

Technical Data Sheet

LAVACEM MC^{PLUS}

High Strength Flowable Non-Shrink Micro Concrete

Description:

LAVACEM MC^{PLUS} is a single component, high compressive strength, flowable, cement based non shrink micro concrete product. It is formulated as a high flowable mix with the use of minimum water content to generate high early strength and durable concrete. It's characterization of free flowing non shrink mortar makes it ideal for repair of damaged concrete or filling large void volumes in concrete elements.

LAVACEM MC^{PLUS} composed of Portland cement, high resistant hydraulic binders, graded silica, polymer and aggregates and special chemicals.

Uses:

- Repair of structural concrete section where it is difficult to cast mortar.
- Structural elements repair.
- Casting over steel Jacket of columns for adjusted loads.
- Damaged reinforced concrete repair.
- Repair of defected concrete bodies.
- Ideal for filling larger voids repairs.
- Repair of concrete pavements.
- Pilehead reprofiling

Advantages:

- Shrinkage controlled, with high early strength.
- Excellent bond to all concrete substrates.
- Flowable with no risk of honeycomb or segregation.
- High compressive strength with low permeability.
- High impact resistant
- Resistant against atmospheric gas, frost and thaw cycles.
- Excellent resistance to chloride, salts and chemical attack.
- Low alkaline and chloride free product.

Instructions for Use:

Surface Preparation:

All concrete surfaces should be free from grease, contaminants, oil and loose material. After cleaning by mechanical tools, to avoid "feather edging", it is advisable to neatly delineate the repair boundary by saw cutting.

It is recommended to apply mechanical cleaning to reinforcing steel and particular attention should be paid to the rear of the bar to ensure all corrosion products have been removed. Once the reinforcing steel has been mechanically cleaned, it should be coated immediately with one coat of LAVAZINC EP-a two component zinc rich epoxy primer or LAVAFER – a two component cementitious corrosion inhibiting primer.

Before applying LAVACEM MC^{PLUS}, soak the substrate with water, allow excess water to drain. Ensure a saturated surface dry condition "SSD" prior to application of mortar.

LAVACEM MC^{PLUS} can be used to fill gaps with at least 50 mm minimum depth and up to a maximum of 500 mm. Greater depths may be applied depending on the design of the structure being repaired. To avoid "feather edging", make saw cutting to the edges with a depth of 50mm.

The application of the mixed product over dry concrete surfaces without saturation with clean water or priming with a bonding agent may result to a bonding failure.

Mixing:

To prepare LAVACEM MC^{PLUS} pour 2.6 – 2.9 liters of clean water into container and add slowly the whole contents of the product. Mix using spiral paddle on slow speed heavy duty mixer for few minutes till a homogeneous lump free consistency mix is achieved. Always add powder to water.

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Avoid adding additional water after the mixture is homogenous and ready for use. Apply the product immediately after mixing to obtain the full benefit of the flowability.

Application:

It is recommended that machine mixing capacity and labor force are adequate to ensure a continuous operation of casting.

Erect clean formwork to the area that needs to be repaired. Cover the area with 5 cm excess boundary over the repair cutting edge. Apply a sealant to the formwork to prevent bleeding from the edges. Prepare a pouring entrance for the mix from the upper side by "bird mouth shape", to receive the material and deliver behind the formwork.

Mix measured volumetric amount of LAVACEM MC^{PLUS} to fill the repair area, consequent pouring prevents any defect in the repair area. Present the mix to the formwork in continuous pouring till the whole repair area is filled.

After the setting of LAVAREP MC^{PLUS}, remove the formwork. Avoid rapid evaporation of water from applied mortar, by applying clean water for curing for two days or apply a coat of a recommended MATEX curing agent. Consult with MATEX Technical Department for further instructions.

Standards:

- EN 1504-3, class R4
- ASTM C109, C928, C580, C579, C157-93
- BS 1881

Packaging:

LAVACEM MC^{PLUS} is supplied in 25 kg recyclable paper bags.

Yield:

LAVACEM MC achieves 12.0 liter of mixture per 25 kg bag with 2.6 liter water.

TECHNICAL PROPERTIES	
Appearance	Gray powder
Wet Density	2.30 ± 0.03 kg/lit
Temp. of Application	5°C to +40 °C
Setting Time	Initial: 2 hours Final: 4 hours
Workability	30-40 minutes @25°C
Adhesion Bond to Concrete (BS 1881-207)	>1.6 N/mm ²
Water Absorption (BS 1881-122)	<2.0%
Rapid Chloride Permeability	<1000
Drying Shrinkage@28 days	500 micron strain
Compressive Strength (ASTM C109)	>70 N/mm ² @7 days >85 N/mm ² @28 days
Flexural Strength (ASTM C348)	>9.0 N/mm ² @28 days
Tensile Strength (ASTM 1583)	4.0 N/mm ² @28 days
Module of Elasticity (ASTM C580)	25,000 N/mm ² @28 days

*Values indicated may vary depending on the environment and conditions of the material. Figures given are tested according to standard laboratory conditions.

Storage Conditions:

LAVACEM MC^{PLUS} to be stored in original packing in dry conditions away from direct sunlight and high humidity levels.

Shelf Life:

LAVACEM MC^{PLUS} can be utilized within 12months of production date if stored in proper conditions in an unopened original packing.

Cleaning:

Clean tools with water prior to product hardening. Hardened materials can only be removed mechanically.

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Remarks:

- Do not use LAVACEM MC^{PLUS} on smooth concrete. Roughed the surface to ensure mechanical bonding.
- Add some reinforcement, bar, as needed in case of mass pouring.
- Do not apply where ambient temperatures are below 5°C.
- Variations of temperature may increase or reduce the initial and final setting time of the mortar.
- During the peak temperature of the day in the summer season, working area should be covered if work to be executed externally. Use cold water for mixing and keep all tools and mixer in shaded areas

Health and Safety:

- Avoid contact with eyes and skin. Wear suitable protective clothing such as coveralls, goggles, dust mask and gloves. Use barrier cream. Ensure that there is adequate ventilation. Do not breathe vapor or spray mist.

FIRST AID:

Eyes: In the event of accidental splashes, flush with warm water and seek medical advice.

Skin: Wash skin thoroughly with soap and water

Inhalation: Remove to fresh air, keep patient rested

Ingestion: Do not induce vomiting. Seek immediate medical attention.

For further safety information, please refer to LAVACEM MC^{PLUS} Material Safety Data Sheet.

MATEX Rev.02-1225

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