

### PRODUCT DESCRIPTION

Stonchem 441 is a 100% solids polyurea-polyurethane hybrid lining system applied at a nominal thickness of 1 to 3mm, depending on conditions of use. This immersion grade lining provides a durable, flexible, waterproof membrane that can withstand significant impact and abrasion. This system can be applied over a broad range of substrates and in varied environmental conditions. Stonchem 441 has very good resistance to wastewater, caustics and moderate concentrations of acids.

### USES

- Wastewater treatment/storage
- Bulk tank farms
- Tank liners
- Chutes
- Parking structures
- Refrigerators / freezers
- Flexible deck flooring
- Interior walls and ceilings
- Secondary containment areas
- Waterproofing
- Scrubber decks
- Mechanical rooms
- Helicopter decks
- Truck loading ramps
- Mezzanines
- Laboratories

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

### PACKAGING AND COVERAGE

**Primer:** Stondri MVT  
5lt Kit; Part A & B – approximately 10 to 12m<sup>2</sup>/5 litre

**Lining:** Stonchem 441  
15lt Kit; 1 x 10lt Base : 1 x 5lt Activator  
Bulk kits available on request

Thickness	Application Coverage
1.00mm	15m <sup>2</sup> /15lt kit
1.500mm	10m <sup>2</sup> /15lt kit
3.0mm	5m <sup>2</sup> /15lt kit

**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.**

### REFERENCE SAMPLE

A trial reference sample should be installed by the applicator prior to start of contract to ensure correct coverage and workmanship.

### STORAGE CONDITIONS

Store all components of Stonchem 441 between 13 to 30°C in a dry area, out of direct sunlight. **BE SURE TO HANDLE AND STORE PROPERLY.**

### SHELF LIFE

The shelf life is 2 years in the original, unopened container.

### TYPICAL PROPERTIES AT 25°C

<b>Tensile Strength</b> ASTM D-638	18 MPa
<b>Hardness</b> ASTM D-2240, Shore D	50
<b>Abrasion Resistance</b> ASTM D-4060, CS-17	0.035mg max. weight loss
<b>Elongation</b> ASTM D-636	125%
<b>Low Temperature Flexibility</b> ASTM D-522	-23°C
<b>Flammability</b> ASTM D-548	Class I
<b>VOC</b> ASTM D-2369, Method E	<1 g/l
<b>Cure Rate</b>	8 hours foot traffic 24 hours chemical immersion
<b>Colour</b>	Grey or 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, values obtained on the field applied materials may vary.

## PLACEMENT GUIDELINES

### SUBSTRATE

Stonchem 441, with Stondri MVT, is suitable for applications over concrete, wood, brick, quarry tile, metal or Stonhard mortar systems. For questions regarding other possible substrate 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 utilising mechanical methods. Questions regarding substrate preparation should be directed to your local Stonhard representative or Technical Service.

### PRIMING

Stondri MVT must be applied to the prepared surface and cured to a tack-free state before application of the Stonchem 441 begins. For outgassing substrates, a second coat of primer may be applied. The use of a primer seals the substrate and enhances bonding. The primer should be applied using a rubber squeegee.

**NOTE: If outgassing occurs, then it is advisable to apply primers later in the day as the substrate begins to cool.**

### APPLICATION GUIDELINES

For optimal working conditions, the 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 surface (27 to 32°C) or a substrate directly in the sun will shorten the material's working time and 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 StonCor Africa's Technical Service department if conditions are not within recommended guidelines.

### APPLYING STONCHEM 441

#### Squeegee Application:

If applying the material by hand, the process is as follows:

If the components can be heated using heating bands, the material should be heated to approximately 30 to 35°C. Regardless of the application method, pre-mix the grey polyol as it tends to separate in the container. Due to the nature of the materials, they must be positioned in separate containers and then poured into the mixing bucket.

- Pour the base and activator into the mixing bucket. If the material has not been heated, the material should be mixed for 90 seconds using a drill and the appropriately sized mixing blade. Otherwise, mix the material for 60 seconds.
- Once the material has been thoroughly mixed, pour it onto the substrate and spread the material to appropriate thickness using a notched trowel and roller.

#### Spray Application:

As indicated above, the Stonchem 441 can be 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 hating unit – WIWA Duo Mix 230, as manufactured by WIWA Wilhelm Wagner LP.
- Spray gun – WIWA 500F Airless Spray gun with one portion of entry for the mixed two-component lining material. The spray gun shall be fed by a 6mm swivelling 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 15 to 20 seconds of inactivity. Purging can be done with 2 or 3 squeezes on the gun.**
- Drum heaters are required to heat the material to approximately 35°C.
- The following minimum services shall be provided to run the spray equipment and heaters:
  - Electric: Single phase, 220 volt
  - Compressed Air: 165 CFM at 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 required thickness of Stonchem 441 to the primed substrate.

### CURING

The surface of Stonchem 441 will be tack-free in 8 hours at 21°C. The coated area must be put back into service in 24 hours at 21°C, conditions permitting.

### PRECAUTIONS

1. Acetone is recommended for clean-up of Stonchem 441 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.
2. Avoid contact with Stonchem 441 base resin and activator, as they may cause skin, respiratory and eye irritation.
3. The use of NIOSH / MSH approved respirators using an organic vapor / acid gas cartridge is mandatory during spray applications.
4. 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.
5. In the event of accidental eye contact, immediately flush eyes with copious amounts of water for 15 minutes and seek medical attention.
6. If material is ingested, immediately contact a physician. **DO NOT INDUCE VOMITING.**
7. Use only with adequate ventilation. Inhalation of vapours may cause severe headaches, nausea and possibly unconsciousness.

### NOTES

- Material Safety Data Sheets for Stonchem 441 are available online at [www.stoncor.co.za](http://www.stoncor.co.za), under "products" or upon request.
- Specific information regarding the chemical resistance of Stonchem 441 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.