STONCHEM 778

PRODUCT DATA

PRODUCT DESCRIPTION

Stonchem 778 is a chlorendic acid-based, unsaturated, polyester resin lining system applied at a nominal thickness of 140 mil/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 778 system has excellent resistance to strong oxidizers such as concentrated nitric and chromic acids.

USES, APPLICATIONS

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

PRODUCT ADVANTAGES

- Excellent chemical resistance to strong oxidizers such as concentrated nitric and chromic acids
- Engineering fabric resists cracking
- Mortarcoat for added abrasion resistance
- Mineral composite topcoat for increased impermeability
- Factory proportioned units for easy application

CHEMICAL RESISTANCE

Stonchem 778 is formulated to resist a variety of chemical solutions. Refer to the Stonchem 700 Series Chemical Resistance Guide which lists reagent concentration and temperature recommendations for each product.

PACKAGING

Stonchem 778 is packaged in units for easy handling. Each unit consists of:

Mortar

3 cartons of Stonchem 700 Series Mortar
A carton contains:
2 jars of peroxide
2 cans of resin

6 bags of Mortar aggregate

PHYSICAL CHARACTERISTICS

Compressive Strength . . . . . 11,500 psi (ASTM C-579)
Tensile Strength . . . . . 3,000 psi (ASTM D-638)
Flexural Strength . . . . . 13,000 psi (ASTM C-580)
Flexural Modulus of Elasticity . . . . . 1×10^6 psi (ASTM C-580)
Hardness . . . . . 85 to 90 (ASTM D-2240, Shore D)
Bond Strength . . . . . >400 psi (ASTM D-4541) (100% concrete failure)
Abrasion Resistance . . 0.10 gm max. weight loss (ASTM D-4060, CS-17)
Thermal Coefficient of Linear Expansion . . . . . 2×10^{-5} in./in.˚C (ASTM C-531)
Color . . . . . Gray

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.

Engineering Fabric

1 roll of Engineering Fabric
200 sq. ft./18.58 sq. m roll

Saturant

1.2 cartons of Stonchem 700 Series Saturant
A carton contains:
2 jars of peroxide
2 cans of resin

Mortarcoat

1.5 cartons of Stonchem 700 Series Mortarcoat
A carton contains:
2 jars of peroxide
2 cans of resin

3 bags of Mortarcoat aggregate

Topcoat

1 carton of Stonchem 700 Series Topcoat
A carton contains:
2 jars of peroxide
2 cans of resin

COVERAGE
Each unit of Stonchem 778 will cover approximately 180 sq. ft./16.72 sq. m at a thickness of 140 mil/3.5 mm.

STORAGE CONDITIONS
Store all components between 50 to 75˚F/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 6 months. Store all engineering fabric in a clean and dry area.

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 material 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 and rinsing with clean water. The surface must show open pores throughout and have a sandpaper texture. For recommendations or additional information regarding substrate preparation, contact Stonhard's Technical Service Department.

APPLICATION GUIDELINES
Before mixing and applying any material, make sure environmental conditions are satisfactory for application. For optimal working conditions, substrate temperature must be between 60 to 80˚F/15 to 27˚C. Measure the surface temperature with a surface thermometer. Cold areas must be heated until the slab temperature is above 55˚F/13˚C. This will allow the material to achieve a proper cure. Also, a cold substrate will make the materials 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 (60 to 80˚F/15 to 27˚C) will aid in the material's workability; however, a hot substrate (80 to 100˚F/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.

APPLYING
Priming
Vacuum the surface before priming and make sure the concrete substrate is dry. The use of 800 Series Primer is necessary in all applications of Stonchem 778. This ensures maximum product performance. (See the 800 Series Primer product data sheet for details.)

> **Note:** Stonchem 800 Series Primer must be wet during installation of the mortar.

Mortar
Pre-mix the peroxide 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 reinforcement.

Engineering Fabric
Place the engineering fabric on the mortar immediately after the mortar is applied. Press the fabric onto the mortar using a dry, medium nap roller. Overlap adjacent fabric 1/2 in./13 mm. Immediately apply the saturant.

Saturant
Mix the peroxide and resin in a 5 gallon mixing container using a heavy-duty, slow-speed drill (400 to 600 rpm) with a Jiffy Mixer 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 glass. This will decrease the saturant's coverage. If the air temperature is high, use of plastic mixing buckets will increase the potlife 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 embed the 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, fabric and saturant to cure (usually 4 to 6 hours) before proceeding.

Mortarcoat
Lightly sand the fabric/saturant layer with a sanding disc attachment in areas with protruding fibers. Premix the peroxide and resin in a 5 gallon mixing bucket with a heavy-duty, slow-speed drill (400 to 600 rpm) with a Jiffy Mixer for one minute. Next, gradually add the Mortarcoat aggregate while mixing for an additional 2 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 surfaces, 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 peroxide and resin in a 5 gallon mixing container using a heavy-duty, slow-speed drill (400 to 600 rpm) with a Jiffy Mixer for 2 minutes. 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 surfaces, 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 10 to 12 mil/250 to 300 microns. Check the thickness with a wet film gauge.

CURING
The surface of Stonchem 778 will be tack-free in 4 to 6 hours at 70˚F/21˚C. The coated area may be put back into service in 24 hours at 70˚F/21˚C. Ultimate physical characteristics will be achieved in 7 days.

RECOMMENDATIONS
- Apply only on clean, sound, dry and properly prepared substrate.
- Minimum ambient and surface temperatures are 55˚F/13˚C at the time of application.
- Maximum surface temperatures should not exceed 90˚F/32˚C during the time of installation.
- Substrate temperature should be greater than 5˚F/3˚C above dew point.
- Application and curing times are dependent upon ambient conditions. Consult Stonhard's Technical Service Department if conditions are not within recommended guidelines.

PRECAUTIONS
- Avoid contact with Stonchem 778 resin (polyester resin and styrene monomer) and peroxide (catalyst/organic peroxide), as they may cause skin, respiratory and eye irritation.
- Toluene or Xylene solvents are recommended for clean up of Stonchem 778 resin (polyester resin and styrene monomer) and peroxide (catalyst/organic peroxide) material spills. Use these materials only in strict accordance with the manufac- turers' 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 and impermeable nitrile gloves are highly recommended.
- In case of contact, flush 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. Inhalation of vapors may cause severe headaches, nausea and possibly unconsciousness.

NOTES
- Material Safety Data Sheets for Stonchem 778 are available upon request.
- Specific information regarding chemical resistance of Stonchem 778 is available in the Stonchem 700 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:
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2/06
Rev. 2/06

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