BASF
The Chemical Company

MasterFlow® 525 (Formerly known as Masterflow ®525)

High flowability non-shrink cementitious grout, non-metallic

DESCRIPTION

MasterFlow® 525 is a powder blend for easy production of a pourable to exceptionally fluid, slightly expansive, Portland cement grout by addition of potable water only.

STANDARD COMPLIANCE

MasterFlow® 525 meets the requirements of the U.S Corps of Engineers Specification CRD-C621-82A for fluid grout and ASTM C1107-91.

SPECIAL FEATURES

MasterFlow® 525 exhibits excellence in various fresh and hardened state properties:-

- Excellent initial and retained fluidity.
- Cohesion and suspension of aggregates.
- Non bleeding, void free bearing surface.
- Excellent strength development.
- Corrosion inhibition (non-chloride)
- Controlled expansion and shrinkage compensation mechanisms.
- Exceptional tortuous path flow.

TYPICAL USES

MasterFlow® 525 is suitable for but not limited to the grouting of:-

- Structural Columns
- Machine bases
- Holding down bolts
- Dowel and starter bars
- Bridge bearings
- Underpinning and repairs
- Filling cavities in concrete or steel sections

PHYSICAL PROPERTIES

FRESH STATE

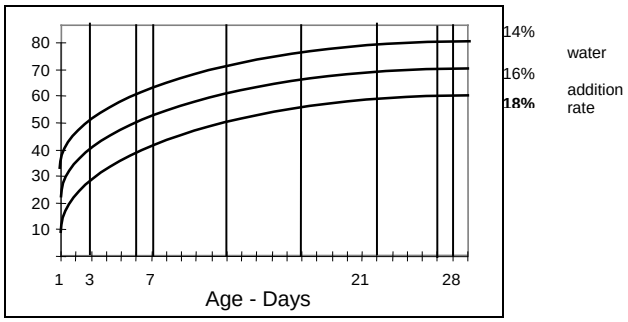
Mixed with a maximum of 4,5 litres of potable water per 25kg bag of **MasterFlow® 525** powder the following properties are typical (at 25°C). Flow cone (U.S. Corps of Engineers) exits in less than 30 sec.

Initial set	4 – 6 hours
Final set	7 – 8 hours
Wet density	2190 kg/m³

HARDENED STATE

MasterFlow® 525 in laboratory conditions at 25°C typically achieves:-

COMPRESSIVE STRENGTH - UNDER LABORATORY CONDITIONS



FLEXURAL STRENGTH

2 MPa	1 day
6 MPa	7 days
8 MPa	28 days

EXPANSION PHASES

Plastic - up to initial set

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FREE EXPANSION

Plastic - up to 0.5% (linear)
Hardened - up to 0.5% (linear)

INSTALLATION DETAIL

PREPARATION

All areas to be grouted must be free of grease or dirt and the concrete must be well soaked for several hours prior to grouting. Failure to do this will result in migration of grout mix water to the dry adjacent concrete.

SHUTTERING

All fluid flow grouting should be by provision of a suitable head box, pouring board and receiving reservoir to allow the flow of grout to expel entrapped air.

SELECTION OF CONSISTENCY

Where access is easy, (+50mm clearance), and flow path short (up to 500mm) a flowable or pourable mix may be used. The minimum clearance for flowable applications is 30mm.

For restricted access (less than 50mm clearance), or flow of half to three metres, a fluid grout will be required. The minimum clearance for fluid applications is 15mm.

MIXING

The following water addition rates, per 25kg of grout powder, will produce the consistency indicated:-

Plastic	2.5 - 3 ℓ
Flowable	3.5 – 4 ℓ
Fluid (very flowable)	4.5 ℓ

The use of a mechanical mortar mixer is recommended, in particular for large pours, but an agitator attached to a drill or a spade and wheelbarrow can be successful. Add two thirds of the required water to the mixer or wheelbarrow first and add the grout powder to the water. For fluid grouts, mix to a thick plastic consistency first to break lumps then add final amounts of water to achieve consistency required.

PLACING

Grout should be flowed across the shortest dimension possible. The depth of the pouring head-board should be not less than 100mm above the top level of the gap to be grouted. This will suffice for most applications, but a 200mm pouring head may be needed for tortuous paths and or flow distances of 2-3 metres.

MasterFlow® 525 may be placed with diaphragm or other conventional fluid transfer pumps.

The principles of self-levelment of fluids apply to placement of **MasterFlow® 525**. All blind cavities must be vented and fresh grout must be added continuously to the pouring head to maintain hydraulic pressure and avoid entry of air.

Do not use vibrators, but chain agitation or strapping techniques are effective in breaking any tension head that might prevent free flow.

LIMITATIONS

Do not grout on a 5ºC and falling temperature scale. Avoid excessive heat (35-40ºC) especially where grout is to be placed in 100mm or more lifts. Cooling of mix water or covering of steel with wetted hessian may be necessary to reduce heat.

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The maximum lift should not exceed 150mm unless precautions are taken.

Note: Consult BASF Construction Chemicals SA technical services for advice on grouting in adverse conditions, pumping or other placing techniques.

CURING

All exposed areas of grout should be covered immediately after placement, until set, after which it should be coated with a good quality curing compound or kept wet for at least 7 days.

YIELD

Per cubic metre of flowable grout: 77 to 80 pockets (1925 to 2000kg) will be needed.

PACKAGING

25 kilogram polylined bags.

STORAGE

Store under cover, out of direct sunlight and protect from extremes of temperatures. Shelf life–12 months.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult BASF Construction Chemicals SA's Technical Services Department.

SAFETY PRECAUTIONS

As with all chemical products, care should be taken during use and storage to avoid contact with eyes mouth, skin and foodstuffs (which can also be tainted with vapour until product is fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals.

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 Construction Chemicals South Africa are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, 2008.

* Properties listed are based on laboratory controlled tests.

STATEMENT OF RESPONSIBILITY	The technical information and application advice given in this BASF 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.
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, are responsible for carrying out procedures appropriate to a specific application.

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