

MasterFlow 648

Three-component epoxy fluid mortar, with high chemical and mechanical resistance, for anchoring machinery and metal structures.

MATERIAL DESCRIPTION

MasterFlow 648 is a solvent-free, high-strength, three-component epoxy fluid mortar. By varying the ratio of component C, the fluidity of the final mixture can be varied. It is applicable for thicknesses from 10 to 150 mm.

FIELDS OF APPLICATION

MasterFlow 648 is indicated for:

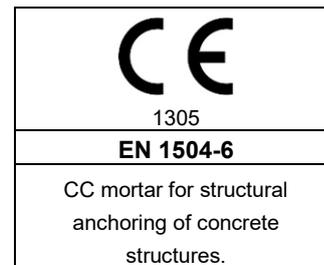
- anchors with precision alignment of machinery in industry (for example in the steel industry, paper mills, chemical industries);
- anchoring of metal structures;
- anchoring of structures subject to dynamic loads;
- application where a quick restart is required;
- refurbishment of flooring and / or parts of flooring, including those suitable for vehicles and also in the presence of traffic and dynamic loads.

FEATURES AND BENEFITS

The peculiar characteristics of MasterFlow 648 epoxy fluid mortar are:

- excellent adhesion: this requirement, thanks to the high fluidity: allows to effectively fill small areas and cavities by casting;
- high tensile strength and tensile strength for bending;
- high adhesion to concrete and steel;
- high resistance to fatigue and creep phenomena, high resistance to dynamic stresses;
- protects the machine from vibrations;
- excellent chemical resistance;
- rapid development of resistance;
- fluidity can be optimized (depending on the kit chosen) to optimize implementation and cost depending on the type of intervention to be carried out;
- dielectricity: (a.c. 1012 Ωm) essential property for isolation from stray currents or dispersions;
- resistance to the most common acids, alkalis, solvents and hydrocarbons;
- waterproof: the material is also suitable for permanent contact with water.

In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the product is provided with the CE marking according to UNI EN 1504-6 and the relative DoP (Declaration of Performance).



CONSUMPTION

Version	Proportion	Weight
Standard version	A+B+4 C	114,90 kg
High fluidity version	A+B+3 C	89,90 kg

PACKAGING

- Comp. A: 11,35 kg can
- Comp. B: 3,55 kg can
- Comp. C: 25 kg bag

STORAGE

Store the product in a covered, cool and dry place (10 ÷ 35°C) away from direct contact with the sun, fire or open flames. If the temperature drops below 10°C, the resin may show an increase in viscosity and the formation of lumps. In these cases, before using it, heat the packages by immersing (unopened) part of the tin in hot water

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Technical Information				
Chloride ion content according to EN 1015-17		<0,05%		
Consistency of the dough		pourable		
Permitted application temperature		from 10°C to 35°C		
Machinability		30°C 50 – 60 minutes 21°C 90 – 120 minutes 10°C 120 – 150 minutes		
Mixing ratios by weight		Standard version A + B + 4 C High fluidity version A + B + 3 C		
Packs		Comp. A: 11,35 kg can Comp. B: 3,55 kg can Comp C: 25 kg bag		
Consumption		Standard version: 2,17 kg/dm ³ High fluidity version: 1,91 kg/dm ³		
Essential characteristic in accordance to 1504-6		Temperature and maturation	Standard fluidity	High fluidity
Compressive strength	ASTM C579 B	8 h 23°C	15 MPa	-
		10 h 23°C	30 MPa	-
		16 h 23°C	66 MPa	-
Compressive strength	ASTM C579	1 g 23°C	85 MPa	75 MPa
		7 gg 23°C	100 MPa	85 MPa
		7gg 60°C	59 MPa	57 MPa
Tensile strength,	ASTM C307	7 gg 23°C	15 MPa	13 MPa
Flexural strength	ASTM C880-74	7 gg 23°C	31 MPa	28 MPa
		7 gg 60°C	28 MPa	24 MPa
		7 gg 77°C	24 MPa	21 MPa
Creep	ASTM C1181	7 gg 60°C	4x10cm/cm	6x10 cm/cm
Elasticity module	ASTM C880-74	7 gg 23°C	15 GPa	11 GPa
		7 gg 60°C	11,6 GPa	8,9 GPa
Coefficient of expansion	ASTM C531		2,4x10-5 cm/cm/°C	41x10-5 cm/cm/°C
Density of the mixed product			2,17 kg/L	1,91 kg/L
Adhesion to concrete	UNI-EN 24624		>3,5 MPa	>3,5 MPa
Adhesion to steel	UNI-EN 24624		>8 MPa	>8 MPa
Linear shrinkage	ASTM C531		0,005%	0,0065%
Glass transition temperature			>62°C	>62°C
Pull-out resistance of steel bars - displacement relative to a load of 75 kN (mm):	UNI EN 1881		<0,6	<0,6

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APPLICATION SHEET

PREPARATION OF THE FOUNDATION AND THE MACHINE

Before positioning the machine, remove any damaged concrete and laitance from the surface of the foundation and then roughen the surface. Eliminate oil, grease, debris and dust from the foundation, the anchorage holes, the bolts and the bearing plate. Check that vents have been made in the plate through which the air can escape. Position, align and level the machine. After having placed the machine, soak the foundation concrete with water for at least 8 hours before grouting. Remove any excess water from the anchorage holes with air jets, sponges or a trap.

FORMWORK

The forms must be sufficiently watertight to avoid absorbing or wicking water out of the grout and must be anchored and bucked to withstand the pressure of the grout when it is placed and levelled. Construct the forms to leave a space of at least 15 cm around the edge of the bearing plate and on the placement side leave a space from the bedplate to accommodate at least 15 cm elevated head box. On all the other sides leave 5 cm gap between the form and the bedplate and 5-10 cm head box. In the case of very large bearing plates, as well as spacing the form further from the bedplate (up to 1,5 m) to accommodate the head box, to aid pouring of the actual grout it may be useful:

- shift the head box further from the bedplate;
- make more fluid mixes (approx. 5-10% more water) to lubricate the concrete foundation, followed by mixes with normal fluidity.
- Caulk the forms to prevent leaks of grout and loss of head.

TEMPERATURE

MasterFlow 648 can be used when the ambient temperature is between 10 and 35°C.

The workability times are as follows:

Temperature	Workability times
30°C	50 – 60 minutes
21°C	90 – 120 minutes
10°C	120 – 150 minutes

However, it is suggested that if the product is used with temperatures above 25°C, appropriate actions must be taken to prevent the material from becoming too fast, such as keeping the bags at cool temperatures and proceeding with application in the cooler hours of the day or at night. For temperatures above 30°C it is necessary to cool the mixture with suitable means below 25°C.

If, on the other hand, the product is used at temperatures below 15°C, appropriate measures must be taken to prevent the hardening times of the mixture from being excessively long. For example, the packages should be stored at temperatures between 20 and 30°C.

Use and set up an artificial heating system (with appropriate compartmentalization of the application area).

MIXING

MasterFlow 648 can be used at a variable fill ratio from 7,0 : 1 (standard version) to 5,6 : 1 (high flow version). When using this guide the temperature of the foundation and the plate is the critical concern, however, the grout and the ambient temperature are also important.

APPLICATION

Check by observing the surface of the water in a container placed on the plate of the machine to be anchored, that the vibrations generated by any machines operating in the vicinity are not transmitted to the foundation of the machine being anchored.

If this occurs, it is necessary to stop these machines until the setting is complete and hardening has begun (at least 10-12 hours at 20°C).

Cast continuously without interruption and avoiding excessively moving or vibrating the mortar under the plate. The mortar must be poured from one side only to facilitate the escape of air. In any case, avoid pouring the mortar from two opposite sides.

Make sure that the mortar has completely filled the space between the plate and the foundation, possibly with the help of flexible rods slid back and forth under the base of the machine.

SAFETY INSTRUCTION

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

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OTHER SERVICES

For price analysis, specifications, supplementary brochures, references, reports and technical assistance, visit the website www.master-builders-solutions.com/it-it or contact infomac@mbcc-group.com.

Scan the QR code to visit the product page and download the latest version of this datasheet.



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This version supersedes all the previous ones.