



The Chemical Company

MASTERFLOW® 402

Epoxy Based Grout

Description of Product

MASTERFLOW® 402 is epoxy based grout and repair mortar with three components including well graded quartz aggregate.

Ministry of Public Works Pos. No: 04.613/8-b

Fields of Application

- Repair of runways and track in airports,
- Repair of concrete pavements,
- Fixing of prefabricated beams in bridge joints,
- Mounting heavy machines to the foundations,
- Machine foundations under heavy dynamic loads,
- Repair of crane runways and high strength required mountings,

- Column - beam connections in the reinforced concrete bridge structures.
- Mounting the steel columns to the reinforced concrete foundations.
- Repair and maintenance of reinforced concrete marine structures,
- Repair of underground reinforced concrete structures,
- Repair and insulating of wide cracks on vertical structural elements, beams and ceilings.

Features and Benefits

- Can be applied without primer.
- Pourable.
- Resists to chemicals.
- High mechanical strengths.
- High abrasion and impact resistance.

Technical Data

Product Chemistry	Epoxy Resin	
MASTERFLOW® 402 Comp. A	Epoxy Hardener	
MASTERFLOW® 402 Comp. B	Quartz Aggregate	
MASTERFLOW® 402 Comp. C		
Mixed Density	2.00 ± 0.05 kg/liter	
Compressive Strength (20°C) TS EN 196		
1 day	>35 N/mm ²	
7 days	>80 N/mm ²	
Flexural Strength (20°C) TS EN 196		
1 day	>20 N/mm ²	
7 days	>30 N/mm ²	
Bonding Strength (7gün) to concrete to steel	>2.0 N/mm ² >3.0 N/mm ²	
Application Thickness	Min. 4 mm Max. 50 mm	
Application Temperature	+5°C - +35°C	
Service Temperature	-15°C - +80°C	
Port Life	30 minutes	
Recoat after (20°C)	18 - 24 hours	
Fully Cured at 20°C	24 hours	



Typical values are obtained from the test results of 4x4x16 mortar prism in 23°C and 50% relative humidity conditions. High temperatures shortens the curing and working time, lower temperatures extends the durations.



MASTERFLOW® 402

- High bonding strength to the concrete and steel.
- Long pot life.
- Non-shrink.
- Solvent free.

Application Procedure

Preparation of Substrate

The concrete surfaces must be sound, clean and dry. It shouldn't be weakened by over-troweling and lack of curing. The concrete should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. If there is a water leakage it must be drained or properly plugged. Steel surfaces should be cleaned from rust by sand blasting and if needed new reinforcement should be installed. The edges of the broken surfaces should be saw cut.

Preparation of Machine Foundation

Before the mounting of the machine the loose particles should be removed from the surface and concrete surfaces should be roughened before grouting. Steel base plates of the machine should be dry and cleaned from oil, grease, rust and dust, which cause de-bonding of the grout. Proper holes should be drilled on to the steel base plates for draining the air under the machine during grouting. After these steps machine should be mounted and fixed to the foundation. Apply proper release agent to the shims before application.

Formwork

Forms should be made of tough materials and well mounted for resisting to fresh grout pressures. There should be min. 5 cm between the formwork and machine base plate in the grouting direction for casting the material into the form. For ensuring the filling of the spaces under machine base plate, forms should be elevated in the casting side and enough hydrostatic pressure obtained. In some cases, forms should be elevated up to 1.5m in the casting side, using custom shaped pipes etc. should be required for grouting under huge plates. For preventing the leakage and loose of hydrostatic pressure the formwork should be done properly.

Mixing

MASTERFLOW® 402 has three components in two pails and in one bag, produced according to right mixing ratio. Material temperature should be between 15-25 °C before mixing. Component B should be added into the Component A without any remaining material in the pail. It should be mixed with using a proper mixer (~300rpm) for polymer mixing. Mix the components at least 3 minutes to have a homogenous mixture. Then the mixture should be put in to a clean, dry, mixing bucket and the Component C should be added into the bucket. Mix the components at least 3 minutes to have a homogenous mixture.

Mixing Ratios

MASTERFLOW® 402	Comp. A	Comp. B	Comp. C
Quantity	2,000 kg	1,1250 kg	12,500 kg
Mixed Density	2,00 kg / liter		

Application Method

Repair Applications

MASTERFLOW® 402 should be applied to the prepared surface by using a steel spatula or steel trowel. Application thickness should be between 4 - 50 mm. Open areas should be protected from the rain, wind, and similar aggressive whether conditions during the first 2 hours after finishing repair.

Grouting

The vibration caused by the surrounding machines should be observed and if necessary all the machines shut down until the grout sets (2 hours in +20°C).

Grout should be cast in only one side of the form continuously and the grout thickness should be between 4-50mm in single layer. For preventing air gaps do not cast material in two side of the machine. Do not use vibrator. For compacting the grout a steel or plastic hooked bar should be used. Do not release the formwork before 2 hours (in +20°C). Open areas should be protected from

MASTERFLOW® 402

the rain, wind and similar aggressive whether conditions during the first 2 hours after finishing repair.

In the case of unneeded excessive mortar outside of the machine plate, the grout can be broken after removing the formwork. Don't move the shims in two days after grouting. After starting the machine all the bolts should be checked and re-fixed if needed.

Coverage

2.00 kg/m² for obtaining 1mm thick layer.

Watchpoints

- Be sure that the material has been mixed in right mixing ratio.
- During the application the substrate and environment temperature should be between 5-35°C.
- Resinous materials' pot life and curing times vary depending on the relative humidity, substrate and environment 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 environment temperature shouldn't be under allowed application temperature.
- **MASTERFLOW® 402** is provided in ready to mix pails. Do not add any solvent etc. into the mixture during the application.
- Mixing should be made with proper mixers and do not allow mixing by hand.
- Open areas should be protected from the rain, wind, etc. aggressive whether conditions during the first 2 hours after finishing repair.
- Do not use vibrator for compacting the grout.

Cleaning of Tools

After the application all tools should be cleaned with a proper detergent or solvent such as thinner. **MASTERFLOW® 402** can be cleaned with only mechanical abrasion after hardening.

Packaging

10 kg set
Component A : 2.000 kg pail
Component B : 1.125 kg pail
Component C : 12.500 kg bag

Storage

Store in original container in cool (+5°C - +25°C) and dry indoor conditions.

Shelf Life

18 months under proper storage conditions after production date.

Health and Safety Precautions

It is dangerous to get close to the store areas with fire. The store must be well ventilated. Work clothes, protective gloves, glasses and mask defined in Labour Laws must be used during the application. Avoid from material to contact with skin and eyes. In case of contacting wash your skin with water and go to doctor immediately

Don't bring any food and drink to the application area. Store the material away from the children. For further information Material Safety Data Sheets should be read.

Disclaimer

This information and all further technical advice is based on our present knowledge and experience. BASF Yapı Kimyasalları San. A.S. is only responsible for product's quality. The results, caused by wrong application and/or application methods and fields exception of technical advices on the application of the product in this technical data sheet, implies no liability or other legal responsibility on BASF Yapı Kimyasalları San. A.S.

This technical data sheet is valid until the new edition is published and makes old editions invalid. 03/2006