STONCHEM® 541

PRODUCT DESCRIPTION
Stonchem 541 is a 100% solids, novolac flake filled, epoxy coating designed for primary and secondary containment applications. This two-component system consists of high-performance epoxy resin and an amine curing agent. Stonchem 541 can be applied by plural component or single component spray equipment at a total thickness of 20 to 60 mil/500 to 1,500 microns in a one-coat application.

USES,APPLICATIONS
- Chemical storage tanks
- Wastewater clarifiers
- Concrete exposure in wastewater applications
- Pulp and paper liquor tanks
- Plating vats
- Equipment supports
- Oil Storage tanks
- Catwalks
- Crude oil railcar tank linings up to 350˚F/177˚C

PRODUCT ADVANTAGES
- High impact resistance
- Superior adhesion to concrete and steel
- Resistance to a broad range of chemicals
- Can be applied in a one-coat application up to 60 mil/1.5 mm
- Can be sprayed using single or plural component airless equipment

PHYSICAL CHARACTERISTICS

Tensile Strength (ASTM D-638)	700 psi
Mix Ratio (Resin: Amine) (ASTM D-790)	4 to 1
Hardness (ASTM D-2240, Shore D)	75
Pot-life (@75˚F/24˚C)	45 to 60 min.
Cure Time (Approx.) (@ 75˚F/24˚C)	Dry To Touch - 12 hours Firm - 24 hours
Chemical Service	36 hours

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

CHEMICAL RESISTANCE
Stonchem 541 is formulated to resist a broad range of chemicals, such as fuels, salts, alkalis, and many acids, including concentrated sulfuric acid.

COLORS
Stonchem 541 is offered in light gray.

PACKAGING
Stonchem 541 is supplied in pre-measured 5-gallon units for application with single or plural component spray equipment.
One unit consists of:
(1) 1-gallon can of amine
(1) 5-gallon pail of resin

FILM THICKNESS
Stonchem 541 is typically applied at 60 mil/1.5 mm in a one-coat application.

COVERAGE
The coverage of Stonchem 541 is 26.7 sq. ft./gal at 60 mil/1.5 mm.

STORAGE CONDITIONS
- Keep Stonchem 541 products tightly sealed in their original containers until ready for use. Store at 50 to 85˚F/10 to 29˚C, out of direct sunlight. Properly stored, Stonchem 541 products have a shelf life of 6 months. To ensure maximum film build, Stonchem 541 should be used within 3 months of the manufacture date.
- Proper job site storage of Stonchem 541 is essential to its performance. Follow these general procedures for storage at the job site:
- Store components (amine and resin) unopened, in a dry place at 50 to 85˚F/10 to 29˚C, out of direct sunlight and protected from the elements. Keep away from heat and flame.
- For the 24 to 48 hours just prior to use, ensure the storage temperature is at 70 to 85˚F/21 to 29˚C to facilitate ease of mixing.

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 materials 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.

MASKING & PROTECTION
Mask or remove adjacent surfaces and equipment that are not to be lined. Once applied, Stonchem 541 is difficult to remove. Protect nearby pumps, motors, and other equipment from spent abrasive venting from the tank during blasting.

APPLICATION GUIDELINES
Before mixing and applying any material, make sure environmental conditions are satisfactory for application. For optimal working conditions, the 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 50˚F/10˚C. This will allow the material to achieve a proper cure. Also, a cold substrate will make the mate- rial 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 should be greater than 5˚F/3˚C above dew point.

EQUIPMENT
Single Component Airless Spray
All pumps and hoses must be in proper working order, clean and free of foreign matter. Use an air motor with a compression ratio of 45:1 or larger.

All filters should be removed from the pump. Use a 3/8 in./0.95 cm spray hose from pump to gun, not to exceed 100 ln. ft./30.5 ln. m. It is best to bring the material directly to the gun body and not go through a tube in the handle.

The size of the airless spray tip will depend upon the area being sprayed, the viscosity, and the temperature of the materials. Use sizes from 0.19 to 0.35 in. If using an inline filter, use a 60-mesh screen.

The mixed material temperature should be 75 to 85˚F/ 24 to 38˚C for best spraying.

Note: Ambient temperatures above 85˚F/29˚C will shorten pot life.

Mix the resin and amine together according to the "Mixing" Instructions in this document.
When using a 45:1 spray pump, set the mixed material under the pump (it is best to remove the siphon tube and pump directly from the bottom of the pump) and start spraying. The air pressure required will vary between 55 to 65 psi. If using a 56:1 spray pump, the siphon tube may remain attached.

When spraying is complete, solvent purge the lower unit and spray gun, then remove the bottom ball valve and clean thoroughly.

Plural Component Spray
Use a fixed ratio (4:1 by volume) plural component spray rig equipped with heated hoppers and heated hoses. The material will flow to a mixer manifold and through a static mixer to a 50 ft. whip hose followed by a silver gun (Binks 1M or equal) utilizing self-cleaning reverse "A" tips from 0.19 to 0.35 inches. See equipment specifications for more details.

Note: The resin should be at a minimum of 110˚F/43˚C and the amine side at 90 to 100˚F/32 to 38˚C. This will ensure proper spraying of Stonchem 541.

Take care to prevent the mixed material from setting up in the hoses. For best results, keep the hoses as short as possible, purge them immediately if work is interrupted, and keep them out of direct sunlight and insulated from hot surfaces.

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 541. This ensures maximum product performance. (See the Stonchem Epoxy Primer product data sheet for details.)

Note: Stonchem Epoxy Primer must be tack-free prior to application of Stonchem 541. Allow at least 5 hours for cure.

MixingSingle Component Airless Spray Only
We recommend using Jiffy type mixers for all mixing and stirring. When operating the mixer, avoid plunging it up and down in the bucket. This can fold air into the resin, which may cause bubbles to form in the coating after it has been applied.
To prepare the material for spraying, mix the resin until the color is well blended. Any sediment in the container must be thoroughly scraped up and redispersed. Then mix the resin and amine together (in the resin bucket) for two minutes using a Jiffy Mixer.

Spraying
Immediately before applying a spray coat, stripe edges with a brush-coat to assure adequate protection of these areas.

All spray equipment should be clean and in proper working order. Contact Stonhard's Technical Service Department for start- up and clean-up procedures. Adjust pressure to 50 to 70 psi and open the valves at the manifold and purge materials at the spray gun.

Attach spray tip and begin to spray. Depending upon tip size, each pass will be 8 to 14 mil/200 to 350 microns per pass. Apply material to the specified thickness.

Apply criss-cross multi-passes, moving the gun at a fairly rapid rate, maintaining a wet appearing film. Use a wet film thickness gauge to monitor film build.

CURING
Stonchem 541 will be dry to the touch in 12 hours at 75˚F/24˚C, will be firm to the touch in 24 hours at 75˚F/24˚C, and will be suitable for chemical service in 36 hours at 75˚F/24˚C.

LINING REPAIR
Before any touch-up or recoat material can be applied, the first coat must be properly prepared for intercoat adhesion.

The first coat must be cured firm to the touch (at least 24 hours). Coating on floors must be able to support foot traffic.

Scrub the first coat with soap and water and thoroughly rinse and dry it.

If the first coat has cured for more than 24 hours, lightly sand or mechanically abrade the surface after scrubbing it down with soap and water.

Any surface to be touched up or recoated should be protected. When the recoat material is applied, the substrate must be dry and free of all wax, grease, oils, fats, soil, loose or foreign materials and laitance.

RECOMMENDATIONS
- Apply only on a clean, sound, properly prepared substrate.
- Minimum ambient, material and surface temperature should be 50˚F/10˚C at the time of application.
- Maximum ambient, material and surface temperature should be 90˚F/32˚C, 85˚F/29˚C and 90˚F/32˚C respectively at the time of application.
- Relative humidity should be between 0 to 85%.
- Substrate temperature should be 5˚F/3˚C above the 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.

PRECAUTIONS
- Toluene or Xylene solvents are recommended for clean-up of Stonchem 541 material spills. 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 541 amine and resin, as they may cause skin, respiratory and eye irritation.
- The use of NIOSH/ approved respirators using an organic vapor/acid gas cartridge is required when spray applying this product.
- 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 required
- In the event of accidental eye contact, rinse eyes immediately with copious amounts of clean water for 15 minutes and then seek medical attention.
- If material is ingested, immediately contact a physician and reference the SDS.
- Use only with adequate ventilation. Inhalation of vapors may cause severe headaches, nausea and possibly unconsciousness.

NOTES
- Data Sheets for Stonchem 541 are available online at www.stonhard.com under Tech Info or upon request.
- Specific information regarding the chemical resistance of Stonchem 541 is available through Stonhard's Technical Service Department.
- A staff of technical service engineers is available to assist with product application, or to answer questions related to Stonhard's products.
- Requests for technical literature or service can be made through local sales representatives and offices 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 build up 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.

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