

# DuraSeal XP

## Crystalline waterproofing cement-based slurry

### Description

**DuraSeal XP** is a one-component, cement-based, brushable waterproofing slurry. Under water pressure (negative or positive), the soluble silicate penetrates (due to osmotic pressure) into the substrate, where it reacts with lime and forms insoluble calcium silicate crystals which “plug” the capillary pores and waterproofs the concrete while allowing water vapor to pass.

**DuraSeal XP** offers the following advantages:

- Remains permanently active, therefore it continuously protects construction from water.
- Offers total waterproofing against positive hydrostatic pressure up to 5 atm, according to EN 12390-8. It can also withstand negative pressure.
- Bonds perfectly to concrete, under both positive and negative hydrostatic pressure.
- Capable of waterproofing hairline cracks up to 0.4 mm wide even if they appear afterwards.
- In case of damaging the concrete surface or the waterproofing layer, it does not affect the water tightness of the construction.
- Suitable for potable water tanks, as well as food contact surfaces, according to W-347.
- Protects concrete from carbonation.
- Does not corrode the reinforcing steel in concrete.
- Does not affect the “breathability” of the concrete element.
- Increased frost resistance.
- No effect on the strength of concrete.
- Increases chemical resistance of concrete.

Certified according to EN 1504-2 and classified as a coating for surface protection of concrete.

### Fields of Application

It is used for waterproofing of concrete elements, in cases ranging from simple moisture to water under pressure. Suitable for waterproofing of basements, foundations, manholes, water tanks, sumps, reservoirs, sewage tanks, bridge & flyover decks, tunnels etc.

### Technical data

|   |  |
|---|--|
| Form  | cementitious powder                        |
| Colour  | Grey                                       |
| Water Demand  | 6.0 – 6.4 l/20kg                           |
| Bulk density of dry mortar  | 1.15 ± 0.05 kg/lit                         |
| Bulk density of fresh slurry  | 2.10 ± 0.05 kg/lit                         |
| Pot life  | ~30 mins (+20°C)                           |
| Capillary absorption and permeability to water:<br>(EN 1504-2: $w < 0.1$ )            | 0.095 kg/m <sup>2</sup> ·h <sup>-0.5</sup> |
| Water vapor permeability:<br>(EN ISO 7783-2,<br>Class I: $S_d < 5 m$ )                | $S_d = 0.61 m$                             |
| CO <sub>2</sub> permeability<br>(EN 1062-6 Method A,<br>requirement: $S_d > 50 m$ )   | 181 m                                      |
| Water penetration under positive hydrostatic pressure (EN 12390-8, 3 days at 5 bar)   | No penetration                             |
| Water penetration under negative hydrostatic pressure (EN 12390-8, 3 days at 1.5 bar) | No penetration                             |
| Compressive strength after 28 days:<br>(EN 12190)                                     | 38 MPa                                     |
| Flexural strength after 28 days:<br>(EN 12190)  | 8 MPa                                      |
| Adhesion strength:<br>(EN 1542)   | 1.7 MPa                                    |



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## Durability against

|                      |              |
|----------------------|--------------|
| Rain                 | After 1 day  |
| Walking              | After 1 day  |
| Water under pressure | After 3 days |
| Backfill             | After 3 days |

## Directions to use

### Substrate preparation

- The substrate must be porous, free of oil or grease, loose material, dust, etc. Very smooth surfaces should be treated with mild sandblasting or water blasting.
- Water leaks should be plugged with 'CmFix R' rapid-setting cement.
- Any cavities in concrete surface should be filled and smoothed out using 'DuraSeal XP - Mortar'. Mix three parts of **DuraSeal XP** to one part water by weight, until stiff mortar consistency is achieved. After all loose aggregate has been removed and the surface has been well moistened.
- Starter bars and wooden molds should be cut to a depth of about 3 cm into the concrete and the holes should be sealed as above.
- Existing construction joints – 0.4 mm wide – are opened lengthwise in a V shape to a depth of about 3 cm and are then filled as above.
- Corners, like wall-floor junctions, should be filled and smoothly rounded with 'DuraSeal XP - Mortar' (formation of a fillet, triangular in cross section, with side lengths of 5-6 cm).

### Application

**DuraSeal XP** is added to the water under continuous stirring, until a uniform, viscous mixture is formed, suitable for brushing or spraying. The application surface must be well moistened but without ponding. The product is applied by brush or spray in two layers. Layers thicker than 1 mm should be avoided because the material may crack. The second layer is applied while the previous one is still tacky and "green". In case the first layer has fully dried, dampening of the surface is necessary prior to the application of the second one.

After the application is completed, the final surface must be moistened for the next 2-3 days, so that the waterproofing layer remains slightly wet and hardens properly. This should take place when **DuraSeal XP** has started to harden to avoid the possibility of damage. Usually, water spraying 2-3 times per day is sufficient.

The freshly coated surface should be protected from rain and frost..

### Consumption

Approximately 0.75 kg/m<sup>2</sup>/layer

### Packaging

20kg HDPE Bags

### Shelf life

24 months from production date if stored in original, unopened packaging, at temperatures between +5°C and +35°C. Protect from direct sunlight and frost.

### Remarks

- In case of water under pressure, the structure bearing the waterproofing layer (wall, floor, etc.) should be properly designed in order to be sufficiently static to withstand hydrostatic pressure.
- In case **DuraSeal XP** is used in potable water tanks, after the product is applied, the surface should be carefully washed out with plain water, before the final filling of the tank.
- DuraSeal XP** can also be dusted on the clean concrete and the steel reinforcements. This process will protect not only the reinforcement itself but also the foundation slab from rising damp. The lean concrete should be moistened, until saturation is reached. Then, **DuraSeal XP** is dusted using 1.5-2.5 kg/m<sup>2</sup>. The concrete of the foundation slab can be poured after one hour, once **DuraSeal XP** has hardened and adhered to the clean concrete, in order not to damage the previous application.



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- Temperature during application should be at least +5°C.

## Health & safety

**DuraSeal XP** contains cement powders which, when mixed with water, release alkalis that could be harmful to the skin. It is preferable that the application be done in a ventilated area, and to wear protective gear for hands, eyes and respiratory system and to avoid breathing of the dust. Splashes on the skin should be washed away by cleaning with soap and water. In case of contact with eyes, wash thoroughly with clean water. If swallowed, do not induce vomiting, in both cases seek medical attention. The product is non-flammable.

For further information, refer to the Material Safety Data sheet.

## Notes

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