

### PRODUCT DESCRIPTION

Stonchem 878 is a highly cross-linked, vinyl ester lining system applied at a nominal thickness of 3.5 mm. The mortar, engineering fabric, mortarcoat, and 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 878 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
- Sumps and trenches
- Pump pads and pedestals
- Neutralization pits

### PRODUCT ADVANTAGES

- Excellent chemical resistance to a broad range of acids, bases and solvents
- Engineering fabric resists cracking
- Mortarcoat for added abrasion resistance
- Mineral composite topcoat for increased impermeability
- Factory proportioned units for easy application

### CHEMICAL RESISTANCE

Stonchem 878 is formulated to resist a variety of chemical solutions. Refer to the Stonchem 800 Series Chemical Resistance Guide which lists reagent concentration and temperature recommendations for each product.

### PACKAGING

Stonchem 878 is packaged in units for easy handling. Each unit consists of:

#### **Mortar**

2 cartons of Stonchem 800/820 Liquids.

A carton contains:

2 jars of Peroxide

2 cans of Resin

4 bags of Mortar aggregate

#### **Engineering Fabric**

1 roll of Engineering Fabric 18.58 m<sup>2</sup> roll

#### **Saturant**

0.65 carton of Stonchem 800/820 Liquids.

A carton contains:

2 jars of Peroxide

2 cans of Resin

#### **Mortarcoat**

1 carton of Stonchem 800/820 Liquids.

A carton contains:

2 jars of Peroxide

2 cans of Resin

2 bags of 800 Mortarcoat aggregate

#### **Topcoat**

1 carton of Stonchem 800 Series Topcoat

A carton contains:

2 jars of Peroxide

2 cans of Resin

### COVERAGE

Each unit of Stonchem 878 will cover approximately 16.72 m<sup>2</sup> at a thickness of 3.5 mm.

**Note:** If utilizing chopper gun applied fiberglass, there will be a reduction in saturant coverage. Questions regarding coverage rates should be directed to your local Stonhard representative or Technical Service.

### PHYSICAL CHARACTERISTICS

Compressive Strength.....	76 N/mm <sup>2</sup>
(ASTM C-579)	
Tensile Strength.....	21 N/mm <sup>2</sup>
(ASTM D-638)	
Flexural Strength.....	89 N/mm <sup>2</sup>
(ASTM C-580)	
Flexural Modulus of Elasticity .....	6.9 x 10 <sup>3</sup> N/mm <sup>2</sup>
(ASTM C-580)	
Hardness.....	.85 to90
(ASTM D-2240, Shore D)	
Abrasion Resistance .....	0.10 gm max. weight loss
(ASTM D-4060, CS-17)	
Thermal Coefficient	
of Linear Expansion .....	2.1 x 10 <sup>-5</sup> mm/m°C
(ASTM C-531)	
Color .....	Gray
VOC .....	800/820 Liquids 53 g/l
(ASTM D-2369, Method E) .....	800 Topcoat 62 g/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 environment, values obtained on field applied materials may vary and certain test methods can only be conducted on lab made test coupons.

## **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 6 months. Store all engineering fabric in a clean and dry area.

## **SUBSTRATE**

Stonchem 878, with the appropriate primer, is suitable for application over concrete and the following uncoated newly applied Stonhard mortars and grouts: GS, HT, UR, UT, TG6, TG8, CR5 and PM8. 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. For existing coated surfaces, the coating must be completely removed back down to an intact mortar or substrate. Once the coating is removed, prime the prepared surface with Stonchem Epoxy Primer and broadcast with silica aggregate to refusal. Remove any excess silica aggregate prior to system overlayment. Omitting these steps could result in uncured material. 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 during application and curing period.

Application and curing times are dependent upon ambient and surface conditions. Consult Stonhard's 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.

Field gel test kits are included in every shipment of 800 Series material. One gel test contains directions and all of the necessary materials to conduct the testing. Test all lots of material prior to use.

## **PRIMING**

Vacuum the surface before priming, and make sure the concrete substrate is dry. The use of Stonchem 700/800 Series Primer is necessary in all applications of Stonchem 878. This ensures maximum product performance. (See the Stonchem 700/800 Series Primer Product Data sheet for details.)

**Note:** Stonchem 700/800 Series Primer must be wet during installation of the Mortar.

## **APPLYING**

### ***Mortar***

Pre-mix the peroxide and resin in a 20 liter mixing bucket on a J.B. Blender for one minute. Next, gradually add the Mortar aggregate while mixing for an additional 150 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 9 mm x 9 mm 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 and allow the wet mortar to begin saturation of engineering fabric. Overlap adjacent fabric 26 mm.

### ***Saturant***

Mix the peroxide and resin in a 20 liter 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 glass. This will decrease the saturant's coverage. The use of plastic mixing buckets will increase the pot life of the material during warmer working conditions. The 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, fabric and saturant to cure (usually 2 to 4 hours) before proceeding.

### **Mortarcoat**

Lightly sand the engineering fabric/saturant layer in areas with protruding fibers. Pre-mix the peroxide and resin in a 20 liter 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 0.4 mm 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 ridges or imperfections exist. Vacuum the area completely. Mix the peroxide and resin in a 20 liter mixing container using a heavy-duty, slow-speed drill (400 to 600 rpm) with a jiffy mixing blade for one minutes. Pour the material onto the floor and spread out with a 0.4 mm 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 250 to 300 microns. Check the thickness with a wet film gauge.

### **CURING**

The surface of Stonchem 878 will be tack-free in one hour. Area may be returned to dry service after 4 hours and full service after 48 hours of cure at 21°C. Ultimate physical characteristics will be achieved in 7 days.

### **PRECAUTIONS**

- Avoid contact with Stonchem 828 resin (vinyl ester resin and styrene monomer) and peroxide (catalyst/organic peroxide), as they may cause skin, respiratory and eye irritation.
- Acetone is recommended for clean up of Stonchem 828 resin (vinyl ester resin and styrene monomer) and peroxide (catalyst/ organic peroxide) 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 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 vapors may cause severe headaches, nausea and possibly unconsciousness.

### **NOTES**


- Safety Data Sheets for Stonchem 878 are available online at [www.stonhard.com](http://www.stonhard.com) under Products or upon request.
- Specific information regarding chemical resistance of Stonchem 878 is available in the Stonchem 800 Series Chemical Resistance Guide.
- A staff of technical service engineers is available to assist with installation or to answer questions related to Stonhard products.
- Requests for literature can be made through local sales representatives and offices or corporate offices located worldwide.
- The appearance of all floor, wall and lining systems will change over time due to normal wear, abrasion, traffic and cleaning. Generally, high-gloss coatings are subject to a reduction in gloss, while matte-finish coatings can increase in gloss level under normal operating conditions.
- Surface texture of resinous flooring surfaces can change over time as a result of wear and surface contaminants. Surfaces should be cleaned regularly and deep cleaned periodically to ensure no contaminant buildup occurs. Surfaces should be periodically inspected to ensure they are performing as expected and may require traction-enhancing maintenance to ensure they continue to meet expectations for the particular area and conditions of use.

**CE MARKING**

The harmonized European Standard EN 1504-2 „Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 2 : Surface protection systems for concrete” gives specifications for products and systems based on methods “hydrophobic impregnation”, “impregnation” and “coating” for the various principles presented under EN 1504-9.

Products which fall under this specification have to be CE-labelled as per Annex ZA. 1, Tables ZA1a to ZA 1g according to the scope and relevant clauses there indicated and fulfill the requirements of the given mandate of the Construction Products Regulation nr. 305/2011.

For flooring systems not dedicated to protect or reinstate the integrity of a concrete structure, EN 13813 applies. Products acc. EN 1504-2 used as flooring systems with mechanical loads also must fulfil EN 13813. Here below indicated are the performance classes achieve according to the standard. For the specific performance results of the product to the particular tests, please see the actual values above in the PDS.


Stoncor Europe Rue du Travail 9 1400 Nivelles, Belgium  21
DOP.878.2021.10.9-6  EN 1504-2
Surface Protection Product Ingress Protection 1.3 (C) Physical Resistance 5.1 (C)
Cap. Absorption & Permeability to Water Vapor .....W<0.1 kg/m <sup>2</sup> *h <sup>0.5</sup> Water Permeability .....Class III Permeability to CO <sub>2</sub> .....S <sub>d</sub> >50m Adhesion Strength by Pull-Off Test .....>2.0 MPa Fire Resistance .....B <sub>f</sub> -s1 Abrasion Resistance .....<3000mg H-22 Impact Resistance .....Class III

**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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**European Offices:**

Belgium	+32 674 93 710	Spain	+34 933 623 785	Germany	+49 240 541 740
France	+33 160 064 419	Portugal	+351 227 535 642	The Netherlands	+31 165 585 200
Poland	+48 422 112 768	United Kindom	+44 1925 649 458	Italy	+39 022 53 751
		East Europe	+48 422 112 768		