

# MasterFlow<sup>®</sup> 544 (Formerly known as Masterflow 544M)

High strength, non-shrink, cementitious mortar

## DESCRIPTION OF PRODUCT

**MasterFlow 544** is a ready-to-use product in powder form, which requires only 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

## ADVANTAGES

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

## PACKAGING

**MasterFlow 544** is supplied in 30kg 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,

**MasterBrace 1414RS**, epoxy bonding agent, should be used on the interface to ensure total bond.

If the benefit of the expansive formulation is to be gained, **MasterFlow 544** must be always placed in rectangular spaces with truly vertical edges. 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 4.7ltr of water to one 30kg bag and mix thoroughly.

## POURABLE CONSISTENCY:

Add 5.3ltr of water to one 30kg bag and mix thoroughly.

## NOTES:

1. To achieve the properties described, water additions should be accurate to  $\pm 0.1$ ltr.
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 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 re-tempering.

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.

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## CURING:

Curing of the exposed surfaces of **MasterFlow 544** must commence immediately. Following placement, the exposed surfaces must be continuously cured for 7 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 **MasterKuer** 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 placed and is consolidated by thorough hand punning (i.e., caulking by ramming). Just before final set, the surplus grout is removed.

## TYPICAL PROPERTIES

When mixed with 4.7ltr of water, a 30kg bag will have the following properties:		
Compressive Strength	24 hours	29.0
	3 days	34.5
(BS 6319 Part 2):	7 days	45.0
	28 days	55.0
Tensile Strength	24 hours	3.5
	3 days	3.6
(BS 6319 Part 7):	7 days	4.2
	28 days	5.0
Flexural Strength	24 hours	4.5
	3 days	8.0
(BS 6319 Part 4):	7 days	9.0
	28 days	10.0
Slant Shear Bond	28 days	37.0
N/mm <sup>2</sup>		
(BS 6319 Part 4):		
Initial Surface	10 minutes	0.02
Absorption	30 minutes	0.01
(ISAT BS 1881 Part 5)	60 minutes	<0.01
	120 minutes	-

## STORAGE

Store out of direct sunlight, clear of the ground, on pallets protected from rainfall. Avoid excessive compaction. Storage life is approximately 18 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 to bleed or segregate.

DO NOT OVERWORK AND AVOID USING MECHANICAL VIBRATION.

UNDER NO CIRCUMSTANCES SHOULD **MasterFlow 544** BE RE-TEMPERED BY THE LATER ADDITION OF WATER.

It is essential that a mechanically powered grout mixer be used to obtain the optimum properties.

## YIELD/CONSUMPTION

15.5-16ltr/30kg bag dependent on water addition rate 65 x 30kg bags/m<sup>3</sup>

## NOTE

For free flowing grouting operations, consider the use of **MasterFlow 544**. For precision grouting of heavy machinery, use **MasterFlow 928**.

When a very rapid set is required in areas subject to chemical spillage or contamination, use epoxy grouts **MasterSeal 915** or **MasterFlow 648..**



We create chemistry

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For extreme chemical resistance, grout products are available from the CEILCOTE range.

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 eyes, immediately flush with plenty of water for at least 15 minutes; and 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 STATEMENT

All products manufactured by BASF Egypt, or imported from BASF affiliate companies worldwide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007 standards.

\* Properties listed are based on laboratory controlled tests.

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