

# MasterFlux<sup>®</sup> ANC 920 SF

Universal, High Performance, Epoxy Acrylate Resin Based, Styrene Free, Anchoring Mortar

## Material Description

**MasterFlux<sup>®</sup> ANC 920 SF** is a two-component, high performance thixotropic, styrene free, and epoxy acrylate based chemical anchoring mortar. The product is specially designed for applications where medium and heavy loads are to be fixed in hollow blocks or solid material. Both components of **MasterFlux<sup>®</sup> ANC 920 SF**, packed in a single cartridge with separate compartments, are correctly mixed in the mixing nozzle while pressing the material out of the cartridge.

## Areas of Application

**MasterFlux<sup>®</sup> ANC 920 SF** is a universal anchoring mortar typically used for fixing:

- Anchoring of rebar in preformed holes in concrete
- Fixing of anchoring bolts
- Fixing of bolts, screws and beaming plates
- Installation of bonded rebar/shear reinforcement
- Low temperature applications down to -5°C
- Fixing gates, blinds, antennas and other domestic uses

## Characteristics and Benefits

- Easy to use, no mixing required
- High adhesive power
- Fast curing for quick installation
- For medium and high load fixing
- Can be used in diamond drilled holes
- High early and final mechanical strengths
- Applicable in slightly damp conditions
- Can be used at low or high temperatures
- For use with a standard silicon gun (280 ml)
- Very low shrinkage
- For interior and exterior use
- Suitable for technical applications where high performance is needed
- Product performance is ETA certified.
- Styrene and solvent free formulation

## Processing Method

The performance, durability and safety of the installed product used for anchoring steel (rebar), bolts and screws strongly depends on the substrate, the dimensions of the element, the drilling and cleaning of holes, the substrate temperature and the type of anchoring bolt or bar. It is therefore important that a proper structural assessment of the structural elements to be repaired is carried out by qualified engineers, and that the choice of products, anchor types etc. is based upon such assessment. Guideline information on performance data and dimensioning is given in the tables hereafter.

### (A) Preparation of Substrate

The substrate must be clean, structurally sound, and without substances which can have a negative effect on the adhesion of the chemical anchoring mortar.

Concrete or mortars in which bolts or rods are to be fixed should be at least 28 days old.

Holes can be made using diamond or hammer drilling machines. Depth and diameter of the holes should be determined by the substrate, effective loads and the diameter of the anchor bolts or rebars. The drilled holes need to be cleaned with round brushes and oil-free compressed air directly from a compressor or using special hand pumps. The substrate can be damp, but must be without free standing water.

### (B) Processing

#### Application In Solid Material

Insert the mixing unit of the **MasterFlux<sup>®</sup> ANC 920 SF** cartridge into the back of the hole and squeeze sufficient material while slowly pulling out. Ensure that no air is entrapped while filling the hole. Introduce the anchoring bolt or rebar by pressing and turning till the back of the hole is reached. An excess of material needs to be visible. Respect the waiting times as shown in the tables hereafter, before the anchors or rebars are exposed to loads.

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## Application In Hollow Blocks

Drill a 16 mm hole, clean the hole as mentioned above and insert the sleeve specially designed for this type of application. Close the gasket of this sleeve, press the mixing unit against this gasket and inject, without entrapping air, sufficient **MasterFlux<sup>®</sup> ANC 920 SF** for total anchoring. Introduce the anchoring bolt by pressing and turning till the back of the hole. Do not move the bolt before final setting of the **MasterFlux<sup>®</sup> ANC 920 SF**. Before tightening the anchors and exposing them to loads, respect the waiting times as shown in the tables hereafter.



- Material can be applied at temperatures from -5°C to +35°C, but cartridges have to be stored at +5°C or above.
- **MasterFlux<sup>®</sup> ANC 920 SF** can in unhardened conditions be a pollutant for water or soil. Take the necessary precautions and clean according to local guidelines.

## Working Time

The following chart is a guide for the working time of a **MasterFlux<sup>®</sup> ANC 920 SF** at various ambient temperatures.

Cartridge temperature	5°C to 10°C	10°C to 20°C	20°C to 35°C
Substrate Temperature	5°C to 10°C	10°C to 20°C	20°C to 35°C
Working time	10 min.	4 min.	1 min. 30

## Consumption

Varies

## Curing

Cartridge temperature	Minimum cartridge temperature = +5°C		+5°C to +10°C	+10°C to +20°C	+20°C to +35°C
Substrate Temperature	-5°C to +0°C	0°C to +5°C	+5°C to +10°C	+10°C to +20°C	+20°C to +35°C
Working time	Minimum cartridge temperature = +5°C		10 min.	4 min.	1 min. 30
Curing time on dry concrete	5 h	2 h 30	105 min.	75 min.	45 min.
Curing time on wet concrete	7 h 30	3 h 45	160 min.	110 min.	70 min.

## Cleaning of Tools

All the tools and equipments must be cleaned by soapy water or solvent after the application. After **MasterFlux<sup>®</sup> ANC 920 SF** is hardened, it can only be removed from the surface mechanically.

## Packaging

**MasterFlux<sup>®</sup> ANC 920 SF** is available in cartridges of 410 ml peel pack for standard silicon gun

## Shelf Life

18 months after the production date under appropriate storing conditions.

## Storage

Cartridges should be stored in their original packaging, in the correct shape and in cool, dry conditions (+5°C to +25°C), protected from direct sunlight.

## Point to Consider

- **MasterFlux<sup>®</sup> ANC 920 SF** is in hardened condition resistant to many chemicals. A list of chemicals can be found hereafter.

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## Health and Safety

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

## Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

## Contact

MBT Teknik Yapı Kimyasalları San. ve Tic. A.Ş.  
Eyüp Sultan Mah. Sekmen Cad. Hayy 1000A No:26/8  
Sancaktepe, İstanbul  
Tel: 0216 561 35 45 www.mbt-tech.tr

	
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MBT TEKNİK YAPI KİMYASALLARI SAN. VE TİC. A.Ş.	
Eyüp Sultan Mah. Sekmen Cad. HAYY 1000A No:26 K:5 D:8, 34885 Sancaktepe, İstanbul, Türkiye	
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MasterFlux® ANC 920 SF	
M8 - M30 Ø8-Ø32 Çatlaksız ve çatlaklı betonda kullanım For use in uncracked & cracked concrete Sismik Kategori: C1 Seismic Category: C1	

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Rebar anchoring according BAEL 91				
<p>d : rebar diameter d<sub>1</sub> : drill bit / hole diameter L : effective anchoring depth</p>	Properties of bar Fe E500			
	d (mm)	Min. resistance at breaking point (Kn)	Elasticity limit of Rebar (Kn)	Max. Load Rebar/l.15 (Kn)
	8	27,7	25,2	21,9
	10	43,2	39,3	34,1
	12	62,2	56,5	49,1
	14	84,7	77,0	66,9
	16	110,6	100,5	87,4
20	172,7	157,0	136,5	

Rebar anchoring according BAEL 91						
<p>The working loads are derived from the equation. <b>L = B * (F/dl)</b> Where: L: depth (mm) F: max. load possible on the (Kn) d<sub>l</sub>: drill bit / hole diameter (mm) B: parameter linked to the concrete quality B= 1,51 (C20/25 and Fe E500) B= 1,00 (C35/45 and Fe E500)</p>	Pull-out working loads according BAEL 91 for MasterFlux <sup>®</sup> ANC 920 SF based upon the properties of steel bar HA Fe E500					
	d (mm)	d (mm)	L min. / max. (mm)	F min. / max. (kN)	L min. / max. (mm)	F min. / max. (kN)
	8	10	80/330	5.3/21.9	80/219	8.0/21.9
	10	12	100/429	7.9/34.1	100/284	12.0/34.1
	12	16	120/463	12.7/49.1	120/307	19.2/49.1
	14	18	140/561	16.7/66.9	140/372	25.2/66.9
	16	20	160/660	21.2/87.4	160/437	32.0/87.4
	20	25	200/824	33.1/136.5	200/546	50.0/136.5

Anchorinh in concrete according ETAG N°001								
Installation data – minimum and maximum embedment depth								
<p>d : diameter of threaded rod d<sub>0</sub>: drill bit/hole diameter d<sub>f</sub>: diameter of hole in anchor plate hef: effective anchoring depth Tinst: tightening torque Hmin: minimum thickness of concrete</p>	Nominal diameter	d <sub>0</sub> (mm)	d <sub>f</sub> (mm)	H <sub>ef</sub> (mm) Effective anchor length		Tinst (N.m)	H <sub>min</sub> (mm) Min. concrete thickness	
				h <sub>ef</sub> 8xd	h <sub>ef</sub> 12xd		h <sub>ef</sub> 8xd	h <sub>ef</sub> 12xd
	M8	10	9	64	96	10	100	130
	M10	12	12	80	120	20	110	150
	M12	14	14	96	144	40	130	175
M16	18	18	128	192	80	160	225	
M20	22	22	160	240	150	200	280	

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Anchorin in concrete according ETAG N°001									
Positioning of the holes									
Pull-out and concrete cone failure in non-cracked concrete C20 / 25 to C 50 / 60									
Smin: minimum spacing Cmin: minimum edge distance  Partial safety factor: 1.5 (for concrete cone failure load limits)	Nominal diameter	h <sub>ef</sub> 8xd				h <sub>ef</sub> 12xd			
		Smin (mm)	Cmin (mm)	h <sub>ef</sub> 8xd	Concrete Cone Failure (Kn)	Smin (mm)	Cmin (mm)	h <sub>ef</sub> 8xd	Concrete Cone Failure (Kn)
	M8	35	35	64	25	48	48	96	35
	M10	40	40	80	30	60	60	120	40
	M12	48	48	96	40	72	72	144	60
	M16	64	64	128	60	96	96	192	95
M20	80	80	160	75	120	120	240	115	

Effect of temperature									
Reduction factor for working loads									
Temperature (°C)	-20	0	20	40	60	80	100	120	140
Reduction factor	1	1	1	1	0.9	0.7	0.5	0.4	0.3

Chemical resistance													
Chemical	Water	Salty water	Hot water < 60°C	Petrol	Kerosene	Gasoline	Methanol	Acetone	White spirit	Sodium hydroxide (50 %)	HCl (10% at 20°C)	H2SO4 (50% at 30°C)	Citric acid
Permanent immersion	*	*	*	*	*	*							
Temporary immersion							*	*	*	*	*		*
Not recommended												*	