MasterFlow 980

Ready-mixed, rheodynamic, expansive grout with very high performance and excellent durability for precision structural anchoring and restoration of reinforced concrete in thicknesses from 100 to 200 mm.

MATERIAL DESCRIPTION

MasterFlow 980 is an expansive cementitious grout for very thick grouting (> 10-20 centimeters) between bearing plates and foundations.
MasterFlow 980 is in conformity with the requirements and acceptable limits of expansive mortars for grouting given by:

- UNI 8996, UNI 8148 for expansion both in the plastic and hardened phases;
- UNI 8998, regarding the absence of bleeding.

FIELDS OF APPLICATION

MasterFlow 980 is indicated for precision anchorages such as those for gas or steam turbines, alternators, compressors, paper mill machines, face and horizontal lathes, milling machines, planers, presses, hot rolling mills, drawing machines, boring machines, balancing machines, cranes, diesel engines, pumps, wind vanes, hoisting systems, crushing mills, marble cutting machines, pillars in steel or prestressed concrete.

FEATURES AND BENEFITS

MasterFlow 980 the acceptance limits specified in the standard UNI EN 1504 part 3 and 6.
MasterFlow 980 features:

- very high flowability and pourability: fundamental property for anchorages under bearing plates because it ensures that all the voids are filled easily, including the ones furthest from the placement side;
- compliance with requirements of Italian laws and standards regarding expansive mortars for grouting: this requirement is the basic presupposition for the material to be successfully used for precision anchorages;
- high mechanical performance both with short and long curing: this property guarantees a long working life of the machinery anchorage;
- high adhesion to the concrete and the steel, watertightness,
- high resistance to fatigue, thermal cycling and high temperatures and high resistance to attack by lubricating oils: all fundamental characteristics of a durable material.

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 1504-3 and 1504-6 and the relative DoP (Declaration of Performance).

CE 1305		CE 1305
EN 1504-3		**EN 1504-6**
Cement based mortar (CC) for structural repair of concrete structures		CC mortar for structural anchoring of concrete structures.
R4 class		

CONSUMPTION

The coverage is 2090 kg to make 1 m^3 grout.

PACKAGING

MasterFlow 980 is available in 25 kg bags.

STORAGE

Store the product in a dry and sheltered place at a temperature between +5°C and +35°C inclusive.

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Technical Information			
1504-3 class		R4	
Typology		CC	
Chloride content EN 1015-17		<0.05%	
Mixing ratio		2.5-2.9 l for bag (10-11.7%)	
Consistency of mix		Pourable	
Temperature of application		From 5°C to 35°C	
Packaging		25 kg bag.	
Consumption		2090 kg/m3	
Workability time (at 20°C)		80 minutes	
Minimun thickness		100 mm	
Maximum thickness in single laye		200 mm	
Essential characteristic in accordance to 1504-3 and 1504-6 with a dosage of water of 17.5%		**Limits and classes**	**Performances**
Adhesion to concrete	UNI EN 1542 on MC 0.40 substrate (with w/c ratio = 0.40) according to UNI EN 1766	≥ 1,5 MPa	≥ 6,0 MPa
Resistance to accelerated carbonation	UNI EN 13295	Carbonation depth ≤that of reference concrete MC 0.45 (with w/c ratio = 0.45) according to UNI EN 1766	Specification obsolete
Elastic modulus	UNI EN13412	a 28 gg ≥20.000 MPa	28000 MPa
Expansive characteristics		in the plastic phase, UNI 8996 restrained UNI 8147 at 24 hours	> 0.3 % > 0.03 %
Bleeding	UNI EN 8998	-	Absent
Compression strength	UNI EN 12190	a 28 gg ≥ 45 MPa	1 d > 35 MPa 7 dd > 65 MPa 28 dd > 75 MPa
Tensile strength in bending	UNI EN 196-1	-	1 d > 6 MPa 7 dd > 8 MPa 28 dd > 9 MPa
Impermeability to water measured as resistance to water penetration under direct pressure	UNI EN 12390/8	-	Average penetration depth < 5 mm
Pull-out resistance of steel bars	RILEM-CEB-FIP RC6-78	-	>30 MPa
Resistance to lubricating oils, oil bath for 60 days at 40 ° C,	ASTM C1579	-	No deterioration
Determination of the indirect tensile strength of the specimens,	UNI EN 12390/6		> 6 MPa
Interface surface quality evaluation test	ASTM C1339-02		> 85%
Resistance to the extraction of bars steel - displacement relative to a load of 75 kN (mm):	UNI EN 1881		<0.6
Scroll after mix	EN13395-2		>55

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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

Whenever the temperature at the time of application is between +5 and +10 °C, the mechanical strength will develop more slowly. It is advisable to use warm mixing water (+30 ÷ +50°C), to soak the substrate with warm water and to apply the grout in the central hours of the day. Do not apply at temperatures below +5°C. Whenever the temperature at the time of application is between +30 and +35°C, it is advisable to use cool mixing water (+5 ÷ +10°C), to saturate the substrate with cold water and to apply the grout during the coolest hours of the day.

MIXING

Using a concrete mixer mix the whole content of the sacks for 3-4 minutes with 2,5 litres of water for each sack.
For small quantities a drill with whisk attachment at low speed may be used for mixing.
If necessary add more water to obtain the required consistency without exceeding the maximum quantity set to 2,9 liters per bag.

APPLICATION

By observing the surface of water in a container placed on the bearing plate of the machine to be anchored, check that the vibrations generated by any operating machines in the vicinity are not being transmitted to the foundation of the machine being anchored. If they are, these machines must be stopped until the grout has set and hardening has started (at least 10-12 hours at 20°C).
Place the grout continuously and quickly; avoid moving the grout excessively or vibrating it beneath the bearing plate. The grouting must be done from one side only to avoid air entrapment. Under no circumstances carry out placement from two opposite sides. Make sure that the grout has completely filled the void between the bearing plate and the foundation, if necessary sliding flexible rods backwards and forwards under the machine
bedplate.

CURING

All the parts exposed to air must be immediately protected against evaporation and cured for at least 24 hours by wetting or covering with wet rags or by spraying with the curing compound MasterKure.
Lack of curing could lead to the formation of hairline cracks or crazing in the part of the grout exposed to the air, especially in warm dry climates, without, however, affecting the anchorage. If necessary cut back and form the exposed parts of the grout after it has finished setting and begun hardening (10-12 hours at 20°C).
If the machine manufacturer recommends removal of the bearings, this must be done only after 48 hours.

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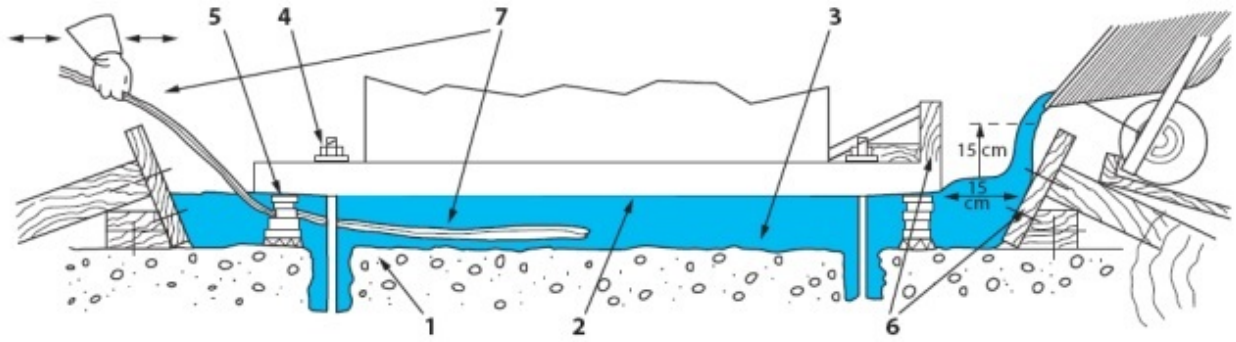

1:support, foundation
2 plate, machine
3 Filling with MasterFlow 928
4 Log bolts
5 any spacers
6 Formwork
7 Any metal rods or chains to be used to facilitate sliding in case of particularly difficult castings

SAFETY INSTRUCTION

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

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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Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

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