

# MasterFlow<sup>®</sup> 950

High strength, non-shrink cementitious grout

## DESCRIPTION

**MasterFlow 950** is a ready to use product in powder form, which requires only the on-site addition of water to produce a high strength (compressive strength >90N/mm<sup>2</sup>) non-shrink grout of predictable performance.

## APPLICATION

**MasterFlow 950** is formulated for use at any consistency from fluid to plastic, and may be used with confidence for bedding, grouting and precision bearing operations such as:

- Gas or steam turbines
- Generators
- Presses
- Crane rails
- Milling machines
- Precast elements
- Anchor bolts

## ADVANTAGES

- Non shrink.
- Adjustable consistency.
- Proven and predictable performance.
- Excellent workability retention even at high ambient temperatures.
- High bond strength to steel and concrete.
- High early strength development even at fluid consistency.
- Good fatigue and impact resistance.
- Impermeable.
- High compressive strength

## PACKAGING

**MasterFlow 950** is supplied in 25kg moisture-resistant bags.

## APPLICATION PROCEDURE PREPARATION

The surface onto which the grout is to be applied should be scraped to remove laitance and expose aggregate. Do not use bush hammers or similar preparation

equipment that can crush the aggregate but leave it in place. The surface must be free of oil, dust, dirt, paint, curing compounds, etc. Soak area to be grouted with water for 24 hours prior to grouting to minimize localized absorption and to assist in the free flow of the grout. Surfaces should be damp but free of standing water.

Particular attention should be paid to bolt holes to ensure that these are water-free. Use oil free compressed air to blow out bolt holes and pockets as necessary.

Base plate, bolts, etc. must be clean and free of oil, grease and paint etc. Set and align equipment. If shims are to be removed after the grout has set; lightly grease them for easy removal.

Ensure formwork is secure and watertight to prevent movement and leaking during the placing and curing of the grout. The area should be free of excessive vibration. Shut down adjacent machinery until the grout has hardened.

In hot weather, base plates and foundations must be shaded from direct sunlight. Bags of grout should be stored in the shade prior to use.

In cold weather, the temperature of base plates and foundations should be raised to >10°C.

## MIXING:

In hot weather use cool water to bring the mixed grout temperature to <30°C.

In cold weather use warm water to raise the mixed grout temperature to >10°C.

Damp down the inside of the grout mixer with water prior to mixing the initial batch of **MasterFlow 950**. Ensure the mixer is damp but free of standing water. Add the pre-measured quantity of water. Slowly add the **MasterFlow 950**, mixing continuously. Mix for at least five minutes until a smooth, uniform, lump free consistency is achieved.

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## PLACING

Lengths of metal strapping laid in the formwork prior to placing may be necessary to assist grout flow over large areas and in compacting and eliminating air pockets. Pour the grout continuously. Maintain a constant hydrostatic head, preferably of at least 15 cm.

On the side where the grout has been poured, allow 10 cm clearance between the side of the form and the base plate of the machine.

On the opposite side allow 5-10 cm clearance between the formwork and the base plate.

**MasterFlow** grouts are suitable for use with most types of pumping equipment.

Immediately after **MasterFlow 950** grout is placed, cover all exposed grout with clean damp hessian, and keep moist until grout is firm enough to accept a curing membrane.

Should the grout shoulders require finishing work, this should be carried out prior to application of the curing membrane. We recommend the use of a curing membrane from our **MasterKure** range.

## SHOULDERS

Due to differences in temperature between the grout under the base plate, and exposed shoulders that are subject to more rapid temperature changes, debonding and / or cracking can occur. Avoid shoulders wherever possible.

If shoulders are required they should be firmly anchored with reinforcing to the substrate to prevent debonding.

## FLOWABLE GROUTING TECHNIQUES

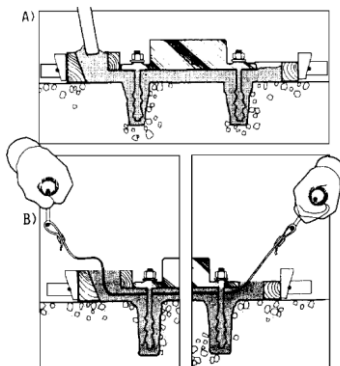


Diagram A illustrates the use of grout surcharge to ensure complete filling under a base.

Diagram B shows that straps can be used to aid grout flow under a wider base. A gentle “sawing” action with the strap allows the grout to flow without segregation for greater distances.

## TYPICAL PROPERTIES

Properties listed are only for guidance and are not a guarantee of performance.

## STRENGTH DEVELOPMENT

The strength of grout is dependent on many factors which include mixing, water addition, curing, temperature and humidity. The table below gives typical average strengths of **MasterFlow 950** at 25°C, when mixed with 3.25 liters of water.

Consistency	3.25 ltrs / 25 kg
Compressive Strength BS 1881 Part 116	
1 day	>40N/mm <sup>2</sup>
3 day	60N/mm <sup>2</sup>
7 day	70N/mm <sup>2</sup>
28 day	90N/mm <sup>2</sup>
Water penetration (BS EN 12390 Part 8)	<2mm
Rapid chloride permeability (ASTM C1202 / AASHTO 277)	Very low
Flexural Strength @ 28 days	11N/mm <sup>2</sup>

## BLEED WATER

No bleed water is apparent (ASTM C-232) at recommended water addition rates.

## STORAGE

Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction. Storage life is approximately 12 months when stored as above in original sealed bags.

Failure to comply with the recommended storage

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conditions may result in premature deterioration of the product or packaging. For specific storage advice consult Master Builders Solutions's Technical Services Department.

## PRECAUTIONS

The temperature of both the grout and elements coming into contact with the grout should be in the range of >10°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.

**MasterFlow 950** should be laid at a minimum thickness of 20mm and to a maximum depth of 100mm.

To simulate on-site conditions it is necessary to restrain cubes for the first 24 hours immediately after casting.

**DO NOT OVERWORK AND AVOID USING MECHANICAL VIBRATION.**

**UNDER NO CIRCUMSTANCES SHOULD MASTERFLOW 950 BE RETEMPERED BY THE LATER ADDITION OF WATER.**

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

## YIELD/CONSUMPTION

12.25 liters/25kg bag at 3.25 liters water addition. 78 x 25kg bags / m<sup>3</sup>

## WARNING

As with other products containing Portland cement, the cementitious material in **MasterFlow 950** grout may cause irritation. Avoid contact with eyes and prolonged irritation. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Call a physician. In case of contact with skin, wash skin thoroughly.

## NOTE

The fatigue and impact resistance of **MasterFlow 950** grout is exceeded only by the metallic reinforced, non-catalyzed **MasterFlow 4800** grout. The specially

prepared metallic aggregate in this product contributes to impact resistance, a desirable property of grout to be subjected to severe dynamic operating forces and repetitive loading such as found in steel and aluminum rolling mills, crane rails, heavy presses, etc.

When a very rapid set is required in areas subject to chemical spillage or contamination, use epoxy grouts **MasterFlow 400** or **MasterFlow 648**.

For additional information on **MasterFlow 950** grout or other non-shrink grouting materials, contact your local Master Builders Solutions representative.

## NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local Master Builders Solutions representative.

Master Builders Solutions reserves the right to have the true cause of any difficulty determined by accepted test methods.

## QUALITY AND CARE

All Master Builders Solutions Products are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health and safety standards of ISO 9001 and Master Builders Solutions ESHQ recommendations.

\* Properties listed are based on laboratory controlled tests.

® = Registered trademark of the MBCC-Group in many countries

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## CONTACT

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### Disclaimer:

In view of widely varying site conditions and fields of application of our products, this technical data sheet is meant to provide general application guidelines only. This information is based on our present knowledge and experience. The customer is not released from the obligation to conduct careful testing of suitability and possible application for the intended use. The customer is obliged to contact the technical help-line for fields of application not expressly stated in the technical data sheet under "Fields of Application". Use of the product beyond the fields of application as stated in the technical data sheet without previous consultation with Master Builders Solutions and possible resulting damages are in the sole responsibility of the customer.

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