

## MaxProof® 440

### Crystalline, in-depth penetration waterproofing system

#### Description

**MaxProof 440** is a cement-based, crystalline, in-depth penetration waterproofing system for concrete and cement-based substrates. It forms insoluble crystalline complexes into capillaries which ensures permeant waterproofing solution to water leakage in concrete structures and cement-based substrates. **MaxProof 440** is equally effective against positive and negative water pressure and prevents further passage of water.

**MaxProof 440** is cement-based powder. It can be mixed with water to a slurry consistency and applied as a surface applied coating on concrete and cement-based substrates. It can be used as a dry shake on fresh concrete and horizontal construction joints.

#### Features and benefits

- Does not rely on film formation. Forms an integral waterproofing system and will not delaminate, peel off or wear away.
- Permanently active. Crystalline formation will be re-activated by contact with water.
- Non-toxic. Suitable for use in contact with potable water.
- Can be applied to damp substrates.

#### Recommended for

- Water retaining structures such as: water tanks, swimming pools, potable water and waste water treatment plants and sea water channels.
- Water excluding structures such as: basements, tunnels, bridge decks and sea defense walls.
- Foundations, retaining walls and backfilled elements.
- Horizontal construction joints.

#### Composition

**MaxProof 440** is composed of selected type of cement, well-graded silica sands and compound of selected active ingredients.

#### Packaging

**MaxProof 440** is available in 25 kg bag.

#### Coverage

Brush application: 0.75 kg/m<sup>2</sup>/coat (two coats are required).

Dry Sprinkling application: 1 kg/m<sup>2</sup>.

#### Note:

Coverage rate takes no account of wastage and may vary according to surface condition and application method.

#### Technical data

Mixed density	2 kg/liter
Resistance to hydrostatic pressure	3 bar
Setting time	Approx. 1-2 hours at 20°C
Time between coats	3 - 4 hours at 20°C
Appearance	Grey powder

#### Action

When **MaxProof 440** is applied on concrete substrates, the active ingredients in **MaxProof 440** combine with the free lime present in the concrete substrate in the presence of moisture to form continuous insoluble crystalline matrixes. These crystals will penetrate into the capillaries and minor shrinkage cracks in the concrete structure and block it from any further water leakage.

The penetration rate into concrete structure and the crystalline development varies due to many factors such as density and surface absorption. In general, the crystals will penetrate to the depth to which the water is present in the concrete section. Full waterproofing properties can be achieved after 5-7 days. However, **MaxProof 440** will allow the passage of water vapor through the concrete structure (i.e., the concrete will still be able to "breathe").

#### Surface preparation

Substrate to be waterproofed must be clean, sound and free from any contamination.

Any material such as bitumen, oil, grease, paint, curing compound, mould oil, laitance or any material that may impair the adhesion / penetration of the **MaxProof 440** must be removed by suitable means. Mechanical surface preparation is recommended. This is best obtained by using high pressure water or light grit blasting and grinding. Surface should be roughened and open-pored. Honeycombs and defected concrete should be filled with suitable repair mortar. Do not use polymer modified repair mortars. Water leakage must be stopped using **MaxPlug 410**.

For dry substrates, contentious damping with water is essential for at least 24 hours. Ensure that there is no surface water present prior to the application of **MaxProof 440**.

### Mixing

**MaxProof 440** slurry can be obtained by mixing the content of 25 kg bag to 7-8.5 liter of clean water. Always add water to **MaxProof 440** powder. If small quantities are needed, mixing ratio is 1 part of clean water to 2.25-2.5 parts of **MaxProof 440** by volume. If slow speed drill fitted with suitable mixing paddle is used, it may introduce too much air into the mixture. Ensure that the slurry consistency is homogenous and lump free creamy slurry. MIX AND USE. Mix material that can be applied within 20 minutes.

### Application

**MaxProof 440** should be applied by brush or spray equipment. Apply the first coat at application rate 0.75 kg/m<sup>2</sup>. The second coat shall be applied by brush in a similar way to the first layer but preferably at right angle to the previous layer while the first coat is still green but firm (within 3-4 hours depending on temperature).

For vertical construction joints, one coat of **MaxProof 440** slurry can be applied at 1.50 Kg/m<sup>2</sup>/coat as an effective replacement to

P.V.C. waterstop. For old concrete and concrete blocks, replace the second coat of **MaxProof 440** with a 5 mm thick **MaxProof 440** render (please consult ACC Technical Dep.).

### Dry sprinkling application

Concrete to be waterproofed should be poured, vibrated and leveled using normal concrete pouring technique. Wait till the concrete starts to reach initial set. Then, **MaxProof 440** should be dry sprinkled and distributed uniformly by hand on the concrete surface. Trowel **MaxProof 440** into the fresh concrete surface. **MaxProof 440** can also be used using dry sprinkling technique on horizontal construction joint as an effective replacement to P.V.C waterstop.

### Curing

**MaxProof 440** should be kept wet for 5-7 days after the initial set of the final coat. Use tap water and covering with polyethylene. Never use curing compounds or de-humidifiers. **MaxProof 440** needs to be protected from damage and against weather conditions for a similar minimum period. Then the applied area will be ready handle the needed service.

### Finishing

Prior to the application of any finishing material, the surfaces should be saturated with water and neutralized with diluted hydrochloric acid (1:8 / approx. 3.5%). Following this, the area must be thoroughly rinsed with water. In case that coatings will be applied on top of **MaxProof 440**, it should be left to cure for at least 28 days. Use alkali resistant water vapor permeable coatings. Where sand-cement plaster finish is required, it is essential to apply a rough coat (spatter dash coat) of sand / cement mortar onto the final coat of **MaxProof 440** while it is still tacky.

### Important notes

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- Important note is to add water to **MaxProof 440**, not in reverse order.
- Do not use polymer modified repair mortars to repair defected concrete substrates.
- If spray application should take place, spray through a 3 - 4 mm nozzle at 3 - 5 bar pressure. Apply the first layer in circular motion with the spray nozzle. Keep the nozzle at 90° angle to the substrate. Apply the second coat while the first coat is still damp but firm. The final layer can be left as a spray finish or treated to achieve the required finish.
- Do not apply **MaxProof 440** in direct sunlight or if the ambient temperature is below 5°C. When rain is anticipated within 24 hours after application, the surface should be protected.
- In closed areas and deep pits, suitable air circulation should be provided for 24 hours after application.
- For underground structures, backfilling can be carried out 3 days after completion of the **MaxProof 440** treatment.
- Filling water retaining structures with water can take place usually not less than 14 days after application. If earlier filling is required, filling may be considered after not less than 7 days ensuring that the surface is thoroughly checked for hardness.
- For water retaining structures, careful cleaning and disinfection is essential prior to the first operation. Follow national laws and regulations.

#### Cleaning

Clean tools with water immediately after use. Hardened materials should be cleaned mechanically.

#### Storage and shelf life

To maintain its quality and suitability for use, the product should be stored in its unopened packaging, off the ground on pallets or similar structures, in a cool and dry environment.

When stored under these recommended conditions, the product remains suitable for use for 12 months from the manufacturing date stated on the packaging.

#### Health and Safety

This product contains cement which may cause skin irritation. It may cause allergic skin reaction and eye damage. Avoid breathing dust. Wear protective gloves, eye goggles and clothing. In case of skin contact, wash with plenty of water. In case of eye contact, rinse continuously with water for several minutes and seek medical attention. Dispose excess material to special waste collection point in accordance with local & national regulation. Keep out of reach of children.

For further information, please ask for Safety Data Sheet for this product.

***The most up-to-date TDS can be obtained from ACC Customer Service Department, or downloaded from our website: [www.acc.com.eg](http://www.acc.com.eg).***

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