

# PIOMORTAR ELS

Abrasion & chemical resistant epoxy-based lining mortar

## DESCRIPTION

**PIOMORTAR ELS** is a hand applied, 3-component, solvent free epoxy mortar specially designed for lining & benching works in manholes. It offers excellent chemical and abrasion resistance, applied up to 30 mm thickness in a single layer and develops good early strength to minimize rehabilitation times.

## USAGES

- Benching on new manholes
- Repairing of spalled or damaged concrete
- Relining of existing manholes in both clean and dirty water environment
- Used for instant concrete repair
- Repair of stair treads

## ADVANTAGES

- Chemically resistant Mortar
- Excellent bond to concrete
- High impact and abrasion resistance
- Rapid strength development commissioning in 2 days, full cure in 7 days
- Provides a waterproof lining to manhole
- Cost effective
- Can be applied vertically and horizontally
- Used over **PIOREP PLUG** to provide permanent solution to water leaks

## TECHNICAL DATA

### PIOMORTAR ELS

### Typical values

Compressive Strength  
@day 7 (BS 6319-p2)

50 N/mm<sup>2</sup>

Tensile Strength  
@day 7 (ASTM D2370)

8.0 N/mm<sup>2</sup>

Sag at 10 mm thickness

None

Mixed Density @25°C  
(ASTM D1475)

1900 kg/m<sup>2</sup>

Pot life @25°C  
(ASTM D2471)

30 min

Touch Dry @25 °C  
(ASTM D2471)

24 hours

Full Cure Time @25°C  
(ASTM D1640)

7 days

Adhesion to Concrete  
(ASTM D4541)

> 4 MPa

Water Absorption  
(ASTM C413)

0.07%

## USAGE INSTRUCTIONS

### 1. Surface preparation

All substrates shall be sound, clean, free from dust, grease & oil, dirt, the concrete wet substrates should be sponged-dried to remove all free surface water.

Concrete surfaces particularly if new; should be fully cured with a maximum residual relative humidity (RH) of 75%.

Mark the extremity of the repair area and saw cut to a minimum depth of 10 mm to define the area to be removed, then chip out the area within the saw cut back to sound concrete, to a minimum depth of 5 mm ensuring no feather edges and a good mechanical key to be achieved.

If steel reinforcement is exposed, continue to break out the concrete to at least 15 mm behind the bars.

### 2. Priming

Apply one coat of **PIOPRIME 38** depending on concrete porosity, ensure that the surface to be primed is clean, dry, free from oil, grease or other contamination.

### PIOMORTAR ELS

### Coverage

PIOPRIME 38

9 m<sup>2</sup>/Liters

PIOMORTAR ELS

9.0 Liters yield

### 3. Mixing

Stir component A only separately, then the entire content of component B could be poured into the base container, both should be mixed for 1-2 min at least using mechanical mixer (drill mixer).

Empty the mixed resin into a suitable empty container with a sufficient volume to accommodate the total yield of the material (9 liters).

Add gradually the entire powder or filler (Component C) to the mixed resin using a slow speed drill and paddle of forced action mixer for an additional 2-3 min until a uniform color @ consistency is achieved.

### 4. Application

Apply the mixed material onto the prepared surface using a plastic or wood float. Spread out and tamp or compact to provide a dense topping to a minimum of 5 mm and a maximum of 30 mm thickness in a single layer.

Finish with a plastic float. Wood float, steel trowel depending on surface texture required.

Subsequent layers can be applied to the first layer after 6-8 hours. The first layer should be a scratch layer to form a mechanical key and enhance the bonding.

Expansion joints must be reflected through the product and preferably sealed with a sealant from the ENESEAL range.

### 5. Curing

Allow the product to cure fully for 4-7 days before exposing to full mechanical or chemical conditions.

### 6. Cleaning

Clean all tools and application equipment with a suitable thinner immediately after use.

Hardened or cured material can only be removed mechanically.

## CHEMICAL RESISTANCE

PIOMORTAR ELS	Concentration
Kerosene	100%
Gasoline	100%
Nitric Acid	10%
Sulphuric Acid	25%
Acetic Acid	5%
Lactic Acid	10%
Hydrochloric Acid	10%
Phosphoric Acid	20%
Sodium Hydroxide	50%

## PACKAGING

PIOMORTAR ELS is supplied in 16 kg set, component A, B & C.

## HEALTH & SAFETY

Before applying **PIOMORTAR ELS**, all safety protections should be worn during application, such as safety goggles and rubber gloves to avoid any harmful accidents.

If **PIOMORTAR ELS** is splashed to skin, it must be washed off by water and soap at once, and if to the eyes seek medical attention immediately.

## STORAGE & SHELF LIFE

**PIOMORTAR ELS** shall be stored in its sealed container under dry and shaded place in a temperature from 5°C - 35 °C, shelf life of the material is 12-months.

## TECHNICAL SERVICE

The technical service department of Arkaz is available to assist in the correct and best use of our products, these resources and advice are at your disposal entirely without obligation.

Please contact:  
concretedoctor@arkaz.com

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