

MasterFlow® 648

High strength high flow epoxy grout

DESCRIPTION

MasterFlow 648 is an epoxy resin-based precision grout used to secure critical equipment for proper alignment and transmission of static and dynamic loads. With carefully balanced physical properties and excellent resistance to chemical attack, elevated service temperatures, vibration and rotational torque, **MasterFlow 648** is formulated for easy installation, with good flow characteristics suitable for pouring or pumping, low dust generation and soap and water cleanup.

MasterFlow 648 is available in all regions of the world, supported by trained Mater Builders Solutions Construction Chemicals sales and technical personnel with experience in the specification and installation of epoxy grouts on every continent.

RECOMMENDED USES

MasterFlow 648 is recommended for grouting heavy-duty machines exerting high dynamic loads on foundations. It is suitable for a minimum 25mm gap below the baseplate.

The product is ideal for situations where:

- Gaps below baseplates are narrow and / or where the baseplates are large.
- Machine baseplates can attain high temperatures in service. e.g., heavy duty compressors in petrochemical industries.
- Machines exert high vibratory / tensile loads on foundations. e.g., ball mills in the steel industry.
- The grout bed is likely to be exposed to spillage of aggressive chemicals. e.g., grout beds below machines in chemical industries.
- Machines have to be commissioned quickly. e.g., production machines taken out for maintenance

FEATURES AND BENEFITS

- **High flow**—Effective grouting of even narrow gaps and large baseplates.
- **High tensile and flexural strengths**—Efficient transfer of operational loads to foundation including high dynamic loads.
- **High strengths even at elevated temperatures**—Maintains alignment and level even with elevated baseplate temperatures.
- **High bond strength**—Protects machine from vibrations by effective dampening.

- **High resistance to creep**—Maintains alignment and level over long time.
- **High early strengths**—Allows early load transfer and rapid commissioning of machines.
- **Variable fill ratio**—Flow ability can be optimised for ease of application and to maximise the cost of effectiveness.
- **Chemical resistance** for use in challenging environments
- **High early and ultimate strengths** for rapid turnaround
- **Low exothermic** – can be used for grouting at high ambient and surface temperatures
- **Low dusting** for added worker comfort and safety
- Globally available for consistent project results

APPLICATION

For information about application, please obtain a copy of the Master Builders Solutions “Application Guide for MasterFlow Epoxy Grouts” from your local representative.

Curing

MasterFlow 648 is self-curing.

Pour Thickness

MasterFlow 648 can be used for deep pours. When pour thickness exceeds 150mm kindly contact Master Builders Solutions technical team. With the unique variable fill ratio of **MasterFlow 648** the minimum pour thickness can be as low as 25mm in many applications.

ESTIMATING DATA

Flowable	26.075 Kg	11.2 L
Fluid	20.375 Kg	9.7 L

PACKAGING

	Flowable	Fluid
Kit size	26.075 Kg	20.375 Kg
Part A	2.57 Kg	2.57 Kg
Part B	0.805 Kg	0.805 Kg
Part C	22.7 Kg	17 Kg

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PROPERTIES

	Flowable	Fluid
Compressive Strength at 25° C (MPa) (ASTM C 579, Method B)		
24 Hours	≥75	≥70
7 Day	≥100	≥100
Tensile strength at 25° C, 7Day (MPa) (ASTM C 307)	13	13
Flexural strength at 25° C, 7Day (MPa) (ASTM C 580)	28	28
Effective Bearing Area (%) (ASTM C 1339)	≥85%	≥85%
Coefficient of thermal expansion, mm/mm/° C (ASTM C 531)	2 to 3 x10 ⁻⁵	3 to 4 x10 ⁻⁵
Creep @ 60° C, 28 days(mm/mm) at 4.2 MPa (ASTM C 1181)	4 to 5 x10 ⁻³	5 to 6 x10 ⁻³
Density, Kg/l (ASTM C 905)	~2.3	~2.1
Modulus of elasticity - ASTM C580 @ 23°C (ASTM C 580-02)	16 GPa	15 GPa
Shrinkage, Unrestrained; Linear, %, (ASTM C 531)	0.016	<0.04
Working time	~ 90 min at 23°C	~ 90 min at 23°C
Exotherm	Low Exotherm	Low Exotherm

Properties listed are based on laboratory-controlled tests.

Compressive strengths were determined at control laboratory condition, expect reasonable variation (i.e. ±5 N/mm²)

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.

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Chemical Resistance

MasterFlow 648 resists non oxidising mineral acids and salts, caustics, dilute oxidising acids and salts, plus some organic acids and solvents. Chemical resistance depends on the chemicals involved, their concentration, temperature and degree of exposure.

Fill Ratio

The fill ratio is the weight of aggregate to that of the combined resin and hardener components. **MasterFlow 648** is designed to be utilised at a variable fill ratio from 1:6.72 (flowable) to as low as 1:5.0 (fluid).

MasterFlow 648 maintains a high bearing area when fill ratios are decreased. In addition, physical properties, including high temperature performance, are maintained.

CLEANING

Clean tools and mixer with soap and water

WATCHPOINTS

Full installation guidelines are provided in the **MasterFlow Epoxy Grout** handbook and this should be read before the start of any installation

- Do not add solvent, water, or any other material to the grout
- Do not alter the mix proportions
- Contact your local representative for a pre-job conference to plan the installation
- Always use a head box
- Substrate temperature must be greater than 15°C
- Ensure material is conditioned by storing at ambient temperatures up to 25°C
- Cold material will exhibit decreased flowability and reduced strength development
- Fluid & Flowable grout versions can be placed to a minimum thickness of 25mm (Depends upon the base plate dimensions and the method of application)

- Chamfering the concrete edge helps reduce thermal cracking. Following proper installation procedures also reduces the potential for cracking
- Proper application is the responsibility of the installer

SHELF LIFE

MasterFlow 648 (Part A, B & C) can be stored in tightly closed original containers for 12 months each in controlled environments.

PRECAUTIONS

It is highly recommended to use necessary PPE (Gloves, mask etc.,) during installation of the product. In case of Incidents of direct inhalation, causing dizziness/giddiness, loss of consciousness, contact with eyes etc, seek immediate medical advice. The requirements may vary depending on the application areas. Please ensure to have proper ventilation while working in confined areas. Contact Master Builders Solutions representative in case you need further details or refer to the material safety datasheet of the product to know more.

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**STATEMENT OF
RESPONSIBILITY
(Disclaimer)**

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NOTE

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