

# MASTERFLOW<sup>®</sup> 500

Cementitious non-shrink precision grout for structural underpinning

## DESCRIPTION

**Masterflow 500** is a ready-to-use, non shrink, catalysed, iron reinforced grout, specially formulated for underpinning existing foundations. Masterflow 500 may be placed in a dry pack (damp pack), plastic or flowable consistency in applications between 25mm and 110mm thickness.

## RECOMMENDED FOR

- Packing of "take-up" joints between existing foundations or walls and new piers and pads.
- Arresting settlement of footings due to inadequate bearing of soils.
- "Pack-up" joints between driven or pre-cast piers and superimposed structures or bearers.

**Masterflow 500** is not recommended for use where structurally unsound members are encountered, where "V" shaped joints are encountered, as expansion or vibration may force mortar out, or where a lifting action may also be needed.

## FEATURES AND BENEFITS

- **Freedom from shrinkage**
- **Complete filling of intricate and irregular spaces**
- **Maximum bearing support which eliminates point stresses when wedging occurs**
- **High early and ultimate compressive and flexural strengths**
- **Dense, watertight joints**

## PERFORMANCE DATA

Typical compressive strengths at different consistencies. Tests conducted on 50mm cubes - confined in moulds with top restraining cover plates to 24 hours, demoulded and immersed in lime saturated water until tested.

Age	Plastic (i) (MPa)	Flowable (ii) (MPa)
3 hours	0.9	0
6 hours	7	2
24 hours	27	17
3 days	43	36
7 days	52	42
28 days	69	60
1 year	86	72

(i) 100% on Flow Table ASTM C-109, 5 drops in 3 seconds.

(ii) 135% on Flow Table, ASTM C-109, 5 drops in 3 seconds.

The performance data is typical and based upon controlled laboratory conditions. Actual performance on the job site may vary from these values based on actual site conditions.

## ESTIMATING DATA

20kg of **Masterflow 500** will yield 8.33 litres (0.0083m<sup>3</sup>). Allow 240kgs of **Masterflow 500** for each 0.1m<sup>3</sup> of joint cavity or 24kg per 10 litres.

Water demand is dependent on consistency required.

## APPLICATION

These suggestions represent generally accepted procedures for successful installations. They may be followed, modified or rejected by the owner, engineer, contractor or their representatives since they, and not BASF Construction Chemicals, are responsible for planning and executing procedures appropriate to a specific installation under the prevailing site conditions.

### Preparation

Remove all laitance and unsound material, trim and level the underside of existing footing. Repair any holes or defects using a slurry bond coat and a stiff (1-part cement, 2-parts **Masterflow 500**) mix. Construct underpinning wall, pad or pier between the courses, woodfloat to leave a slight depression in the centre.

Ensure adequate clearance: 25mm for 250mm footings, 25-30mm for 300-600mm footings, up to 75mm for very wide footings.

If possible allow underpinning work to harden for at least several days. To allow for shrinkage to take place especially in concrete piers a longer period between casting and grouting is desirable, at least 7 days. Then clean out and thoroughly dampen footing and head of underpinning.

Install a backboard or side retaining forms so mortar can be firmly packed into the joint.

It is usual to work on excavating and repairing alternate areas of soil/footings; the size of areas to be worked on depends on bearing areas required and the strength and integrity of the structure above.

### Priming

Remove any excess water and apply a creamy slurry of **Masterflow 500** to limited areas of both surfaces.

### Placing

Whilst the slurry is still damp (shiny), tightly pack the joint with a stiff mix of **Masterflow 500** and clean water (mix thoroughly). If the joint is more than 40mm, up to 10kg of 3-5mm clean quartz gravel or stone may be added to each 20kg bag.

Do not use mortar which has stiffened.

### Packing

Pack the mortar in strips from the back out to the workface. Just before the mortar hardens, tool carefully to obtain maximum density.



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## Finishing

After mortar has stiffened, trim exposed joints, flush and compact with wood float. Overlapping mortar may unduly expand and flake off. Allow further hardening before ironing with a steel rod to produce a polished surface. Where joints will be seen, finish the mortar off short of the face to allow capping with plain sand/cement mortar to cover up the rusty colour of **Masterflow 500**. Capping should be done immediately after the mortar has received its final compaction.

For more information about application, please obtain a copy of the BASF "Application Guide for Dry-Packing Masterflow<sup>®</sup> Cementitious Grout" from your local representative.

## CURING

Approximately one hour after rodding, dampen joints and saturate adjoining work. Damp cure for at least 3 days to allow grout to expand tightly up against the sole of the footing.

## PACKAGING

**Masterflow 500** is available in 20kg bags.

## SHELF LIFE

**Masterflow 500** has a shelf life of approximately 12 months when stored in a cool dry environment.

## PRECAUTIONS

- Do not use **Masterflow 500** in applications where it cannot be properly compacted and wet cured.
- **Masterflow 500** is not toxic but contains Portland cement and thus can be irritating to skin and eyes. Wear simple dust masks and gloves when handling. Eye protection is recommended to prevent injury from metallic aggregate. Wash off splashes of grout with clean water. If irritation persists, seek medical advice.

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the BASF Construction Chemicals **Material Safety Data Sheet (MSDS)** from our office or our website.

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## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this **BASF Construction Chemicals** 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. **BASF Construction Chemicals data sheets are updated on a regular basis and it is the user's responsibility to obtain the most recent issue.**

## 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 Construction Chemicals**, are responsible for carrying out procedures appropriate to a specific application.

**BASF Construction Chemicals Australia Pty Ltd** Incorporated in NSW A.B.N. 46 000 450 288

**Sydney-Head Office:** 11 Stanton Road Seven Hills, NSW 2147 Australia Ph. (02) 8811 4200

**Newcastle:** (02) 4961 3819 **Brisbane:** (07) 3633 9900 **Townsville:** (07) 4774 7344 **Melbourne:** (03) 9549 0300

**Adelaide:** (08) 8139 7500 **Perth:** (08) 9366 2600 **Kalgoorlie:** 0417 772 355

**BASF Construction Chemicals New Zealand Head Office:** 45 William Pickering Drive, Albany, Auckland Ph: (09) 414 7233

**BASF Websites:** [www.basf-cc.com.au](http://www.basf-cc.com.au) [www.basf-cc.co.nz](http://www.basf-cc.co.nz) [www.basf-ugc.com](http://www.basf-ugc.com)