



The Chemical Company

MASTERFLOW[®] 1688UW

Heavy duty epoxy resin grout for underwater applications

DESCRIPTION

MASTERFLOW 1688 UW is a high density high performance epoxy based grouting system designed for structural applications in submerged or water affected conditions. **MASTERFLOW 1688 UW** is a solvent free, two-component system, with a high flow capability.

RECOMMENDED FOR

- Areas requiring grouting below the water level and a moisture insensitive bond to the concrete substrate
- Structural repair of wharf piles
- Baseplates and machinery grouting
- Crane rails and tight clearances
- Exterior grouting and repair applications
- Coating structures (eg boat ramps) effected by tidal changes during applications

FEATURES AND BENEFITS

- **High early and ultimate strengths**
- **High bond strength to steel and concrete correctly prepared**
- **Supplied in pre-measured volumes eliminating the need for on site measuring and ensuring product success**
- **Easily pumped through suitable equipment**
- **Displaces water**
- **Excellent chemical resistance against oils, mineral acids, seawater, fuels and alkali solutions**
- **Resistance to vibration and high repetitive dynamic loads**
- **Solventless – shrink free**

PERFORMANCE DATA (Typical) 23°C

Compressive strength	
24 hours	86 MPa
7 days	93 MPa
Tensile strength	30 MPa
Bond strength to concrete	concrete fails
Bond strength to steel	13MPa

Chemical Resistance

MASTERFLOW 1688 UW resists most hydraulic and lubricating oils, common organic solvents and alkalis including strong caustic solutions. Chemical resistance depends on the chemicals involved, their concentration, temperature and degree of exposure.

Good housekeeping practices such as immediate cleanup of all spillage will greatly extend the working life of the product.

SPECIFICATIONS

	Part A	Part B	Mixed
Supply Form	Dark Grey Viscous Paste	Clear Thin Liquid	Dark Grey Liquid
Mixed Viscosity			4.5 Pa.s
Mixed Density			2kg/L
Temperature during Application (internal locations)			5°C - 35°C
Pot Life			30-50mins at 23°C

APPLICATION

Application Thickness

- Suitable minimum and maximum thickness depends on a number of factors including clearance, distance to be flowed and ambient, surface and product temperatures.
- A header form is generally required for long flows.
- 40mm maximum thickness per pour without aggregate.

Surface Preparation

To obtain maximum performance:

- 1) Concrete should be well cured, at least 28 days old and have a minimum compressive strength of 25MPa.
- 2) Clean surface thoroughly to remove all contaminants such as dirt, oil, grease, wax, rust and coatings. All algae and marine growths should be removed prior to application of the grout.
- 3) Remove laitance and roughen surface to ensure good commercial blast standard by high pressure water blasting or grit blasting.

Formwork

Must be strong and leakproof, and should be placed within 20-25mm of base plate edge. In marine applications it is important that the formwork protects the grout from wave action. Coat formwork with heavy grease or cover with polythene film to allow easy removal of forms.

Mixing

MASTERFLOW 1688 UW is formulated with a mix ratio of 3.4:1 by volume, Part A resin to Part B hardener. Units may not be split.

Transfer contents of Part B to Part A container. Mix for 5 minutes using a slow speed electric drill with a flat paddle. If it is to be applied underwater allow to stand for 10-15 minutes before placing. Avoid entrapping air. Use without delay. Pot life is approximately 30-50 minutes at 23°C.



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- 1) Machine Bases, Crane Rails
Clearances must be such that grout will flow without forming air pockets - provide ventholes. Grouting operations must be continuous with a minimum head of 15mm. For intricate voids gentle strapping may be required to assist flow.
- 2) Anchor Bolts, Dowels, Starter Bars
Pump or use tremmies for bolts in situ. For bolts placed into pre-formed holes, prefill the hole with grout then slowly work the bolt into the grout.

For pile repairs it is recommended that the void be partially filled with 8-10 mm river gravel. The grout should be applied if possible using a tremmie to ensure the grout is allowed to access all the voids.

CURING

No damp curing or special curing compounds are required. Cure time will vary depending on quantity mixed and placed and ambient temperature.

The larger the volume and the higher the temperature, the shorter will be the cure time. Initial set at 23°C will be in 4-6 hours. **MASTERFLOW 1688 UW** will be fully cured with maximum physical strength and chemical resistance at 7 days at 23°C. Do not install equipment before full cure has been attained or creep may occur.

CLEANING

Mixing equipment can be cleaned with **Thinner No. 1**.

POT LIFE

Pot life will vary depending on quantity mixed and placed and temperature. The larger the volume and the higher the temperature, the shorter will be the pot life. As a guide, the pot life of a 8.8L kit mixed at 23°C would be approximately 30 minutes.

SHELF LIFE

MASTERFLOW 1688 UW has a shelf life of 12 months if stored unopened in original containers at moderate temperatures.

ESTIMATING DATA

MASTERFLOW 1688 UW is available in a two component pack which yields 8.8 litres when mixed.

PACKAGING

Two-component system available in an 8.8 Litre kit comprising:

Part A Resin	6.8 Litre
Part B Hardener	2.0 Litre

PRECAUTIONS

READ ALL SAFETY DIRECTIONS AND WARNINGS ON TINS BEFORE USE.

- 1) As with all epoxy products, wear protective overalls and gloves - prolonged contact with skin should be avoided as it could produce dermatitis, particularly with people whose skin may be sensitive to epoxy resin systems.
- 2) Ensure adequate ventilation.
- 3) Mix entire contents of each unit as supplied. Do not attempt to split units unless accurate measuring can be assured.

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 **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** 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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