

## STONCHEM® 658

### PRODUCT DESCRIPTION

Stonchem 658 is a 100% solids, high performance epoxy, heavy-duty lining system applied at a nominal thickness of 3mm. The base coat liquids are reinforced with a fiberglass woven cloth that reinforces the system to resist the stresses caused by cracks. The heavily broadcasted aggregate topcoat over the fiberglass woven cloth helps protect the fabric by providing a wear layer that adds durability and abrasion resistance to the system – more than a typical reinforced lining system. Stonchem 658 has excellent resistance to sulphuric acid at various concentrations at a maximum temperature of 38°C.

### USES

- Process slabs
- Tank farms
- Chemical loading and unloading areas
- Spill containment areas
- Truck unloading areas

### PRODUCT ADVANTAGES

- Excellent resistance to chemical attack
- Excellent abrasion and impact resistance
- Good thermal shock resistance
- Superior bonding qualities
- High cohesive strength
- Low permeability
- Low odour

### CHEMICAL RESISTANCE

Stonchem 658 is formulated to resist a variety of chemical solutions (refer to the Stonchem 600 series chemical resistance guide for lists of reagent concentrations and temperature recommendations).

### PRECAUTION

Stonchem 658 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 3m<sup>2</sup>/lt/coat

**Basecoat / Topcoat, Stonchem 658:** 5lt Kit Part A + B: Approximately 2lt/m<sup>2</sup>

**Acid-resistant Woven Cloth:** 1 Roll SC-GSC 450 (50 x 1,5m)

**Broadcast Aggregate:** 25kg Medium Texture # 6222, Approximately 2kg/m<sup>2</sup>

### VERTICAL MORTAR:

7,5kg (5lt) Medium Texture # 6222 per 5lt Stonchem 658  
Yields 8lt per kit : approximately 3m<sup>2</sup>/kit

**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 10-24°C in a dry area. Keep out of direct sunlight. Avoid excessive heat and do not freeze.

### SHELF LIFE:

The shelf life is 1 year in the original, unopened container.

### TYPICAL PROPERTIES AT 25°C

<b>Compressive Strength ASTM C-579</b>	110 MPa
<b>Tensile Strength ASTM D-638</b>	58 MPa
<b>Flexural Strength ASTM C-580</b>	89.9 MPa
<b>Flexural Modulus of Elasticity ASTM C-580</b>	5 x 10 <sup>5</sup> MPa
<b>Hardness ASTM D-2240, Shore D</b>	75 to 85
<b>Bond Strength ASTM D-4641</b>	> 2 MPa (100% concrete failure)
<b>Abrasion Resistance ASTM D-4060, CS-17</b>	0.056gm max.weight loss
<b>Thermal Coefficient of Linear Expansion (ASTM C-531)</b>	11.1 x 10 <sup>-5</sup> mm/mm°C
<b>Colour</b>	Red / Grey
<b>VOC Content</b>	20g/l
<b>Fire Resistance ASTM 65</b>	Self extinguishing Extent of burning 6mm max
<b>Volume Solids</b>	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 environment, values obtained on field applied materials may vary and certain test methods can only be conducted on lab made test coupons.

## PLACEMENT GUIDELINES

### SCOPE OF WORK (BOQ):

Prepare surfaces and apply Stonchem 658 heavy duty, woven cloth reinforced, acid lining system.

### SUBSTRATE PREPARATION:

Remove all oils, grease and other contaminants by scrubbing with Carboclean 252 and rinsing with clean running potable water, to obtain a water break-free surface. Allow to dry. Abrade the surface by vacu-blasting, or scarifying to remove the laitance, open all voids and expose the aggregate to a depth of 1 to 2mm. The roughened surface should be a dust free sound concrete surface with a portion of the main aggregate in the concrete exposed. A minimum tensile strength of 2 MPa and moisture content of less than 5% is required.

### JOINT TREATMENT PRIOR TO LINING:

All joints should be profiled such that they are raised and liquids flow away from the joints and not along the joint. If this has not been catered for in the design, an epoxy mortar consisting of 1 litre Stonprime 786 OPR mixed with 6kg Pro-Struct 622 graded aggregate should be screeded 100mm on either side of the joint to create a wedge shape at least 5mm high at the joint, screeded down to 1mm on the perimeter. Allow to cure and re-cut the joint to the width specified by the engineer to cater for slab movement. Applicator must ensure that no ponding will occur behind raised joint, depending on the direction of fall.

Apply Stonchem 658 lining system over the epoxy mortar up to the raised joint and when cured, recut the joint to give clean, sound edges. Prime the cut sides with Stonprime 639 and place a backing cord to a minimum depth of 10mm. Install Pro-Struct 849 sealant tooling level with the lining system, ensuring depressions are not left in the sealant to harbour chemical attack.

### 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/m<sup>2</sup> 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 PROCEDURE:

#### Vertical Surfaces:

- Prime the prepared substrate with Stonprime 786 OPR using a medium nap roller to achieve 300 microns dry film thickness (theoretical coverage at 3.3m<sup>2</sup> per litre). Whilst still wet, broadcast Stonhard 6222 aggregate into the primer to create a rough profile. Allow to cure for 4 to 6 hours, but no longer than 12 hours, prior to installing the balance of the system, or the area will require re-priming.
- Mix a 5 litre kit of Stonchem 658 Part A and B together for 2 minutes using a mechanical mixer fitted with a spiral impeller mixer, then add a 5 litre measure of Stonhard 6222 aggregate to form 8 litres of trowelable mortar. Using a steel 10mm square shaped notch trowel, skim the mortar to the primed tops and sides of the bund walls to achieve 2.6mm dry film thickness (theoretical coverage 0.35m<sup>2</sup> per litre of mortar). Whilst the mortar is still wet, place the pre-cut 450g per m<sup>2</sup> acid resistant woven fiberglass scrim cloth into the wet Stonchem 658, overlapping seams by 50mm as the installation proceeds. Using a steel float, flatten and embed the fiberglass cloth into the resin, ensuring total saturation of the cloth, leaving no cloth left exposed.
- Within 6 to 18 hours, using a medium nap roller, apply a seal coat of Stonchem 658 resin to achieve 300 microns dry film thickness (theoretical coverage 3.3m<sup>2</sup> per litre). The curing time may vary depending upon ambient and surface conditions.
- The coated area may be put back into service after 36 hours at 25°C. Ultimate physical characteristics will be achieved in 7 days.

#### Horizontal Surfaces:

- Prime the prepared substrate with Stonprime 786 OPR using a medium nap roller to achieve a 300 micron dry film thickness (theoretical coverage at 3.3m<sup>2</sup> per litre). Allow to cure for 4 to 6 hours, but no longer than 12 hours, prior to installing the balance of the system, or the area will require re-priming.

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(Stonchem 658)

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- Mix the Stonchem 658 Base and Activator thoroughly for 2 minutes using a mechanical mixer fitted with a spiral impeller. Pour onto the primed area and spread with a 3mm notched rake to achieve 1.2mm dry film thickness (theoretical coverage 0.83m<sup>2</sup> per litre).
- Place the pre-cut 450 gram per m<sup>2</sup> acid resistant woven fiberglass cloth into the wet Stonchem 658, overlapping seams by 50mm as the installation proceeds. Using a steel float, flatten and embed the fiberglass cloth into the resin, ensuring total saturation of the cloth, leaving no cloth or cavity exposed.
- Immediately broadcast the Stonhard 6222 aggregate at a theoretical coverage rate of 2kg per m<sup>2</sup> or until a dry layer is achieved on the surface. Allow the resin to cure for a minimum of 6 hours at 25°C, then sweep off the excess aggregate, denib and vacuum off all loose material.
- Within 6 to 18 hours, apply a topcoat of Stonchem 658 resin to the cured system to achieve 380 microns dry film thickness (theoretical coverage 2.6m<sup>2</sup> per litre). More product may be needed to meet the finish texture and the 3mm thickness required by the job specification. The surface of Stonchem 658 will be tack-free in 12 to 18 hours at 25°C. The coating may be put back into service in 36 hours at 25°C. Ultimate physical characteristics will be achieved in 7 days. The curing time may vary depending upon ambient and surface conditions.
- **Do not attempt to install material if temperature of components and substrate are not within 16 to 30°C. Application properties, cure time and chemical resistance of the material is severely affected.**

#### RECOMMENDATIONS:

- Apply only on clean, sound, dry and properly prepared substrates.
- Minimum ambient and surface temperature is 16°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 StonCor Africa Technical Service Department if conditions are not within recommended guidelines.

#### NOTES:

- Refer to the material safety data sheets regarding individual components. Material safety data sheets are available on request.
- Specific information regarding the chemical resistance of Stonchem 658 is available in the Stonchem 600 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.

#### PRECAUTIONS AND SAFETY:

- Before it cures, Stonchem 658 may be cleaned from tools and equipment using Pro-Struct 105 Brush Cleaner and rinse with hot, soapy water.
- Carboline Thinner # 2 or # 10 is recommended for clean-up of Stonchem 658 amine or resin 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.
- It is recommended that the operator provide himself with clean overalls and rubber soled shoes and observe good personal hygiene. Certain personnel may be sensitive to various types of resins which may cause dermatitis.
- The selection of proper protective clothing and equipment will significantly reduce the risk of injury. Body covering apparel, safety goggles and impermeable gloves are highly recommended.
- In case of contact, flush the area with copious amounts of water for 15 minutes and seek medical attention. Wash skin with soap and water.
- The use of NIOSH / MSHA approved air purifying respirators equipped with an organic vapor / acid gas cartridge is required for all applications.
- Use only with adequate ventilation.