STONHARD

PRODUCT DATA

STONCHEM®444

PRODUCT DESCRIPTION

Stonchem 444 is a 100% solids polyurea-polyurethane hybrid sprayable lining system formulated for vertical and overhead applications at a thickness up to 70 mils in one application. It can be applied over a broad range of substrates and environmental conditions at a nominal thickness of 0.75 to 3mm. This immersion grade lining provides a durable, flexible, waterproof membrane with outstanding impact and abrasion resistance. It also delivers excellent chemical resistance against petroleum products, caustics and moderate concentrations of acids and is UL approved for potable water storage tanks of 1,000 gallons or greater.

USES, APPLICATIONS

- Potable water storage
- Tank linings
- Wastewater treatment
- Secondary containment areas
- Bulk tank farms
- Waterproofing
- Geoliners
- Scrubber decks
- Chutes
- Cooling towers
- Parking structures
- Helicopter decks
- Refrigerators/freezers
- Truck loading ramps
- Flexible deck flooring
- Mezzanines
- Interior walls and ceilings

PRODUCT ADVANTAGES

- 100% solids (solvent-free)
- Optional non-skid surface
- Superior abrasion resistance
- Seamless and monolithic
- Suitable for a broad range of substrates
- Water tight
- Can be applied in cold environments
- Excellent crack bridging capabilities

CHEMICAL RESISTANCE

Stonchem 444 is formulated to resist a variety of chemical solutions. Refer to the Stonchem 400 Series Chemical Resistance Guide, which lists reagent concentration and temperature recommendations.

PACKAGING

Stonchem 444 is supplied in pre-measured 15 and 150 gallon units for application with 2:1 ratio, plural component spray equipment. Each unit consists of:

Stonchem 444

15 gallon unit:
(1) 5 gallon pail of Isocyanate
(2) 5 gallon pail of Polyol/Amine

150 gallon unit:
(1) 50 gallon drum of Isocyanate
(2) 50 gallon drum of Polyol/Amine

PHYSICAL CHARACTERISTICS

Tensile Strength (ASTM D-638)	23 N/mm^2
Hardness (ASTM D-2240, Shore D)	55
Abrasion Resistance (ASTM D-4060,CS-17)	0.035 gm max. weight loss
Bongation (ASTM D-638)	93%
Low Temperature Flexibility Test (ASTN D-522)	-23°C
VOC (ASTM D-2369, Method E)	<1 g/l.
Cure rate	8 hours for foot traffic 24 hours for chemical or immersion
Color	Light Gray

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.

COVERAGE

One gallon of Stonchem 444 will cover approximately 149 m^2 per mil of application thickness. Coverage per gallon for typical thicknesses are as follows:

Thickness	Application Coverage
30 mil	5.0 m^2
50 mil	3.0 m^2
120 mil	1.2 m^2

STORAGE CONDITIONS

Store all components of Stonchem 444 between 13 to 30°C in a dry area, out of direct sunlight. BE SURE TO HANDLE AND STORE PROPERLY. The shelf life is two years in the original, unopened container.

SUBSTRATE

Stonchem 444, with the appropriate primer, is suitable for application over concrete, wood, brick, quarry tile, metal or Stonhard mortar systems. 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.

PRIMING

Stonchem Epoxy Primer must be applied to the prepared surface and cured to a tack-free state before applications of the Stonchem 444 begins. For outgassing substrates, a second coat of primer may be applied. The primer can be thickened by adding Stonchem Thixotrope. The use of a primer seals the substrate and enhances bonding. The primer should be applied using a rubber squeegee.

Note: Primer should be applied later in the day as the substrate begins to cool

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 32°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.

APPLYING STONCHEM 444

Spray Application

- Stonchem 444 is spray applied. Doing so requires a plural component spray rig with a 2:1 ratio proportion. The preferred spray rig is the following: Spray pump and heating unit – WIWA Duo Mix 230, as manufactured by WIWA Wilhelm Wagner LP.
- Spray gun – WIWA 500F Airless Spray gun with one port of entry for the mixed two-component lining material. The spray gun shall be fed by a 1/4 in. swiveling WHIP hose that contains mixed material.

  Note: WHIP hose contains mixed material requiring that spray be continuous or a purge bucket be available to purge the lines after 15to 20 seconds of in-activity. Purging can be done with 2 or 3 squeezes on the gun.

- Drum heaters are required to heat the material to approximately 37°C.
- The following minimum services shall be provided to run the spray equipment and heaters:
  - Electric: Single phase, 110 or 220 volt
  - Compressed Air: 185 CFM @ 90 psi, treated to assure dry air supply. Moist air is unacceptable and can adversely affect the material.
- Once the polyol has been pre-mixed, both components are heated, and the proper pressures are achieved, spray apply the proper millage of Stonchem 444 to the primed substrate.

CURING

The surface of Stonchem 444 will be tack-free in 8 hours at 21°C. The coated area may be put back into service in 24 hours at 21°C, conditions permitting.

PRECAUTIONS

- Acetone is recommended for clean up of Stonchem 444 isocyanate or polyol/amine resin 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 444 polyol resin and isocyanate, as they may cause skin, respiratory and eye irritation.
- **The use of NIOSH/MSHA approved respirators using an organic vapor/acid gas cartridge is mandatory during spray applications.**
- 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 the event of accidental eye contact, immediately flush eyes with copious amounts of water for 15 minutes and seek medical attention.
- 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 444 are available upon request.
- Specific information regarding the chemical resistance of Stonchem 444 is available in the Stonchem 400 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 service or literature can be made through local sales representatives and offices or corporate offices located worldwide.

Rev.03/15

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