

## PRODUCT DESCRIPTION

Stonchem 628 is a highly cross-linked, novolac epoxy, conductive and spark-proof lining system applied at a nominal thickness of 135 mil/3.3 mm. The mortar, engineering fabric, saturant, mortarcoat, topcoat sequencing provides a smooth, heavy-duty conductive and non-sparking chemical barrier, which is resistant to thermal shock, thermal cycling, static cracks, permeation and abrasion. The Stonchem 628 system has excellent resistance to concentrated sulfuric acid, solvents and caustics.

## USES, APPLICATIONS

- Secondary containment areas
- Tank farms
- Sumps and trenches
- Pump pads and pedestals
- Solvent storage rooms
- Explosion proof rooms

## PRODUCT ADVANTAGES

- Excellent chemical resistance to most mineral acids, solvents and all caustic
- Engineering fabric aids in crack resistance
- Mortarcoat for added abrasion resistance
- Carbon-filled topcoat
- Factory-proportioned units for easy application
- Conductive and non-sparking

## CHEMICAL RESISTANCE

Stonchem 628 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 628 is packaged in units for easy handling. Each unit consists of:

### **Mortar**

2.25 cartons of Stonchem 620 Liquids

Each carton contains:

- 4 foil bags of Amine
- 4 poly bags of Resin
- 9 bags of Mortar Aggregate

### **Engineering Fabric**

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

### **Saturant**

0.25 carton of Stonchem 620 Liquids

Each carton contains:

- 4 foil bags of Amine
- 4 poly bags of Resin

### **Mortarcoat**

0.75 carton of Stonchem 620 Liquids

Each carton contains:

- 4 foil bags of Amine
- 4 poly bags of Resin
- 3 bags Mortarcoat Aggregate

### **Topcoat**

1 carton of Stonchem 620 Series Topcoat

Each Carton contains:

- 2 foil bags of Amine
- 2 cans of Resin

## PHYSICAL CHARACTERISTICS

Compressive Strength .....	14,000 psi (ASTM C-579)
Tensile Strength .....	4,300 psi (ASTM D-638)
Flexural Strength .....	5,800 psi (ASTM C-580)
Flexural Modulus of Elasticity .....	8 x 10 <sup>5</sup> psi (ASTM C-580)
Hardness .....	85 to 90 (ASTM D-2240, Shore D)
Abrasion Resistance.....	0.07 gm max. weight loss (ASTM D-4060, CS-17)
Thermal Coefficient of Linear Expansion .....	1.2 x 10 <sup>-5</sup> in./in.°F (ASTM C-531)
Cure Rate .....	4 to 6 hours (@70°F/21°C) 24 hours chemical service
VOC.....	600/620 Liquids - 20 g/l (ASTM D-2369, Method E)..... 620 Series Topcoat - 68 g/l
Color .....	Black

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.

## COVERAGE

Each unit of Stonchem 628 will cover approximately 180 sq. ft./16.72 sq. m at a thickness of 135 mil/3.3 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 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 3 years. Store all engineering fabric in a clean and dry area.

## SUBSTRATE

Stonchem 628, with 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 PM5. 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 60 to 80°F/15 to 27°C. Cold areas must be heated until the slab temperature is above 55°F/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 (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. Substrate temperature must be greater than 5°F/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.

## APPLYING

### Priming

Vacuum before priming and make sure the substrate is dry. The use of Stonchem Epoxy Primer is necessary in all applications of Stonchem 628. 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.

### Mortar

Pre-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, pre-mix the resin with 620 Vertical Mortar aggregate in a 5-gallon mixing bucket. Mix with a heavy-duty, slow-speed drill (400 to 600 rpm) with a mixing blade until all fibers are completely mixed in. Add the amine and mix 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.

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.

## STATIC CONTROL PROPERTIES

Stonchem 628 has been specifically designed to comply with the ANSI/ESD S20.20 specification for the protection of electrical and electronic parts, assemblies and equipment.

Surface Resistance ..... < 1 megohms (ESD-S7.1)

Body Voltage Generation ..... < 100 volts\* (ESD STM97.2)

*\*Body Voltage Generation is not solely a function of flooring conductivity but is a combination of many factors, including footwear and environmental conditions. Your specific environment and choice of footwear may yield slightly different results.*

Electrostatic Discharge (ESD) flooring has a variety of applications from microchip manufacturing to military ordinance. Therefore, each facility may have unique resistance requirements based on their individual ESD programs. It is important to identify the resistance requirements and test method used for each project prior to installing any ESD flooring.

## ELECTRICAL TESTING

Once the conductive mortar layer has cured, it must be tested for proper conductivity. Point-to-point and point-to-ground readings should be taken, and all values should fall below  $5.0 \times 10^5$  ohms( $\Omega$ ).

The floor must also be tested after the carbon-filled topcoat has cured. Once the conductive sealer is tack-free, point-to-point and point-to-ground readings should be taken. All values must fall below  $1.0 \times 10^6$  ohms( $\Omega$ ).

Note: Stonhard tests all floors in accordance with the ESD S7.1 test method. Various other ESD standards and test methods are available, and they each have their own unique parameters. Please contact the Stonhard's technical service department if you wish to use a different test method.

### **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 1/2 in./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 80°F/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 re-lease 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. Mixing is complete when no dry clumps of material exist. For vertical applications, pre-mix resin with 620 Vertical Mortarcoat aggregate in a 5-gallon mixing bucket. Mix with a heavy-duty, slow-speed drill (400 to 600 rpm) with a mixing blade until all fibers are completely mixed in. Then, in the same mixing bucket, mix the amine and resin for one minute. Next, gradually add Mortarcoat aggregate while mixing for an additional 90 seconds. Mixing is complete when no clumps of dry material exist.

Apply the mortarcoat onto the substrate using a 15-mil notched squeegee. Pull material over the surface to entirely cover the engineering fabric profile. For vertical surfaces use a large trowel to pull an initial coat of material onto the wall, then finish smooth with a flat rubber squeegee.

Note: If the application requires a conductive system, you must test the mortarcoat layer for conductivity using the megger to ensure it is within the proper range. The conductivity of the mortarcoat layer must be below 0.5x10<sup>6</sup> ohms at 100 volts.

### **Topcoat**

Lightly sand the Mortarcoat in areas where protrusions exist. Vacuum the area completely. Mix amine 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 flat 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 5 to 7 mil/127 to 178 microns. Check the thickness with a wet film gauge. **It is pivotal for the coating to be applied within the specified thickness range. If the coating is too thick, the conductivity readings will be affected.**

Note: If the application requires a conductive system, you must test the finished system for conductivity using the megger to ensure it is within the proper range. The conductivity of the final system should be below 1.0x10<sup>6</sup> ohms at 100 volts. A static control report detailing the resistance readings over the entire area must be filled out and submitted to the customer.

### **CURING**

The surface of Stonchem 628 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.

### **PRECAUTIONS**

- Avoid contact with Stonchem 620 amine and resin, as they may cause skin, respiratory and eye irritation.
- Acetone is recommended for cleanup of Stonchem 600 amine and resin material spills. Use this material only in strict accordance with the manufacturer's recommended safety procedures. Dispose of waste materials in accordance with government regulations.
- The selection of proper protective clothing and equipment will significantly reduce the risk of injury. Body covering apparel, safety goggles and impermeable gloves are required
- If eye contact occurs, 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 628 are available online at [www.stonhard.com](http://www.stonhard.com) under Products or upon request.
- Specific information regarding chemical resistance 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.

- 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.
- Use only with adequate ventilation.

**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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USA HQ	(800) 257 7953	Mexico	+(52) 55 9140 4500	Belgium	+(32) 67 49 37 10	South Africa	+(27) 11 254 5500	Australia	+ (61) 3 9587 7433
Canada	(800) 263 3112	Argentina	+(54) 11 5032 3113	Dubai, UAE	+(971) 4 3470460	India	+(91) 22 28500321		