

Durablend 500

Optima Coatings Durablend 500 is a styrene-butadiene (SBR) copolymer latex specifically designed for use with cement compositions. It is used in mortar and concretes as an admixture to increase resistance to water penetration, improve abrasion resistance and durability. It is used with cement as a reliable water-resistant bonding agent.

Colours: n/a

PRODUCT USES

- Concrete repair: Spalled concrete, repairing floors, beams and pre-cast slabs.
- Floor screeds and toppings: Abrasion resistant and non-dusting floors, underlay for special finishes, mild chemical and effluent-resistant floors.
- External rendering: Waterproof, weatherproof and frost resistant render.
- Waterproofing and tanking: Basements, lift pits, inspection pits, water towers, liquid tanks, effluent tanks and swimming pools.
- Fixing slip bricks and tiles.
- Corrosion protection of steel.

ADVANTAGES

- Quick hardening.
- Excellent adhesion to steel and concrete. Adheres well to brick, glass, asphalt, wood, expanded polystyrene and most building materials.
- Increased durability and toughness.
- Increased resistance to water penetration.
- Improved flexibility and reduced shrinkage.
- Prevents bleeding.
- Lower water-cement ratio.
- Good abrasion resistance.
- Good resistance to frost, salt permeation, most chemicals and to mineral oil.
- Prolonged corrosion protection.
- Proven performance.
- Similar thermal expansion and modulus properties to concrete (unlike resin mortars and primers).
- Non-toxic. Can be used with potable water.
- More economical than epoxy or polyester resin mortar.

COVERAGE

- For all normal use: Mix 5 litres of Optima Coatings Durablend 500 per 50kg of cement.
- 20 litres of Durablend 500 mixed with OPC type 1 cement will provide a smooth slurry which will cover 20m², dependant on substrate porosity and thickness applied.
- For extreme conditions or when adhesion, waterproofing, water vapour resistance or chemical resistance is important: The dosage should be increased to 10 litres of Durablend 500 per 50kg cement. The water addition required for this increased dosage is low and therefore the use of wet aggregate may result in excessive workability.

SURFACE PREPARATION

- Ensure all substrates are thoroughly clean, sound, dry and free from any contaminants such as dirt, rust, salt, algae and grease.

APPLICATION

- Bonding Slurry:
 - Ensure that absorbent surfaces such as concrete, brick, stone, etc are thoroughly saturated and yet free from surface water.
 - Combine 1 part Optima Coatings Durablend 500 with 1.5 – 2 parts cement and mix until the consistency is creamy and lump-free, to prepare the bonding slurry.
 - Work the bonding slurry onto the damp surface using a stiff brush, ensuring no pin holes are visible.
 - Do not apply bonding slurry at a thickness greater than 2mm.
 - If a second coat is needed, wait until the first coat is touch dry.
 - Apply second coat at right angles to initial application in order to ensure complete coverage.
- Screeds and toppings, applied to horizontal surfaces:
 - Screeds and patches based on Durablend 500 modified cements can be laid in a thickness of between 60mm to a minimum of 6mm.
 - After mixing, the Durablend 500 modified cement should be placed over the still wet bonding slurry, well compacted and levelled off. It may then be trowelled to the required finish using a wooden float or steel trowel.
 - NOTE: Whenever screeds are being laid over existing concrete surfaces, it is important that expansion joints in the sub-floor are carried through the Durablend 500 modified mix. This can be done by fitting a temporary timber batten wrapped in a polythene sheet into the joint.
- Application to vertical surfaces
 - Apply bonding slurry to the prepared substrate and then apply Durablend 500 onto the wet bonding slurry.
 - Apply Durablend 500 modified mortars in coats at a maximum thickness of 6mm per coat.
 - Allow 15 to 30 minutes before applying the next coat of Durablend 500.
 - Close the surface using a wooden float or steel trowel.
- Curing
 - Correct curing of Durablend 500 modified mixes is important.
 - Moisture cure for 24 hours and then allow to dry out slowly.
- Correct curing allows the latex particles in Durablend 500 to join together to form continuous films and strands.

CLEANING

- All equipment should be cleaned with water immediately after use.
- If delayed, use of soap and wire wool can be used.
- Partially hardened mortar can be removed using solvents such as white spirit.

IMPORTANT

- Don't apply Optima Coatings Durablend 500 modified mixes to bonding slurry that has dried out.
- Always use fresh, cool cement and sharp, clean, well graded aggregate, free of excessive fines.
- Keep mixing time to a minimum.
- Avoid using excessive water, Durablend 500 modified mix is deceptive - when it is the correct consistency it may appear to be too dry, however it can be compacted and trowelled satisfactorily.
- Do not over trowel and avoid retrowelling.
- The recommended levels should not be exceeded. Overdosage at an acceptable workability is not likely, but will result in an increase of the polymer properties to the detriment of the compressive strength.

SAFETY PRECAUTIONS

- As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs.
- Treat splashes to eyes and skin immediately.
- If accidentally ingested, seek medical attention.
- Reseal containers after use.
- Use in well ventilated areas and avoid inhalation.

TECHNICAL DATA

Pack size	25 litre and 200 litre
Composition	Milky white styrene butadiene copolymer latex made for use with cement.
pH	10.5
Specific gravity	1.01
Mean particle size	0.17 micron
Butadiene content	40% by weight of Durablend 500 polymer
Compressive Strength ⁺	40N/mm ² dependant on cement used and workability
Tensile Strength ⁺	Up to 6.5N/mm ² dependant on cement used and workability
Flexural Strength ⁺	Up to 13N/mm ² dependant on cement used and workability
Freeze thaw resistance	Excellent
Water vapour permeability	Less than 4gm/m ² /24hr, through a 11mm thick test piece*
Co-efficient of thermal expansion	-20°C to +20°C: 12.8 x 10 ⁻⁶ -20°C to +60°C: 12.9 x 10 ⁻⁶
Chemical resistance	Resists mild acids, alkalis, sulphates, chlorides, urine, dung, lactic acid and sugar
Shrinkage due to cure	0.01% to 0.02%
Resistance to water under pressure – 30m head	Excellent – no water through a 15mm thick test piece*
Storage	Store under cover, out of direct sunlight and protect from temperature extremes.
⁺ Variation in cement used and workability can cause variation in strength. Indicated strengths are typical.	
*Durablend 500 mixed at a ratio of 10l/50kg cement	

Technical details above are provided in good faith. We are an ISO 9001:2008 registered company and our products are manufactured to the highest standards using raw materials of superior quality. Consequently we believe in the quality of our products and will willingly replace any product in the unlikely event of a quality related performance failure. Whilst we are confident in guaranteeing the quality of our products, we cannot however accept any liability for performance failure due to the incorrect application of our products. Correct application is critical to the successful performance of our products and as this process falls outside of our control we are unable to cover the application under our product performance warranty. Where there are doubts, it is recommended that the user conduct their own suitability tests before use. To retain sheen and colour consistency of your paint, always make sure that the batch numbers are the same on all paint containers that you purchase.

Updated: August 2013 (this supercedes all previous publications)