

MASTERFLOW® 830

Cementitious high strength non-shrink precision grout

DESCRIPTION

MASTERFLOW 830 is a non shrink precision grout formulated to provide ample working time when mixed and placed at flowable consistency. It contains specially graded natural aggregate and provides high early and ultimate compressive strengths. **MASTERFLOW 830** is normally placed at a flowable consistency to completely fill voids between 10mm and 100mm. Thicknesses greater than 100mm are possible with the addition of aggregate.

RECOMMENDED FOR

All precision, non-shrink grouting applications with clearances of 10mm or more including:

- Critical equipment baseplates, soleplates and columns.
- Precast wall panels, beams, columns, structural building members and curtain walls.
- Patching poured in place concrete structures e.g. honeycombing, using preplaced aggregate techniques.
- Underpinning.
- Anchoring dowels, bolts and other fixings.
- Applications requiring high early compressive strengths and high ultimate compressive strengths.

FEATURES AND BENEFITS

- **High strength** - provides good early and ultimate strengths which ensure quick return to service and long term durability
- **Non shrink** - hardens free of bleeding, settlement and drying shrinkage when placed at flowable consistency
- **Flowable consistency** - ensures complete filling of even intricate voids often without the need for pumping and strapping
- **Ample working time** - remains placeable – up to 1 hour - even at high ambient temperatures
- **Dense, impermeable grout** - provides a good watertight seal
- **Non staining** - free of metallic aggregate, similar in appearance to plain concrete.
- **Economical** - greater volumes of grout can be mixed and handled with less labour.
- **Easy to use** - requires no special mixing equipment, it can be mixed in a standard concrete mixer or in a pail using a grout stirrer.
- **No added chloride.**
- **Strict quality control** - ensures reliable and consistent product performance.
- **Provides complete non shrink performance-** when tested in accordance with simulated Bedplate Technique.
- **Compliance with codes** - Meets the non-shrink requirements of ASTM C1090 and CRD-C 621, Corps of Engineers Specification for Non Shrink Grout; tested to the requirements of AS1478.2 "Methods of sampling and testing admixtures for concrete, mortar and grout".

PERFORMANCE DATA

Strength Development

The strength of the grout is often the determining factor in deciding when loads can be put on structural members or machinery. The strength of the grout is dependent on the amount of mixing water used, ambient and substrate temperature, curing and age of the hardened grout.

Typical rate of strength development when placed at 'flowable' consistency at 23°C.

Age at Test	Compressive Strength
1 day	25 MPa
3 days	42 MPa
7 days	55 MPa
28 days	65 MPa

Test Method: AS1478.2 Appendix A

For applications requiring higher compressive strength, refer to **MASTERFLOW 870**, **MASTERFLOW 880** or BASF Construction Chemicals range of epoxy grouts.

Flow Retention

Flow retention when placed at 'flowable' consistency at 23°C.

Age at Test	Flow	Retention
Initial	47cm	100%
After 30 minutes	35cm	90%
After 1 hour	24cm	75%

Test Method: AS1478.2 Appendix D

Bleeding, Plastic Density and Setting Time

Plastic properties when placed at 'flowable' consistency.

Temp.	Bleeding (%)	Plastic Density (kg/m ³)	Setting Time	
			Initial (hr:min)	Final (hr:min)
23°C	0	2145	4:40	6:00

Test Method: Bleeding: AS1012.6
Plastic density: AS1012.5
Setting time: AS1012.18

Volume Change

Volume change when placed at 'flowable' consistency at 23°C.

Age at Test	Volume Change
1 day	Positive
3 days	Positive
7 days	Positive
28 days	Positive

Test Method: ASTM C1090 (CRD-C621)

NOTE: The data shown is based on controlled laboratory tests. Reasonable variations from the results shown can be expected. Field and laboratory tests should be conducted on the basis of the desired placing consistency rather than strictly on indicated water demand. If the



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project requires that strength tests be made on site do not use cylinder moulds. Compressive strength should be determined in 50mm cube moulds fitted with compression cover plates in accordance with AS 1478.2 Appendix A.

VOC content: 3g/L Test method: SCAQMD 304-91

ESTIMATING DATA

20kg of **MASTERFLOW 830** mixed to 'flowable' consistency produces approximately 11.0 litres (0.011 cubic metres) of grout.

Water Demand

Actual amount of water required will depend on desired consistency for the job and temperature (both ambient and grout).

For any given consistency more water will be required at high temperatures, and less at low temperatures.

MASTERFLOW 830 is designed to be placed at a 'flowable' consistency which will give 45-50cm lateral flow in the flow trough (AS1478.2 Appendix D).

As a guide, 20kg of **MASTERFLOW 830** mixed at 23°C requires approximately 3.6 litres of water to provide the recommended lateral flow when using a tilting barrel or paddle type mixer. When using a grout stirrer, this water demand will be slightly increased.

DO NOT USE WATER IN AN AMOUNT OR AT A TEMPERATURE THAT WILL CAUSE THE MIXED GROUT TO BLEED OR SEGREGATE.

APPLICATION

For application directions on preparation, forming, mixing, placing and curing **MASTERFLOW 830**, as well as the precautions to take in hot and cold weather, refer to "Application Guide for MASTERFLOW® Cementitious Precision Grouts" available from your local BASF Construction Chemicals Technical Sales Representative. For situations requiring 'dry pack' (damp pack) application, refer to **MASTERFLOW 95** or **MASTERFLOW 500**.

SHELF LIFE

MASTERFLOW 830 has a shelf life of approximately 12 months when stored in a cool dry environment.

PACKAGING

MASTERFLOW 830 is packaged in 20kg bags.

PRECAUTIONS

MASTERFLOW 830 is not toxic, but contains Portland cement. It has an alkaline nature and thus can be irritating to skin and eyes. Wear simple dust masks and gloves when handling. 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** 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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