



The Chemical Company

MASTERFLOW[®] 544

High strength, non-shrink cementitious mortar

Description

MASTERFLOW[®] 544 is a ready to use product in powder form, which requires only the on-site addition of water to produce a non-shrink mortar of predictable performance.

Applications

MASTERFLOW[®] 544 is formulated for use at plastic consistency, and may be used with confidence for bedding, repairing, grouting and void filling operations such as:

- Concrete repairs.
- Void filling between old and new concrete.
- Floor patching.
- Packing under columns and stanchions.
- Caulking of concrete pipes.
- Filling tie-bar holes.
- Re profiling of stanchion or mast bases when formwork is undesirable.
- Pile cap reprofiling and encapsulation.

Advantages

- Non shrink
- Adjustable consistency
- Proven and predictable performance
- Trowellable
- High bond strength to steel and concrete
- Early strength development even at pourable consistency
- Good fatigue and impact resistance
- Impermeable

Packaging

MASTERFLOW[®] 544 is supplied in 25kg bags.

Application procedure

Surface preparation:

All surfaces in contact with the material must be sound, dense and clean. All laitance and any unsound material should be removed - an evenly scabbled, slightly textured surface is required, with all dust and dirt removed. (Note: heavy scabbling, creating deep troughs or high peaks is unsuitable). Surfaces must be pre-wetted to thoroughly dampen the concrete, but any free surface water must be removed before MASTERFLOW[®] 544 is placed.

For large areas of application, such as floor toppings or concrete repair, CONCREXIVE 1414 epoxy bonding agent should be used on the interface to ensure total bond.

Feather edging is not recommended. Minimum acceptable depth is 10mm. Maximum recommended depth for toppings is 50mm.

Mixing:

First dry mix contents of bag, then thoroughly mix with the specified amount of water.

Plastic consistency:

Add 3.9 litres of water to one 25kg bag and mix thoroughly.

Pourable consistency:

Add 4.4 litres of water to one 25kg bag and mix thoroughly.

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Notes:

1. To achieve the properties described, water additions should be accurate to ± 0.1 litre.
2. Water should be slowly added over a 1½ minute period and then mixing continued for a further 2 minutes.
3. It is important that a forced action mixer is used to ensure complete dispersion of the water and thorough mixing thereafter.

Placing:

All of the mix should be placed within 45 minutes of water addition. No water should be added for retempering.

Placing must not take place below 5°C. Below 8°C it is advisable to tent before placing, to warm the substrate to 8°C minimum, and subsequently to maintain the placed mortar at 8°C minimum.

For plastic consistencies tamping is essential to achieve good compaction. Do not vibrate.

Curing:

Curing of the exposed surfaces of MASTERFLOW[®] 544 must commence immediately. Following placement the exposed surfaces must be continuously cured at moderate temperatures for seven days after finishing operations. This will prevent early drying shrinkage and help to develop strength, durability and other desired properties. Any deficiencies in the method of curing may also reduce the amount of initial expansion which is needed to offset later drying shrinkage. The use of MASTERKURE curing compounds is strongly recommended.

Grouting a space using plastic mortar:

Formwork is erected on 3 sides (and is prepared for the fourth). Plastic mortar is rammed into

place, filling all voids. Without delay, a vertical or sloping form is fixed on the fourth side, the grout is surcharged and is consolidated by thorough hand punning (i.e., caulking by ramming). Just before final set, the surplus grout is removed.

Typical properties

Properties listed are only for guidance and are not a guarantee of performance

When mixed with 3.9 litres of water a 25kg bag will have the following properties:			
Compressive Strength N/mm ² (ASTM C109)	24 hrs	29.0	
	3 days	34.5	
	7 days	50.5	
	28 days	55.0	
Tensile Strength N/mm ² (BS 6319 : Part 7)	24 hrs	1.5	
	3 days	3.2	
	7 days	3.8	
	28 days	4.0	
Flexural Strength N/mm ² (BS 4551)	24 hrs	4.5	
	3 days	8.0	
	7 days	9.0	
	28 days	10.0	
Initial Surface Absorption (ISAT BS 1881 : Part 111)	10 mins	0.02	
	30 mins	0.01	
	60 mins	<0.01	
	120 mins	-	

Storage

Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction. Storage life is approximately 12 months when stored as above in original sealed bags.

Precautions

The temperature of both the grout and elements coming into contact with the grout should be in the range of +5°C to +35°C. Do not use water in an amount or at a temperature that will produce a consistency more than fluid or cause mixed grout

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to bleed or segregate. **DO NOT OVERWORK AND AVOID USING MECHANICAL VIBRATION. UNDER NO CIRCUMSTANCES SHOULD MASTERFLOW[®] 544 BE RETEMPERED BY THE LATER ADDITION OF WATER.** It is essential that a mechanically powered grout mixer is used to obtain the optimum properties.

Yield / consumption

12.9 - 13.4 ltr / 25kg bag dependent on water addition rate.

78 x 25kg bags / m³

Note

For free flowing grouting operations consider the use of MASTERFLOW[®] 524. Precision grouting of heavy machinery use MASTERFLOW[®] 928 or in critical operating conditions; MASTERFLOW[®] 885.

When a very rapid set is required in areas subject to chemical spillage or contamination, use epoxy grouts MASTERFLOW[®] 400 / 410.

For additional information on MASTERFLOW[®] 544 mortar or other non-shrink grouting and repair materials, contact your BASF representative.

Warning

As with other products containing Portland cement, the cementitious material in MASTERFLOW[®] 544 mortar may cause irritation. Avoid contact with eyes and prolonged exposure. In case of contact with the eyes, immediately flush with plenty of water for at least 15 minutes. Call a

physician. In case of contact with skin, wash skin thoroughly.

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.

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REQUEST AND REFER TO RECOMMENDED
INSTALLATION PROCEDURES FOR
MASTERFLOW[®] GROUTS PRIOR TO USE

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As all BASF technical datasheets are updated on a regular basis it is the user's responsibility to obtain the most recent issue.

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