

PRODUCT DESCRIPTION

Stonchem 656 is a highly cross-linked novolac epoxy system applied at a nominal thickness of 1,5mm. The resin, engineering fabric, Mortarcoat, mineral composite topcoat sequencing provides a smooth, heavy-duty chemical barrier which is resistant to small static cracks and moderate thermal shock. The Stonchem 656 has excellent resistance to concentrated sulphuric acid, chlorinated solvents and caustics.

USES

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

PRODUCT ADVANTAGES

- Excellent chemical resistance to concentrated sulphuric acid, chlorinated solvents and caustics
- 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 656 is formulated to resist a variety of chemical solutions. (Refer to the Stonchem 600 Series Chemical Resistance Guide for lists of reagent concentration and temperature recommendations for each product).

PRECAUTION

Stonchem 600 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: Stonprime 786 OPR
5lt Kit; Part A & B – Approximately 14m²/5 litre

Saturant: Stonchem 600S
5lt Kit; Part A & B – Approximately 4,0m²/5 litre

Engineering Fabric: 1 Roll 50kg CSM 450 – Approximately 111m²

Mortarcoat: 5lt Stonchem 600S + 10kg Stonchem Mortarcoat Aggregate
Saturant + Mortarcoat Aggregate = 8 litres – Approximately 16m²/8 litre

Topcoat: Stonchem 600T
8lt Kit; Part A & B – Approximately 25m²/8 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 shelf life is 1 year in the original, unopened container.

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TYPICAL PROPERTIES AT 25°C

Tensile Strength ASTM D307	33 MPa
Flexural Strength ASTM C580	82 MPa
Flexural Modulus of Elasticity ASTM D790	6.9 x 10 ³ MPa
Hardness ASTM D2240, Shore D	85 to 90
Abrasion Resistance ASTM D4060, CS17	0.07gm max weight loss
Thermal Coefficient of Linear Expansion, ASTM C531	21 x 10 ⁻⁶ mm/mm/°C
Colour	Red or Grey
VOC	20g/litre
Volume Solids	100%

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.

(Stonchem 656)

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APPLICATION

SUBSTRATE

Stonchem 656, 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 StonCor Africa 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 applied as a dense 3mm layer using steel trowels, 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.

PRIMING

Vacuum the substrate before priming, and make sure the surface is dry. The use of Stonprime 786OPR is necessary in all applications of Stonchem 656. This ensures maximum product performance. (See the Stonprime 786OPR product data sheet for details).

NOTE: Stonprime 786OPR must be tack-free prior to the application of the Saturant – Basecoat (usually 4 to 6 hours). If primer is left longer than 12 hours, it must be abraded and reprimed.

APPLYING

Saturant – Basecoat – Stonchem 600S

Mix Part A and B in the 5 litre container using a heavy-duty, slow-speed mechanical mixer (400 to 600 rpm) with a Jiffy Mixer for one minute. Pour the saturant onto the substrate and spread out with a 1mm 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 trowel step. Puddling will lead to over saturation of the fiberglass.

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Engineering Fabric

Place the engineering fabric on the 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 – Stonchem 600S

Mix the Part A & B in the 5 litre container using a heavy-duty, slow-speed mechanical mixer (400 to 600 rpm) with a Jiffy Mixer for 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 completely 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 – Stonchem 600S + Mortarcoat Aggregate

Lightly sand the fabric / saturant layer with a sanding disc attachment in all areas to remove protruding fibres. Pre-mix Part A & B in a mixing container using a heavy-duty, slow-speed mechanical mixer (400 to 600 rpm) with a Jiffy Mixer for 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.

Topcoat – Stonchem 600T

Lightly sand the Mortarcoat in areas where protrusions exist. Vacuum the area completely. Mix the Part A & B in a 5 litre container, using a heavy-duty, slow-speed mechanical mixer (400 to 600 rpm) with a Jiffy Mixer for two minutes. 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 656 will be tack-free in 4 to 6 hours at 21°C. The coated area may be put back in service in 24 hours at 21°C. Ultimate physical characteristics will be achieved in 7 days.

RECOMMENDATIONS

- Apply only on clean, sound, dry and properly prepared substrates.
- Minimum ambient and surface temperature is 15°C at the time of application.
- Maximum surface temperature should not exceed 30°C during application. **Substrate temperatures above 38°C will drastically affect the working time of the product.**
- Substrate temperature should be greater than 3°C above dew point.
- Material should not be applied if humidity is above 85%.
- Application and curing times are dependent upon ambient and surface conditions. Consult Stonhard's Technical Service Department if conditions are not within recommended guidelines.

PRECAUTIONS

- Avoid contact with Stonchem 656 amine and resin as they may cause skin, respiratory and eye irritation.
- Carboline Thinner # 2 or Carboline Thinner # 10 are recommended for clean-up of Stonchem 656 resin and amine material 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 highly recommended.
- The selection of proper protective clothing and equipment will significantly reduce the risk of injury. Body coverage apparel, safety goggles and impermeable gloves are highly recommended.
- In the event of accidental eye contact, rinse eyes immediately with water.
- If material is ingested, immediately contact a physician. **DO NOT INDUCE VOMITING.**
- Use only with adequate ventilation. Inhalation of vapors may cause severe headaches, nausea and possibly unconsciousness.

NOTES

- Material Safety Data Sheets for Stonchem 656 are available upon request.
- Specific information regarding chemical resistance of Stonchem 656 is available in the Stonchem 600 Series Chemical Resistance Guide.

- A staff of technical service engineers is available to assist in product application or to answer questions related to Stonhard products.
- Requests for technical literature or service can be made through local sales representatives and offices, or corporate offices located worldwide.