

PRODUCT DESCRIPTION

Stonchem 678 is a highly cross-linked, novolac epoxy lining system applied at a nominal thickness of 3.5 mm. The mortar, engineering fabric, mortarcoat, mineral composite topcoat sequencing provides a smooth, heavy-duty chemical barrier which is resistant to thermal shock, thermal cycling, static cracks, permeation and abrasion. The Stonchem 678 system has excellent resistance to concentrated sulfuric acid, chlorinated solvents and caustics.

USES, APPLICATIONS

- Secondary containment areas
- Tank farms
- Sumps and trenches
- Pump pads and pedestals
- Neutralization pits
- Process floors

PRODUCT ADVANTAGES

- Excellent chemical resistance to concentrated sulfuric 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 678 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.

PACKAGING

Stonchem 678 is packaged in units for easy handling. Each unit consists of:

Mortar

- 1 carton of Stonchem 600 Series Mortar
- A carton contains:
 - 6 foil bags of Amine
 - 6 poly bags of Resin
 - 6 bags of Mortar Aggregate

Engineering Fabric

- 1 roll of Engineering Fabric 18.58 m² roll

Saturant

- 0.4 carton of Stonchem 600 Series Saturant
- A carton contains:
 - 6 foil bags of Amine
 - 6 poly bags of Resin

PHYSICAL CHARACTERISTICS

Compressive Strength (ASTM C-579)	69 N/mm ²
Tensile Strength (ASTM D-307)	21 N/mm ²
Flexural Strength (ASTM C-580)	90 N/mm ²
Flexural Modulus of Elasticity (ASTM C-790)	6.9 × 10 ³ N/mm ²
Hardness. (ASTM D-2240, Shore D)	85 to 90
Abrasion Resistance (ASTM D-4060, CS-17)	0.07 gm max. weight loss
Thermal Coefficient of Linear Expansion (ASTM C-531)	3.9 × 10 ⁻⁵ m/mm°C
Color	Gray
Cure Rate (@21°C)	4 to 6 hours tack-free 24 hours chemical service
VOC Mortar/Saturant (ASTM D-2369, Method E)	.80 g/l

Note: The above physical properties were measured in accordance with the referenced standards. Samples of the actual system, including binder and filler, were used as test specimens.

Mortarcoat

- 0.5 carton of Stonchem 600 Series Mortarcoat
- A carton contains:
 - 6 foil bags of Amine
 - 6 poly bags of Resin
 - 3 bags of Mortarcoat Aggregate

Topcoat

- 1 carton of Stonchem 600 Series Topcoat
- A carton contains:
 - 4 foil bags of Amine
 - 4 poly bags of Resin

COVERAGE

Each unit of Stonchem 678 will cover approximately 16.72 m² at a thickness of 3.5 mm.

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.

STORAGE CONDITIONS

Store all components between 10 to 24°C in a dry area. Keep out of direct sunlight. When stored in the unopened containers at the proper temperatures, the shelf life is 3 years. Store all engineering fabric in a clean and dry area.

SUBSTRATE

Stonchem 678, with the appropriate primer, is suitable for application over concrete, wood, brick, quarry tile, metal or Stonhard Stonset grouts. For questions regarding other possible substrates or an appropriate primer, contact your local Stonhard representative or Technical Service.

SUBSTRATE PREPARATION

Proper preparation is critical to ensure an adequate bond and system performance. The substrate must be dry and properly prepared utilizing mechanical methods. Questions regarding substrate preparation should be directed to your local Stonhard representative or Technical Service.

APPLICATION GUIDELINES

For optimal working conditions, substrate temperature must be between 15 to 27°C. Cold areas must be heated until the slab temperature is above 13°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 27°C) will aid in the material's workability; however, a hot substrate (27 to 37°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 Stonhard's Technical Service Department if conditions are not within recommended guidelines.

PRIMING

Vacuum the surface before priming and make sure the substrate is dry. The use of Stonchem Epoxy Primer is necessary in all applications of Stonchem 678. This ensures maximum product performance. (See the Stonchem Epoxy Primer product data sheet for details.)

Note: The Stonchem Epoxy Primer must remain tacky during installation of the Mortar.

APPLYING

Mortar

Mix the amine and resin in a 5 gallon mixing bucket on a J.B. Blender for one minute. Next, gradually add the Mortar aggregate while mixing for an additional 90 seconds. Mixing is complete when no clumps of dry material exist. For vertical applications, use Vertical Mortar aggregate. Apply the mortar onto the substrate with a 3/8 in. x 3/8 in. V-notched trowel. To obtain the proper thickness, hold the trowel at approximately 45

degrees and keep the tips of the V-notches in contact with the substrate. The material must be applied evenly over the substrate with no clumps or ridges present before embedding the engineering fabric. The engineering fabric will not remove or hide any unevenness in the troweled mortar layer. If applying mortar on a vertical surface, use the same V-notched trowel to spread the material, then finish smooth with a flat steel finishing trowel. A smooth and even distribution of the material must exist on a vertical surface before embedding the engineering fabric.

Engineering Fabric

Place the engineering fabric on the mortar immediately after the mortar is applied. Press the engineering fabric onto the mortar using a dry, medium nap roller. Overlap adjacent engineering fabric 13 mm. Immediately apply the saturant.

Saturant

Mix the amine and resin in a 5 gallon mixing container using a heavy-duty, slow-speed drill (400 to 600 rpm) with a mixing blade for one minute. Apply the saturant to the engineering fabric with a saturated medium nap roller. To wet the roller, dip it into the mixing bucket. Always work from the bucket. Do not pour the saturant directly onto the engineering fabric; this will decrease the saturant's coverage. If the air temperature is above 27°C, use of plastic mixing buckets will increase the pot life of the material. The engineering fabric is completely saturated when white strands are no longer present. When the engineering fabric is completely saturated, roll with a ribbed roller to release air pockets in the reinforcement and to embed the engineering fabric into the mortar. 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 mortar, engineering fabric and saturant to cure (approximately 4 to 6 hours) before proceeding.

Mortarcoat

Lightly sand the engineering fabric/saturant layer with a sanding disc attachment in areas with protruding fibers. Pre-mix the amine and resin in a 5 gallon mixing bucket with a heavy-duty, slow-speed drill (400 to 600 rpm) with a mixing blade for one minute. Next, gradually add the Mortarcoat aggregate while mixing for an additional two minutes. For vertical applications, use Vertical Mortarcoat aggregate. Mixing is complete when no dry clumps of material exist. Pour the material onto the floor and spread out with a 15 mil notched squeegee. Backroll the area with a medium nap roller to remove squeegee lines. The material may appear rough at first but will level out to a smooth finish. For vertical applications, use a large steel trowel or knife to pull an initial coat of vertical material onto the wall, then finish smooth with a flat rubber squeegee.

Topcoat

Lightly sand the mortarcoat in areas where protrusions exist. Vacuum the area completely. Mix the amine and resin in a 5 gallon mixing container using a heavy-duty, slow-speed drill (400 to 600 rpm) with a mixing blade for one minute. Pour the material onto the floor and spread out with a 15 mil notched squeegee. Backroll the area with a medium nap roller to remove squeegee lines using long roll strokes to decrease the visibility of roller lines. For vertical applications, pour a bead of material along the base of the wall and, using a medium nap roller, roll the material onto the vertical surface. The wet film thickness of the coating is 250 to 300 microns. Check the thickness with a wet film gauge.

CURING

The surface of Stonchem 678 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 678 amine and resin, as they may cause skin, respiratory and eye irritation.
- Acetone solvents are recommended for clean up of Stonchem 678 amine and resin material spills. Use these materials only in strict accordance with the manufacturers' 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 recommended.
- The selection of proper protective clothing and equipment will significantly reduce the risk of injury. Body covering apparel, safety goggles and impermeable nitrile 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.
- If material is ingested, immediately contact a physician. **DO NOT INDUCE VOMITING.**
- Use only with adequate ventilation.

NOTES

- Safety Data Sheets for Stonchem 678 are available upon request.
- Specific information regarding chemical resistance of Stonchem 678 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 products.
- Requests for technical literature or service can be made through local sales representatives and offices, or corporate offices located worldwide.

IMPORTANT:

Stonhard believes the information contained here to be true and accurate as of the date of publication. Stonhard makes no warranty, expressed or implied, based on this literature and assumes no responsibility for consequential or incidental damages in the use of the systems described, including any warranty of merchantability or fitness. Information contained here is for evaluation only. We further reserve the right to modify and change products or literature at any time and without prior notice.

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