

MasterFlow[®] 932 AN

Pure epoxy (1:1) resin based high performance anchoring grout

DESCRIPTION

MasterFlow 932 AN is a two component (1:1) pure epoxy resin based high performance anchoring grout for use in cracked and uncracked concrete under normal as well as seismic conditions (seismic category C1). Designed for most demanding structural applications and rebar connections, **MasterFlow 932 AN** offers high load-bearing capacity.

USES & APPLICATIONS

- Structural applications in cracked and uncracked concrete applications in seismic zones (C1)
- Façades
- Post installed rebar connections
- Crash barriers
- Structural steel

APPROVALS & TESTS

- ETA according ETAG 001 Part 1 & 5 Option 1 for anchoring of threaded bars into cracked & uncracked concrete
- ETA according to TR023 for post-installed rebar connections
- Tested according to LEED 2009 EQ c4.1, SCAQMD rule 1168 (2005)
- Fire resistance F240 for reinforcing bars
- A+ as per French VOC Regulation
- ICC-ES Evaluation report for use in cracked and uncracked concrete

FEATURES

- Fixings close to free edges
- Fire tested
- Versatile
- Anchoring without expansion pressure
- High load capacities
- Extended gel/open time
- Suitable for dry and wet holes

PACKAGING

MasterFlow 932 AN is available in boxes of 12 side-by-side cartridges of 400ml & boxes of 12 side-by-side cartridges of 600ml.

INSTALLATION PROCEDURE

Please refer to the method statement or contact BASF Technical Services department.



European Technical Assessment ETA 15/0561. BASF Construction Solutions GmbH, 15. 1020. MasterFlow 932 AN, DoP MF932ANTR029. ETAG 001-Part 1 and Part 5 Option 1 used as an EAD. For fixing and/or supporting to concrete, structural elements (which contributes to the stability of the works) or heavy units.



European Technical Assessment ETA 15/0562 BASF Construction Solutions GmbH, 15. 1020. MasterFlow 932 AN, DoP MF932ANTR023. ETAG 001-Part 1 and Part 5 used as an EAD. For fixing and/or supporting concrete structural elements or heavy units such as cladding and suspended ceilings.

MasterFlow[®] 932 AN

WORKING & LOADING TIMES

Resin cartridge Temperature	T Work	Base Material	T Load
+10 to +15°C	20 mins	+5 to +10°C	24 hrs
		+10 to +15°C	12 hrs
+15 to +20°C	15 mins	+15 to +20°C	8 hrs
+20 to +25°C	11 mins	+20 to +25°C	7 hrs
+25 to +30°C	8 mins	+25 to +30°C	6 hrs
+30 to +35°C	6 mins	+30 to +35°C	5 hrs
+35 to +40°C	4 mins	+35 to +40°C	4 hrs
+40°C	3 mins	+40°C	3 hrs

PHYSICAL PROPERTIES

Property		Unit	Value	Test Standard
Density		g/cm ³	1.5	ASTM D 1875 @ +20°C / +72°F
Compressive Strength	24 hours	N/mm ²	75	ASTM D 695 @ +20°C / +72°F
	7 days	N/mm ²	95	
Tensile Strength	24 hours	N/mm ²	18	ASTM D 638 @ +20°C / +72°F
	7 days	N/mm ²	23	
Elongation at Break	24 hours	%	6.6	ASTM D 638 @ +20°C / +72°F
	7 days		5.9	
Tensile Modulus	24 hours	GN/m ²	5.7	ASTM D 638 @ +20°C / +72°F
	7 days	GN/m ²	5.5	
Flexural Strength	24 hours	N/mm ²	45	ASTM D 790 @ +20°C / +72°F
HDT	7 days	°C	49	ASTM D 648 @ +20°C / +72°F
VOC		g/L	4.5	ASTM D 2369

THEORETICAL NUMBER OF FIXINGS PER CARTRIDGE

Applies to installations in solid substrates only

Cartridge Volume	h _{ef}	Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
		Drilling Ø 12mm	Drilling Ø 14mm	Drilling Ø 16mm	Drilling Ø 20mm	Drilling Ø 25mm	Drilling Ø 32mm	Drilling Ø 40mm
400ml side by side	10d	68	44	31	18	9	4	2+
	12d	56	37	26	15	7	3	1
	20d	34	22	15	9	4	2	1

Note: Jobsite/contractor installations usually result in more resin being injected than the theoretical requirement resulting in lower number of fixings per cartridge. The reduction to the number of fixings per cartridge in practice is greater for smaller diameter holes and shallower embedment depths.

MasterFlow[®] 932 AN

MasterFlow 932 AN with REINFORCING BARS (ANCHOR THEORY)

INSTALLATION PARAMETERS

Diameter of rebar (mm)	10	12	16	20	25	32
Drilled hole diameter (mm)	14	16	20	25	32	40

DESIGN RESISTANCE

Rebar size				Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Effective embedment depth h_{ef}	[mm]			90	110	125	170	250	300
non-cracked concrete temperature range (-40°C / +40°C)									
tension	C20/25	$N_{Rd,p}$	[kN]	18.85	23.70	38.90	66.12	121.55	186.70
	C50/60	$N_{Rd,p}$	[kN]	21.49	27.01	44.34	75.38	138.57	212.84
shear	C20/25	$N_{Rd,s}$	[kN]	9.33	14.67	20.67	57.33	90.00	147.33
cracked concrete temperature range (-40°C / +40°C)									
tension	C20/25	$N_{Rd,p}$	[kN]	14.14	17.77	20.94	35.60	46.75	71.81
	C50/60	$N_{Rd,p}$	[kN]	15.41	19.37	22.83	38.81	50.96	78.27
shear	C20/25	$N_{Rd,s}$	[kN]	9.33	14.67	20.67	57.33	90.00	147.33

RECOMMENDED RESISTANCE

Rebar size				Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Effective embedment depth h_{ef}	[mm]			90	110	125	170	250	300
non-cracked concrete temperature range (-40°C / +40°C)									
tension	C20/25	$N_{Rec,p}$	[kN]	13.46	16.93	27.78	47.23	86.82	133.36
	C50/60	$N_{Rec,p}$	[kN]	15.35	19.30	31.67	53.84	98.98	152.03
shear	C20/25	$N_{Rec,s}$	[kN]	6.67	10.48	14.76	40.95	64.29	105.24
cracked concrete temperature range (-40°C / +40°C)									
tension	C20/25	$N_{Rec,p}$	[kN]	10.10	12.69	14.96	25.43	33.39	51.29
	C50/60	$N_{Rec,p}$	[kN]	11.01	13.84	16.31	27.72	36.40	55.91
shear	C20/25	$N_{Rec,s}$	[kN]	6.67	10.48	14.76	40.95	64.29	105.24

$f_{yk} = 500 \text{ N/mm}^2$

Partial safety factor $\gamma_{1.4}$

For resistance values in higher temperatures, please contact BASF Technical Services.

All the above resistance values are considering combined pull out and concrete cone failure in tension and steel failure in shear.

MasterFlow[®] 932 AN

STORAGE & SHELF LIFE

Cartridges should be stored in their original packaging, the correct way up and in cool dry conditions (+10°C to +25°C) out of direct sunlight. When stored correctly, the shelf life will be for 12 months from the date of manufacture.

NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

QUALITY AND CARE

All products originating from BASF's Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and OHSAS 18001.

* Properties listed are based on laboratory controlled tests.

® = Registered trademark of the BASF-Group in many countries.

BASF_CC-UAE/FI_932AN_05_04/v7/11_16

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this BASF publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by BASF either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not BASF, are responsible for carrying out procedures appropriate to a specific application.