

# ISO REPAIR 640

## Product Data Sheet (TDS)

### DESCRIPTION

ISO REPAIR 640 is a one component, cementitious fiber reinforced structural repair mortar contains specially selected fibers, sulphate resistant cement (SRC), well graded sands and additives to improve the fresh, hardened and non-shrinkage properties. ISO REPAIR 640 Suitable for use in hot and tropical climatic conditions.



### USES

ISO REPAIR 640 is used for structural repair work and suitable for:

- Heavy repair of concrete.
- Restoration works, repair of spalling and damaged concrete in buildings, bridges, infrastructure, columns, slabs, and superstructure works.
- Thick layer repair mortar for vertical and overhead applications.
- Repair of concrete in highly corrosive environments such as marine structures, sea walls, port structures, etc.
- Filling joints between precast elements.
- Replacement of concrete suffering from attack by carbonation, chlorides, and sulfates.

### ADVANTAGES

ISO REPAIR 640 provides several important advantages:

- Extra reinforced strength for structural repair.
- Rapid strength gain and high final strength.
- High abrasion resistance.
- High abrasion resistance prevents the corrosion of steel reinforcement in concrete.
- Suitable in marine and industrial conditions.
- It can be applied by trowel, pump or spray.
- Easy to apply.
- Sulphate resistance.

### PRODUCT & TECHNICAL DATA

Composition	Sulphate resistant cement (SRC), aggregates, polymers and additives
Consistency	Powder
Color	Grey
Maximum size of aggregate	Dmax= 1 mm
Bulk Density	1.75 kg/liter
Fresh Mix Density	2.04 kg/liter
Mixing ratio	2.75 – 3.25 liters of water for a 25 kg bag
Compressive strength (ASTM C 109)	≥ 25 N/mm <sup>2</sup> at 1 day
	≥ 35 N/mm <sup>2</sup> at 3 days
	≥ 45 N/mm <sup>2</sup> at 7 days
	≥ 55 N/mm <sup>2</sup> at 28 days
Flexural strength (ASTM C348)	≥ 3.5 N/mm <sup>2</sup> at 28 days
Bonding strength (EN 1542)	≥ 2.6 N/mm <sup>2</sup> at 28 days
Layer Thickness	Min. 5 mm / Max. 50 mm
Reaction to fire (EN 1504-3)	Class A1
Pot Life	~ 25 minutes As the temperature will affect the pot life, application temperature: •Above (+23 °C) will reduce the pot life and flow •Below (+23 °C) will extend the pot life and flow
Application Ambient Air Temperature	(+5 °C) – (+40 °C)
Application substrate Temperature	(+5 °C) – (+40 °C)

### COVERAGE

Consumption depends on the substrate roughness and thickness of layer applied.

As a guide 19 – 21 kg of powder per 10 mm thick per m<sup>2</sup>.

Recommended thickness (5 - 50 mm).

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### APPLICATION PROCEDURE

#### Surface preparation

The surface of the concrete to be repaired should be sound, clean and uncontaminated. Substrates must be properly cured, structurally sound, free of any loose or friable particles, clean, dry and free of any contaminants such as dust, dirt, oil, grease, cement laitance or efflorescence.

Depending on the substrate condition and contaminants to be removed from the surface, perform adequate preparation techniques, such as water-jet washing or blast cleaning, in order to remove all traces of any materials that could reduce the product's adhesion to the substrate.

The decayed or damaged area should be removed, keeping the sides of the area as square as possible.

If the reinforcement is corroded make sure that the back of the steel is completely exposed. Steel surfaces shall be prepared using abrasive blast cleaning techniques or high-pressure water-blasting.

In hot climates or on absorbent substrates, thoroughly pre-dampen the surface immediately prior to product application, but avoid any ponding / standing water on the surface, which must not be damp to touch and not with a dark-matt / wet surface appearance i.e. it must be saturated surface dry (SSD).

#### Priming

a. Reinforcement steel: After cleaning, prime the cleaned reinforcement steel using (ISO FLEX 1060 is recommended).

b. Concrete: If the concrete damage is severe, a bonding coat with ISOBOND S.B.R 1030 is advisable before placing ISO REPAIR 640 to achieve an optimum bond in the fresh and cured sections.

Note: ISO REPAIR 640 should be applied when the bonding agent is sticky.

#### Mixing

ISO REPAIR 640 25 kg bag should be mixed with the necessary, above mentioned, amount of cold water, using an electric blender with a suitable mixing spiral, in a clean bucket.

Add the ISO REPAIR 640 powder slowly while mixing continuously for at least 3 minutes and until a homogeneous consistency is achieved. ISO REPAIR 640 can be mixed by hand or by mechanical, for best results mix it with forced action mixer.

Slow speed double paddle drill can be also used for mixing.

Do not mix at faster rate than 500 rpm.

The obtained mix should be very creamy, easily spreadable and thixotropic.

#### Application

ISO REPAIR 640 can be applied by wet-spray equipment such as putzmeister, melomat, vario jet etc.

The mortar can be applied by spatula or trowel. For any thickness more than 50 mm, ISO REPAIR 640 must be applied in several layers. While applying multiple layers, the previous layer should be crosshatched and allowed to set before applying the next coat.

ISO REPAIR 640 can be applied to a thickness from 5 - 50 mm at one pass if the ambient temperature is between (20 °C-25 °C) and the weather conditions are normal, strong winds and low humidity would result in rapid moisture evaporation and effect affecting the curing process.

As soon as the mortar has started to set it can be smoothed by wooden or synthetic float.

For fine surface finish use ISO REPAIR 620 on top of ISO REPAIR 640.

## Recommendations

- Don't apply in direct sun, strong wind or rain.
- Don't add water over the recommended dosage.
- Don't add cement, aggregates, or additives to ISO REPAIR 640.
- Don't add water after the mix has started to set.
- Don't add additional water during the surface finishing as this may cause discoloration and cracking.
- Don't overwork the finished surface as this will produce a cement rich surface texture, which may cause the formation cracking in the surface and could also affect the mortar bonding to concrete substrate.
- Don't apply on smooth concrete surfaces, roughen them well before application.
- Don't use ISO REPAIR 640 for anchors (use ISO GROUT MAX 2090).
- Don't use ISO REPAIR 640 to repair structures by pouring into formwork (use ISO GROUT HD 2025).
- When the ambient temperature is high during summer months, mix ISO REPAIR 640 with cold water so that the mix is not above 35 °C.
- Don't apply ISO REPAIR 640 at temperatures below +5°C.

## CLEANING

Clean all the tools with water immediately after use.  
Hardened materials can be removed mechanically only.

## PACKING

ISO REPAIR 640 is supplied 25KG bags.

## SHELF LIFE

Shelf life is up to 12 months from production date when stored as per recommendations.

## STORAGE

Product must be stored in original unopened packaging, under cover, out of direct sunlight and protect from extreme temperatures. In tropical climates the product must be stored in air-conditioned environment.

## HEALTH AND SAFETY

As with all construction chemical product, caution should be always be exercised. Protective clothing such as gloves and goggles should be worn. Treat any splashes to the skin or eyes with fresh water immediately. Should any of the products be accidentally swallowed, do not induce vomiting, but call for medical assistance immediately.

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