

PRODUCT DESCRIPTION

Stonchem 856 is a vinyl ester resin lining system applied at a nominal thickness of 2.5mm. The resin, engineering fabric, mortar coat, mineral composite topcoat sequencing provides a smooth, heavy-duty chemical barrier which is resistant to small static cracks and moderate thermal shock. The Stonchem 856 system has excellent resistance to a broad base of chemicals, including strong organic acids, alkalies, solvents and moderate to strong inorganic acids.

USES, APPLICATIONS

- Secondary containment areas / tank farms
- Concrete sumps, vaults and trenches
- Pump pads and pedestals
- Storage tanks
- Neutralization pits
- Chemical storage rooms

PRODUCT ADVANTAGES

- Excellent chemical resistance to acids, bases and solvents
- Engineering fabric aids in crack resistance
- Mortarcoat for added abrasion resistance
- Mineral composite topcoat for increased impermeability
- Factory proportioned units for easy application

CHEMICAL RESISTANCE

Stonchem 856 is formulated to resist a variety of chemical solutions. Refer to the Stonchem 800 Series Chemical Resistance Guide for lists of reagent concentrations and temperature recommendations.

PRECAUTION

Stonchem 800 series systems cannot withstand the exothermic reaction of water, dew or rain falling on pooled concentrated acids. The temperatures of the acid can reach 160°C and if maintained, will destroy the lining. Pump and pipe maintenance, the use of drip trays, slopes to sumps, roof protection and good housekeeping practice is critical in avoiding the explosive properties encountered when water is added to acids.

NOTE: Staining may occur depending on length of exposure time, chemical concentration and temperature.

PACKAGING AND COVERAGE

Primer:

5 Litre Stonchem 700/800 Primer + 100ml Peroxide + 100ml Catalyst, approx. 16m²/5 litre

Saturant:

5 Litre Stonchem 800S Resin + 100ml Peroxide + 100ml Catalyst + Engineering Fabric, approx. 3,5m²/5 litre

Engineering Fabric:

1 Roll 50kg CSM 450, approximately 111m²

Mortarcoat:

5 Litre Stonchem 800S Resin + 100ml Peroxide + 100ml Catalyst + 1 x 10kg Bag Stonchem Mortarcoat Aggregate = 8 litres, approx. 16m²/8 litre

Topcoat:

5 Litre Stonchem 800T Topcoat Base + 100ml Peroxide + 100ml Catalyst, approx. 16m²/5 litre

NOTE: Coverage rates shown are theoretical. Actual coverage rates may vary. Make necessary allowances for the condition of the surface to be coated, working conditions, waste, spillage, experience level and skill of the installers, etc.

REFERENCE SAMPLE

A trial reference sample should be installed by the applicator prior to start of contract to ensure correct coverage and workmanship.

STORAGE CONDITIONS

Store all components between 10 to 24°C in a dry area. Keep out of direct sunlight. Avoid excessive heat and do not freeze. Store all engineering fabric in a clean and dry area.

SHELF LIFE

The resin shelf life is 6 months in the original, unopened container. The aggregate shelf life is 24 months.

TYPICAL PROPERTIES AT 25°C

Tensile Strength ASTM D-638	75 MPa
Flexural Strength ASTM C-580	82 MPa
Flexural Modulus of Elasticity ASTM C-580	4 X 10 ³ MPa
Hardness ASTM D-2240, Shore D	85 to 90
Abrasion Resistance ASTM D-4060, CS-17	0.10 gm max weight loss
Thermal Coefficient of Linear Expansion ASTM C-531	3.6 x 10 ⁻⁵ mm/mm/°C
Working Time	20 Minutes
Colour	Pewter Grey or Charcoal
VOC Content	800/820 Liquid: 53 g/l 800 Series Topcoat: 62g/l

NOTE: The above physical properties were measured in accordance with the referenced standards. Samples of the actual floor system, including binder and filler, were used as test specimens. All sample preparation and testing is conducted in a laboratory, values obtained on the field applied materials may vary.

PLACEMENT GUIDELINES

SUBSTRATE PREPARATION

Stonchem 856, with the appropriate primer, is suitable for application over concrete, wood, brick, quarry tile, metal or Euclid Concrete Repair products. For questions regarding other possible substrates or an appropriate primer, contact your local Stonhard representative or Technical Service Department.

SUBSTRATE PREPARATION

Proper preparation is critical to ensure an adequate bond. The substrate must be dry and free of all wax, grease, oils, fats, soil, loose or foreign materials and laitance. Laitance and unbonded cement particles must be removed by mechanical methods, i.e. abrasive blasting or scarifying. Other contaminants may be removed by scrubbing with a heavy-duty industrial detergent (Carboclean 250 and Carboclean 252) and rinsing with clean water. Previously contaminated substrates should be neutralized and thoroughly rinsed clean with potable water. pH checks with litmus paper should be carried out to confirm neutral substrates. The surface must show open pores throughout with main aggregate in concrete exposed and have a sandpaper texture. Substrate moisture content prior to coating should be below 5% and substrate tensile strength above 2 MPa. For recommendations or additional information regarding substrate preparation, refer to surface preparation data sheet or contact StonCor Africa Technical Service Department.

SUBSTRATE REPAIR, REPROFILING AND "NEGATIVE SIDE" WATERPROOFING

Reinstatement of damaged or defective concrete should be carried out using Euclid Concrete Repair products as per the product data sheets. The minimum depth repair should be no less than 10mm and perimeter edge cuts should be made perpendicular to the surface to avoid feather edging. For trafficable floor areas, a minimum depth of 25mm is required.

Reprofiling of uneven surfaces and controlling rising moisture should be carried out using Euclid Cement-based Waterproofing products as per the product data sheet.

CRACK TREATMENT

The joint or crack to be treated must be filled with Pro-Struct 849 prior to the application of Stonflex CR9. Pro-Struct 849 must be allowed to cure for a minimum of 12 hours at 21°C. Mix and apply Stonflex CR9 by brush over the crack at a thickness of 500 microns, 30mm either side of the crack.

Using pre-cut 50mm wide non-woven 110 to 120gm/m² geotextile fabric (pre-approved by StonCor Africa), centre the geotextile fabric lengthwise over the joint, firmly press and embed it into the Stonflex CR9 whilst still wet. Use a non-stick roller, squeegee or trowel to embed the geotextile fabric.

Apply a further coat, ensuring full saturation of the fabric. Allow to cure. Exposed fabric fibres or edges or other discontinuities shall not be accepted. Apply a further coat at 250µm.

APPLICATION GUIDELINES

For optimal working conditions, substrate temperature must be between 15 to 30°C. Cold areas must be heated until the slab temperature is above 15°C to ensure the material achieves a proper cure. A cold substrate will make the material stiff and difficult to apply. Warm areas or areas in direct sunlight must be shaded or arrangements made to work during evenings or at night. A warm substrate (15 to 30°C) will aid in the material's workability; however, a hot substrate (30 to 35°C) or a substrate directly in the sun will shorten the material's working time and can cause other phenomenon such as pinholing and bubbling. Substrate temperature should be greater than 3°C above dew point.

Application and curing times are dependent upon ambient and surface conditions. Consult StonCor Africa Technical Service Department if conditions are not within recommended guidelines.

FIELD GEL TESTS

Due to the unique nature of the 800 Series resins, their reactivity is affected by storage conditions and age; therefore, it is important to test the cure of the materials prior to application. Gel tests should be performed for each lot of each product shipped to a job to prevent problems related to material curing.

PRIMING

Vacuum the substrate before priming, and make sure the surface is dry with a moisture content below 5%. The use of Stonchem 700/800 Series Primer is necessary in all applications of Stonchem 856. This ensures maximum product performance. (See the Stonchem 700/800 Series Primer product data sheet for details).

Do not leave mixed primer in tin. Pour out primer onto several paint trays and apply using a mohair roller.

NOTE: Stonchem 700/800 Series Primer must be tack-free prior to the application of the Saturant – Basecoat (usually 4 to 6 hours).

APPLYING

Saturant – Basecoat

Premix the resin and catalyst for 30 seconds in a 5 litre container using a heavy-duty, slow-speed mechanical mixer (400 to 600 rpm) with a Spiral Mixer. Add the peroxide and mix for a one minute. Pour the saturant onto the substrate and spread out with a 1mm

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(Stonchem 856)

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notched trowel. The saturant should be spread out in a sequence to allow for easy application of the engineering fabric. Do not leave any puddling during this trowelling step. Puddling will lead to over saturation of the fiberglass.

Engineering Fabric

Place the engineering fabric on the wet saturant immediately after the saturant is applied. This is important to achieve maximum wetting. Press the fabric into the saturant with a dry, medium nap roller. Overlap adjacent fabric 10mm. Immediately apply the next saturant step.

Saturant

Premix the resin and catalyst for 30 seconds in a 5 litre container using a heavy-duty, slow-speed mechanical mixer (400 to 600 rpm) with a Spiral Mixer. Add the peroxide and mix for a further one minute and transfer to a paint tray. Apply the saturant to the engineering fabric with a saturated medium nap roller. To wet the roller, dip it into the tray. Do not pour the saturant directly onto the fabric. This will decrease the saturant's coverage. If air temperature is high, the use of plastic buckets will increase the pot life of the material. The fabric is complete saturated when white strands are no longer present. When the fabric is completely saturated, roll with a ribbed roller to release air pockets in the reinforcement and to help mesh glass and saturant together. To saturate the overlaps, roll several times over the length of the overlap with a saturated roller. Then, roll with a ribbed roller several times until the overlap is no longer visible. Allow the saturant and fabric to cure (usually 4 to 6 hours) before proceeding.

Mortarcoat

Sand the fabric / saturant layer with a sanding disc attachment in areas with protruding fibres. Pre-mix the resin and catalyst for 30 seconds in a mixing container using a heavy-duty, slow-speed mechanical mixer (400 to 600 rpm) with a Spiral Mixer. Add the peroxide and mix for a further one minute. Next, gradually add the Mortarcoat aggregate while mixing for an additional two minutes. Mixing is complete when no dry clumps of material exist. Pour the material onto the floor and spread out with a 1mm notched trowel. Backroll the area with a medium nap roller to remove trowel lines. The wet film thickness of the Mortarcoat is 400 to 500 microns. Allow the Mortarcoat to cure, usually 4 to 6 hours, before proceeding. The material may appear rough at first but will level out to a smooth finish. For vertical surfaces, use a steel trowel to pull an initial coat onto the wall, then finish smooth with a trowel.

Topcoat

Sand the Mortarcoat in areas where protrusions exist. Vacuum the area completely. Premix the resin and catalyst for 30 seconds in a 5 litre container using a heavy-duty, slow-speed mechanical mixer (400 to 600 rpm) with a Jiffy Mixer. Add the peroxide and mix for a further one minute. Pour the material onto the floor and spread out with a 1mm notched trowel. Backroll the area with a medium nap roller to remove trowel lines using long roll strokes to decrease the visibility of roller lines. For vertical surfaces, pour a bead of material along the base of the wall. Using a medium nap roller, roll the material up onto the wall. The wet film thickness of the coating is 250 to 350 microns. Check the thickness with a wet film gauge.

CURING

The surface of Stonchem 856 will be tack-free in 4 to 6 hours at 21°C. The coated area may be put back into service in 24 hours at 21°C. Ultimate physical characteristics will be achieved in 7 days.

PRECAUTIONS

- Avoid contact with Stonchem 856 vinyl ester resin, catalyst and peroxide (organic peroxide) as they may cause skin, respiratory and eye irritation.
- Acetone is recommended for clean-up of Stonchem 856 resin (vinyl ester resin), catalyst and peroxide (organic peroxide) materials spills. Use these materials only in strict accordance with the manufacturer's recommended safety procedures. Dispose of waste materials in accordance with government regulations.
- The use of NIOSH/MSHA approved respirators using an organic vapor / acid gas cartridge is mandatory.
- The selection of proper protective clothing and equipment will significantly reduce the risk of injury. Body covering apparel, safety goggles or safety glasses and impermeable gloves are required.
- In case of contact, flush area with water for 15 minutes and seek medical attention. Wash skin with soap and water.
- If material is ingested, immediately contact a physician. **DO NOT INDUCE VOMITING.**
- Use only with adequate ventilation. Inhalation of vapours may cause severe headaches, nausea and possibly unconsciousness.

NOTES

- Material Safety Data Sheets for Stonchem 856 are available online at www.stoncor.co.za, under products or upon request.
- Specific information regarding the chemical resistance of Stonchem 856 is available in the Stonchem 800 Series Chemical Resistance Guide.
- A staff of technical service engineers is available to assist with product application or to answer questions related to Stonhard's products.
- Requests for technical literature or service can be made through local sales representatives and offices or corporate offices located worldwide.