix anchors into hollow materials (bricks or blocks) perforated sleeves must be used.
Note: with hollow material do not use rotary hammer drills.

Anchors in hollow concrete blocks:



Clean Up

Collect with absorbent material. Uncured material can be removed with Sika® Epoxy Cleaner. Cured material can only be removed mechanically. Fully-cured material can be disposed of as an household waste in accordance with local disposal regulations.

Limitations

- Sika AnchorFix®-1 must be pre-conditioned at temperatures between 5 and 40 °C (41 and 104 °F) before application. The higher the temperature of the material, the easier it is to gun.
- Due to the wide variety of existing substrates, always perform trials to verify that Sika AnchorFix®-1 is compatible with the substrate to ensure adequate bond strength and that it will not stain or discolour the substrate.
- Sika AnchorFix®-1 possesses a temperature resistance of 80 °C (176 °F) short term (1 to 2 hours) and 50 °C (122 °F) long term when cured.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent SAFETY DATA SHEET containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN

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