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# 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 BASF 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 BASF 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

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Technical Properties				
Property	Standard	Unit	Data	
			Flowable	Fluid
Density	EN 1015-6	g/cm <sup>3</sup>	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	minutes	60	50
Thermal Expansion Coefficient	EN 1770	mm/mm.°C	23,9x10 <sup>-6</sup>	31,1x10 <sup>-6</sup>
Chloride ion content	EN 1015-17 (≤ %0,05)	%	0	0
Application Thickness	-	mm	min. 100 max. 300	min. 20 max. 150
Application Temperature	-	-	+5°C +35°C	
Recoat 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.

## MIXING RATIO

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

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### 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 BASF 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

### 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.

### DISCLAIMER

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