

MasterFlow® 648

Epoxy based, high strength 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, vibration and 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 **Master Builders Solutions** Construction Chemicals sales and technical personnel with experience in the specification and installation of epoxy grouts on every continent.

FEATURES AND BENEFITS

- High early and ultimate strengths for rapid turnaround
- Low exothermic – can be used for grouting at high ambient and surface temperatures up to 45°C
- Low creep maintains equipment alignment
- Low-dusting for added worker comfort and safety
- Non shrinkage
- Excellent flowability with high bearing area for even load distribution
- Excellent adhesion to concrete for optimum load transfer and vibration dampening
- Chemical resistance for use in challenging environments
- Resistance to water and chloride intrusion in wet and aggressive environments
- Resistance to impact and dampens torque to protect equipment and extend service life
- Pumpable for maximum productivity on large grout installations
- Globally available for consistent project results

FIELD OF APPLICATION

- Precision alignment of compressors, generators, pumps, fans and electric motors
- Crane rail grouting
- Grouting of rolling, stamping, grinding, crushing, drawing and finishing mills, forging hammers and other equipment subject to high torque, impact and vibration

* **MasterFlow® 648** can be used in the following industries;

The following list consists of only examples and does not form a complete and comprehensive list. Please contact **Master Builders Solutions** Construction Chemicals for further information on the application possibilities.

- Chemical processing
- Oil and Gas extraction, refining, processing and distribution
- Power generation
- LNG production, storage and transmission
- Pulp and paper production

- Steel and aluminium manufacturing
- Mining
- Other heavy industry

MIXING RATIO

| MasterFlow® 648 Mixing Ratios | Part A | Part B | Part C |
|-------------------------------|----------|----------|---------------|
| Flowable | 5.136 kg | 1.614 kg | 22,7 kg x 2 |
| Fluid | 5.136 kg | 1.614 kg | 22,7 kg x 1,5 |

PACKAGING

52.15 kg set (~ 26 litre)

MasterFlow® 648 Part A : 5,136 kg tin

MasterFlow® 648 Part B : 1,614 kg tin

MasterFlow® 648 Part C : 2x22,7 kg Kraft Bag

WATCH POINTS

- Do not add any solvent etc. into the mixture during the application
- Do not change the mixing ratios.
- Contact your local representative for a pre-job conference to plan the installation
- Always use a head box
- Do not apply at temperatures below +5 °C
- For exterior surface applications, the surface must be protected from sun, wind, rain or frost for the first 24 hours.
- Make sure that the material is mixed in the correct mixing ratio.
- Resinous materials' pot life and curing times vary depending on the relative humidity, substrate and ambient temperature. Reaction gets slow in low temperatures and it causes to extension on pot life and working time. On the other hand high temperatures speed up the reaction, which results to short pot life and working time. For full curing of material, both the substrate and ambient temperature shouldn't be under allowed application temperature.
- Do not use vibrator for compacting the grout.
- Ensure material is conditioned by storing at ambient temperatures up to 25°C for a minimum of 48 hours before use. Failure to do so will result in significant reduction in pot life at elevated temperatures
- Cold material will exhibit decreased flowability and reduced strength development
- Consult **Master Builders Solutions** technical services representative before placing lifts above the specified range.
- 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

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FINISHING AND CLEANING

Tools and mixer must be cleaned immediately after use with suitable solvents. Cured material can only be removed mechanically.

STORAGE

It should be stored in its original unopened package in a dry and closed environment at + 5 °C to + 25 °C. For short-term storage, a maximum of 3 pallets should be placed on top of each other and should be shipped with the first in first out system. For long-term storage, pallets should not be stacked on top of each other.

SHELF LIFE

Shelf life is 12 months when stored as above in original sealed bags.

HEALTH AND SAFETY PRECAUTIONS

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

| Technical Properties | | | | |
|--|--|-------------------|-----------------------|-----------------------|
| Property | Standard | Unit | Data | |
| | | | Flowable | Fluid |
| Density | EN 1015-6 | g/cm ³ | 1,974 | 1,891 |
| Compressive Strength 1 day 7 days | ASTM C 579 | MPa | >75 >100 | >70 >85 |
| Flexural Strength (7 gün) | EN 196-1 | MPa | >25 | >17 |
| Modulus of Elasticity (7 gün) | TS EN 13412 | GPa | >16 | >15 |
| Adhesion Strength (28 gün) | TS EN 1542 | MPa | Concrete failure | Concrete failure |
| Pull-out Strength dry wet | EN 1881 (Displacement at 75 kN load ≤ 0,6 mm) | mm | | 0,12 0,08 |
| Creep Under Sustained Tensile Load dry wet | EN 1544 (Replacement after 3 months under load of 50 kN ≤ 0,6 mm) | mm | 0,11 0,13 | 0,16 0,11 |
| Bearing Area | ASTM C 1339 | % | | >85 |
| Pot Life | +23°C | minites | 60 | 50 |
| Thermal Expansion Coefficient | EN 1770 | mm/mm. °C | 23,9x10 ⁻⁶ | 31,1x10 ⁻⁶ |
| Chloride ion content | EN 1015-17 (≤ %0,05) | % | yok | yok |
| Application Thickness | - | mm | Min.100 Max. 300 | Min. 20 Max. 150 |
| Application Temperature | - | - | +5°C +35°C | |
| Recoatible after | +23°C | hours | 18-24 | |
| Fully cured | +23°C | days | 7 | |

Typical values are obtained from the test results in 23°C and 50% relative humidity conditions. High temperatures shorten the curing and working time, lower temperatures extends the durations.

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DISCLAIMER

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti.** is only responsible for the quality of the product **Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

CONTACT INFORMATION

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MasterFlow® 648 Technical Data Sheet -Revision Date: 12/2020

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| 1020 Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti. Adres: Barbaros Mah. Begonya Sok. Nidakule Kuzey Ataşehir, C Kapısı No:3 E/5, 34746 Ataşehir İstanbul / Türkiye 20 DOP NO: 02.1504.6.007 1020 – CPR – 040 065838 | |
| EN 1504-6:2006 MASTERFLOW 648 Çelik Donatı Çubuğunun Ankranjlanması (Anchoring of reinforcing steel bar) | |
| Çekip Çıkma Dayanımı : 75kN yük etkisiyle yerdeğiştirme (Pull out strength displacement: at load of 75kN) | ≤0,6mm |
| Klorür İçeriği (Chloride ion Content) | ≤%0,05 |
| Camsıya geçiş sıcaklığı (Glass transition temperatures) | ≥45°C |
| Çekme yükü etkisiyle sünme : 50kN yükün sürekli şekilde 3 ay uygulanmasından sonra yer değiştirme (Creep under tensile load displacement: after continuous loading of 50kN for 3 months) | ≥0,6 mm |
| Yangına tepki (Reaction to fire) | D-s2,d0 |
| Tehlikeli maddeler (Dangerous substances) | Madde 5.3'e uygun (Comply with clause 5.3) |