Technical Datasheet

Duraflex Ultra

Two component, ultra-flexible, UV resistant, solar heat reflective heavy duty waterproofing slurry coat.

Description

Duraflex Ultra is a two-component, ultra-flexible heavy-duty Titanium modified waterproofing slurry consisting of a cement-based powder mortar (component A) and an emulsion resin (component B). After hardening, it forms a seamless, jointless membrane, with the following advantages:

- Resistance to UV radiation.
- Reflects more than 80% of solar radiation and reduces cooling and heating demand. (White Colour only)
- Total waterproofing against positive hydrostatic pressure up to 5 atm according to EN 12390-8. It can also withstand negative pressure.
- Active chemicals of the mixture form crystals which fills the capillary pores and shrinkage cracks of the concrete, preventing any further water ingress
- Crack-bridging ability even at low temperatures.
- High vapor permeability, resistance to frost.
- Resistance to aging caused by temperature fluctuations.
- Trafficable surface.
- Excellent resistance to chloride penetration.
- Includes Migrating Corrosion Inhibitor
- Protection of concrete from carbonation.
- Excellent sulphide and sulphate resistance
- Suitable for potable water tanks, as well as food contact surfaces, according to W-347
- Suitability for green roofs, flower beds, etc., as it is certified as root-resistant.
- Also works as a radon barrier

Certified according to EN 1504-2 and classified as coating for surface protection of concrete, EN 14891 and classified as liquid-applied, two-component, water-impermeable product.

Fields of Application

Duraflex Ultra is suitable as a high-traffic coating for new concrete or for resurfacing of parking garages, industrial floors, loading docks, bridges, roof decks etc.

Treating bridge and flyover decks before wearing course to protect concrete from rainwater ingress

Suitable for waterproofing substrates subject to expansion-contraction or vibration and show or are expected to show hairline cracks, such as new and old green roofs, terraces, podiums, planters, flat roofs, balconies, inverted roofs, bridges, machinery pits, basements, foundations, concrete pipes and tunnels and as an anti-carbonation protection coating for concrete structures.

Suitable for all types of water retaining structures i.e. water tanks, sumps, reservoirs, swimming pools etc.

Tiles should be fixed with a high-performance, polymer-modified tile adhesive, such as FLEXBOND HX and FLEXBOND RX.

Technical data

Wet properties

Bulk density of dry mortar	1.5 ± 0.05 kg/lit
Bulk density of fresh slurry	2.1 ± 0.05 kg/lit
Colour of fresh Slurry	White, Grey
Pot life	~45 mins (+20°C)

Final properties

Capillary absorption and permeability to water: *(EN 1504-2: w < 0.1)*	0.00594 kg/m^2·h $^{-0.5}$
Water vapor permeability: *(EN ISO 7783-2) Class I: S_d < 5 m)*	S_d = 0.5 m

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Elongation at break max: *(EN ISO 527-1 & -2)*	132.2%
Compressive strength *(EN 12190)*	11 MPa
Flexural strength *(EN 12190)*	8 MPa
Adhesion strength: *(EN 1542)*	1.9 MPa
Tensile adhesion strength	> 0.8 MPa
Water penetration under positive hydrostatic pressure: *(EN 12390-8, 3 days at 5 bar)*	no penetration
Water penetration under negative hydrostatic pressure	no penetration

Durability against

Rain	After 4 hours
Walking	After 1 day
Tile fixing	After 1 day
Water under pressure	After 7 days
Backfil	After 3 days

Directions to use

Substrate preparation

The substrate must be clean, free of oil or grease, loose material, dust, etc. Water leaks should be plugged with CEMFIX R ultra rapid-setting, cementitious leak-plugging mortar. Any cavities on concrete surface should be filled and smoothed out with FLEXCEM GP, FLEXCEM FR60 or a cement mortar improved with DURAPROOF SB40, after all loose aggregate has been removed and the surface has been well dampened.

Starter bars and spacers should be cut to a depth of about 3 cm into concrete and holes should be filled, as described above. Existing construction joints are opened longwise in a V shape to a depth of about 3 cm and are subsequently filled, as above.

Corners, like wall-floor junctions, should be filled and smoothly rounded with FLEXCEM GP or a cement mortar improved with DURAPROOF SB40 (formation of a fillet, triangular in cross section, with sides of 5-6 cm).

In case of masonry walls, joints should be first filled carefully, otherwise it is recommended to apply a cement slurry layer first improved with DURAPROOF SB40.

For waterproofing basements in old buildings, the existing plaster should be removed to a height of at least 50 cm above water level, before proceeding as above. Wherever flat surface formation is required (smoothing, slope creation, etc.) the use of FLEXCEM GP, FLEXCEM FR60 or a mortar improved with DURAPROOF SB40 is recommended.

Mixing

Duraflex Ultra Liquid part (Part A) is mixed with Powder part (Part B) with a help of low speed (300-400 rpm) paddle mixer. The mix has to be stirred thoroughly, until a lump-free smooth slurry is obtained. Stand for 4-5 minutes after mixing to release air from the mix.

Application

The substrate must be pre-wetted to a saturated surface dry condition before application. The surface to be covered with **Duraflex Ultra** must be free of standing water. The material is applied by brush or roller in two or more layers, depending on the water load. Layers thicker than 1 mm should be avoided, because the material may crack. Each new coating is applied after the previous one has dried for 5-6 hours.

In case **Duraflex Ultra** needs to be locally reinforced (inside corners where forming fillets is not necessary, at junctions, etc.), the use of a 10 cm wide polyester fleece (30 g/m^2) or fiberglass mesh (65 g/m^2) is recommended.

Consumption

Water load	Minimum consumption	Minimum thickness
Moisture	2.0 kg/m^2	~ 1.5 mm
Water without pressure	3.0 kg/m^2	~ 2.0 mm
Water under pressure	3.4-4.0 kg/m^2	~ 2.5 mm

Duraflex Ultra

Packaging

30 kg packaging (21.5 kg cement-based powder mortar + 8.5 kg emulsion resin).

Shelf life

12 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, care should be taken so that pumping, which keeps the water level low, does not stop before **Duraflex Ultra** has sufficiently hardened. About 7 days are needed.
- 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 of operational walkable floors, the floor surface waterproofed with **Duraflex Ultra** should be enhanced the surface hardness with CONSEAL DP liquid surface hardener and densifier.

Health & safety

Avoid direct contact with this product. Use of safety glasses, rubber gloves, and protective clothing is recommended. If contact occurs, wash affected areas with mild soap and water. Keep product out of reach of children.

Refer to Safety Data Sheet for complete health and safety information.

Notes

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