

PRODUCT DESCRIPTION

Stonchem 821 is a spark-proof vinyl ester lining system applied at a nominal thickness of 625 microns. The Stonchem 821 system has excellent resistance to a broad base of chemicals, including hydrofluoric acid, strong organic acids, caustics, solvents and moderate to strong inorganic acids.

USES, APPLICATIONS

- Secondary Containment Areas/Tank Farms
- Concrete Sumps, Vaults and Trenches
- Pump Pads and Pedestals
- Chemical Storage Rooms

PRODUCT ADVANTAGES

- Factory proportioned units for easy application
- Non-sparking and conductive

CHEMICAL RESISTANCE

Stonchem 821 is formulated to resist a variety of chemical solutions. Please refer to the Stonchem 800 Series Chemical Resistance Guide which lists reagent concentration and temperature recommendations for each product.

PACKAGING

Stonchem 821 is packaged in units for easy handling. Each unit consists of:

Topcoat

2 cartons of Stonchem 820 Series Topcoat Conductive Gray

A carton contains:

2 jars of peroxide

2 cans of resin

2 cartons containing:

2 bags of Stonchem X20 Topcoat Part C

COVERAGE

Each unit of Stonchem 821 will cover approximately 16.72 m² at a thickness of 625 microns.

STORAGE CONDITIONS

Store all components between 10 to 24°C in a dry area. Keep out of direct sunlight. Avoid excessive heat and do not freeze. The shelf life is 6 months in the original, unopened container.

SUBSTRATE

Stonchem 821, 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 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. Application and curing times are dependent upon ambient and surface conditions. Consult Stonhard's Technical Service Department if conditions are not within recommended guidelines.

PHYSICAL CHARACTERISTICS

Tensile Strength	17 N/mm ² (ASTM D-638)		
Hardness	85 to 90 (ASTM D-2240, Shore D)		
Abrasion Resistance	0.10 gm max. weight loss (ASTM D-4060, CS-17)		
Thermal Coefficient of Linear Expansion.....	3.6 x 10 ⁻⁵ mm/m°C (ASTM C-531)		
Color	Conductive Gray		
Cure rate	1 hour tack-free (@25°C)	24 hours chemical service VOC.....	820 Topcoat 96 g/l (ASTM D-2369, Method E)

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.

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 821. 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 tack-free prior to application of the Basecoat.

GROUNDING

Set ground plates over the Stonchem 700/800 Primer after the material is cured. Grind the area where the foot of the ground plate will be placed to ensure it sits flush with the primer. You can adhere the grounding plates to the primer using hot glue or five-minute epoxy. These should be placed in close proximity to the grounding device (outlet, structural steel, conduit ordinance ground, etc.). There should be one ground per 93 m² and a minimum of two for any isolated area less than 93 m². After the Stonchem 821 installation and proper cure times, ground wires can be attached into the set screw provided on the ground plate.

Grounding Plates are available in three heights:

- 2 in. - Standard (Product #88057)
- 4.5 in. - For use with 4 in. Cove Base (Product #88058)
- 8 in. - For use with 6 in. Cove Base (Product #88050)

APPLYING

First Coat

Premix the can of resin in a mixing container for 30 seconds, using a heavy-duty, slow-speed drill (400 to 600 rpm) and a Jiffy Mixer and a 4 liter jiffy mixer to suspend settled material. Empty the entire contents of one can of resin and one bag of Stonchem X20 Topcoat part C into a 4 liter mixing container and mix for one minute. Next, add peroxide and mix for an additional minute.

Pour the material onto the floor and spread out with a c.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. Using a medium nap roller, roll the material up onto the wall. The wet film thickness of the coating is 250 to 300 microns. Check the thickness with a wet film gauge.

Second Coat

Apply the same as the Basecoat.

ELECTRICAL TESTING

Testing the floor should be complete and detailed. The testing results must be documented and approved by the customer. Use the Static Control Flooring Installation Report to certify that the floor has been tested and approved by the customer. Any additional diagrams must be included with the report. A copy of the results must be given to the customer and a copy should be kept in your job file.

- Make a map of the floor with grids in order to locate the spots tested. 9.3 m² grids are recommended depending on the size of the area.)
- Stonhard typically tests according to the ESD S7.1 test method. Other test methods can be utilized, including ASTM F-150.
- Using a megohmmeter, place the two, 5 pound electrodes 91 cm apart and test at 100 volts.
- Take a minimum of ten tests per 93 m² and mark the locations on the map.
- The average values should fall between:
- 0.025 - 1.0 megohms for Stonchem 821

CURING

The surface of Stonchem 821 will be tack-free in 4 to 6 hours at 21°C. The coated area may be put back in service in 24 hours at 21°C. Ultimate physical characteristics will be achieved in 7 days. Specific information regarding the chemical resistance of Stonchem 821 is available in the Stonchem 800 Series Chemical Resistance Guide.

STATIC CONTROL PROPERTIES

Stonchem 821 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<1.0 megahms (ESD-S7.1)
Body Voltage Generation<100 volts*

* 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

The floor must be tested 24 hours after the application of Stonchem 821. Point-to-point and point-to-ground readings should be taken. All values must fall below 1.0x10⁶ ohms(Ω).

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. Contact Stonhard's Technical Service Department if you wish to use a different test method.

PRECAUTIONS

- Use these materials only in strict accordance with the manufacturer's recommended safety procedures. Dispose of waste materials in accordance with government regulations.
- Avoid contact with Stonchem 821 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 821 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 821 are available on line at www.stonhard.com under Tech Info or upon request.
- Specific information regarding the chemical resistance of Stonchem 821 is available in the Stonchem 800 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.

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 22
DOP.821.2022.23.03 EN 1504-2
Surface Protection Product Ingress Protection 1.3 (C)
Cap. Absorption & Permeability to Water VaporW<0.1 kg/m ² *h ^{0.5} Water PermeabilityClass III Permeability to CO ₂S _d >50m Adhesion Strength by Pull-Off Test>2.0 MPa Fire ResistanceC _f -s1 Abrasion Resistance<3000mg, H-22

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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