

# LAVAREP SPX

## High Strength Non Shrink Fiber Reinforced Polymer Modified Sprayable Concrete Repair Mortar

### Description:

LAVAREP SPX is a premixed, cementitious, fiber reinforced, polymer modified, shrinkage compensated repairing mortar, specially designed for spraying application. It is composed of high resistance hydraulic binders, silica sand graded aggregates, special additives and reinforcing fiber to perform patching repairs with high compressive strength. It is supplied in ready to use blended powder which requires only addition of water to produce workable, thixotropic, non-sagging repair mortar for vertical and overhead applications.

### Uses:

LAVAREP SPX is suitable for wet, dry or hand application in wide range of concrete and cement repair, including:

- General repair of concrete structures of shear walls, slabs and columns.
- Mass infill for large areas
- Vertical and overhead repair.
- Ideal product for repair to fire damaged concrete.
- General repair of degraded concrete structural elements, for vertical and overhead applications.
- Honeycombing repair in reinforced concrete elements
- Edges of beams, pillars, risers of balconies, terraces
- Bridges, dams, tunnels, channels and concrete pavements

### Advantages:

- Single component, requires addition of water only.
- Excellent bond to all concrete substrates.
- Can be applied on vertical, overhead or horizontal places without the use of formwork.
- Shrinkage compensated-reduces the risk of cracking
- High compressive strength and impact resistant of finished layer.
- High build achievable with excellent mechanical strength.
- Excellent workability and thixotropic mortar.

- Can be used as a Cathodic Protection Overlay.
- Low permeability provides protection against chloride, atmosphere gases and salts penetration.
- Re-coatable and compatible with other cement products

### Instructions for Use:

#### Surface Preparation:

In concrete repairs, proper surface preparation is essential for obtaining good results. Concrete substrate should be clean from all grease, contaminants, oil and loose material. Corroded steel, if exposed, should be thorough cleaned and rust free. In case that reinforcing bars section is reduced due to oxidization, integrate them with additional bar reinforcement. In case of deep rusting or contamination, it is recommended to clean using sand blasting to reinforcing steel. 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 cleaned it should be coated immediately with one coat of LAVAZINC EP or LAVAFER.

Before applying LAVAREP SPX, soak the substrate with water. Allow excess water to drain or to evaporate. Ensure a saturated surface dry condition "SSD" prior to application of repair mortar.

#### Mixing:

To prepare the mortar, pour 3.75 to 4.25 liters of clean water (depending on application method) into container and add slowly the LAVAREP SPX powder bag contents (25 Kg). Mix using spiral paddle fitted to slow speed heavy duty drill for few minutes till a homogeneous lump free consistency mix is achieved.

Always add powder to water and not water to powder. Avoid adding thinning water after the mixture is homogenous and ready for use.

# LAVAREP SPX

## Application:

Spray the mixed mortar by a suitable spray machine. Ensure proper mix of gauging water and apply a sample area to ensure mixture consistency and bonding prior to full application. The minimum applied thickness should be not less than 10 mm. The maximum single layer of mortar using spray machine:

- Overhead sections up to 150 mm
- Vertical sections up to 200 mm

For manual application, use a trowel or spatula. For vertical surfaces applications, the recommend applicable layer thickness is from 10 mm up to a maximum of 200 mm. On overhead surfaces, repair thickness can reach up to 150 mm per layer. For vertical application, if the application of a second layer is necessary to reach higher thicknesses, the first layer must be applied with proper pushing then roughened to increase bonding with the second layer.

Curing cementitious repair products is essential. It is essential to follow good concrete curing practice and to protect the repaired area from drying winds, sun or excessive heat to avoid rapid evaporation of mix water in the applied mortar. Cover the area with wet hessian cloth covered with polyethylene sheet for two days. A coat of a recommended MATEX curing agent could be applied instead. Consult with MATEX Technical Department for further instructions.

## Standards:

- BS 1881, Part 116
- ASTM C 157 – 93
- ASTM C 109, C348-21

TECHNICAL PROPERTIES	
Appearance	Cement Grey
Wet Density	2.20 kg/ Lt
Aggregate Size	Up to 2.0 mm
Temp. of application	From +5°C to +40°C
Adhesion bond to concrete	1.8 N/mm <sup>2</sup>
Water Absorption	<0.05%
Tensile Strength@28 Days	5.5 N/mm <sup>2</sup>
Pot-life-time of mixture	35 minutes @ 25°C
Compressive strength @ 7 days @ 28 days	>40 N/mm <sup>2</sup> >60N/mm <sup>2</sup>
Flexural Strength @28 days	>5 N/mm <sup>2</sup>

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

## Coverage:

LAVAREP SPX achieves coverage of 2.2 kg/square meter @ 1mm thickness.

## Yield:

13.5 liters / 25 Kg. bag

## Packaging:

LAVAREP PX is supplied in 25 kg high quality recyclable paper bags.

## Storage Conditions:

Store in original packing in dry conditions away from direct sunlight and high humidity levels.

# LAVAREP SPX

## Shelf Life:

LAVAREP SPX can be utilized within 12 months of production date if stored in proper conditions in unopened original packing.

## Cleaning:

Clean tools with water prior to product hardening.

## Recommendation:

- Where substrate/repair barrier is required or for damp application (such as sea wall) use, MEGABOND EP epoxy bonding agent on the substrate.
- Under any circumstance, addition of extra water is not allowed.
- LAVAREP SPX should not be used when the temperature is below 5°C, or more than 35°C during summer time, working area should be shaded.
- LAVAREP SPX should not be applied on a rainy day, or exposed to running water during application or prior to final setting.

## 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 vapour or spray mist. The product is flammable, keep away from sources of ignition. DO NOT SMOKE. Take precautionary measures against static discharge.

## 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 LAVAREP SPX Material Safety Data Sheet

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