PRODUCT DESCRIPTION

Stonchem 441LV is a 100% solids polyurea-polyurethane hybrid lining system applied at a nominal thickness of 0.75 to 3.0 mm, 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 441LV has very good resistance to petroleum products, caustics and moderate concentrations of acids.

USES, APPLICATIONS

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

PHYSICAL CHARACTERISTICS

Tensile Strength .....20.6 N/mm^2
(ASTM D-638)
Elongation 140%
(ASTM D-638)
Hardness 60
(ASTM D-2240, Shor D)
Abrasion Resistance .....0.035 g max. weight loss
(ASTM D-4060, CS-17)
Low Temperature
Flexibility Test .....-23˚C Pass
(ASTM D-522)
VOC .....2 g/l
(ASTM D-2369, Method E)
Cure Rate.....8 hours for foot traffic
.....24 hours for chemical or immersion
Colour .....Light Gray

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

PRODUCT ADVANTAGES

- 100% solids (solvent-free)
- 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 441LV 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 441LV is packaged in units for easy handling. Each unit consists of:

Stonchem 441LV
24 litres unit:
1 carton containing:
6 foil bags of Isocyanate
1 carton containing:
6 poly bags of Polyol/Amine

COVERAGE

Due to different thickness application options, Stonchem 441LV coverage must be calculated based on desired finished thickness. Each mix of Stonchem 441LV is approximately 3.78 liters. One mix of Stonchem 441LV will cover 3.81m^2 at 1mm nominal thickness. Coverage per unit of 441LV (22.7 liters) for typical thicknesses are as follows:

Thickness	Application Coverage (per mix)	Application Coverage (Per Unit)
0.75 mm	5.0 m^2	30 m^2
1.25 mm	3.0 m^2	18 m^2
3.0 mm	1.2 m^2	7.2 m^2

STORAGE CONDITIONS

Store all components of Stonchem 441LV between 13 to 30˚C in a dry area, out of direct sunlight. BE SURE TO HANDLE AND STORE PROPERLY. The shelf life is 2 years in the original, unopened container.

SUBSTRATE

Stonchem 441LV, 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 441LV 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 from 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 pin holing 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 441LV
Combine one bag of isocyanate and one bag of polyol in a 20 litres pail and mix for 90 seconds with slow-speed drill and mixing blade. Do not mix more than three mixes at one time.
Pour the material onto the floor in the form of a bead along the farthest wall from the mixing area. Using a 6 mm notched squeegee held at a 45˚ angle to the bead, apply the 441LV by pulling the squeegee along the bead and working the material back toward the mix area. Each pass should overlap the last by nine inches to ensure that all substrate voids are filled.
Wearing spiked shoes, roll the 441LV using a nap roller to remove squeegee lines.

CURING
The surface of Stonchem 441LV 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 441LV 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 441LV 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
- Material Safety Data Sheets for Stonchem 441LV are available online at www.stonhard.co.uk under Products or upon request.
- Specific information regarding the chemical resistance of Stonchem 441LV 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.

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.

CE

Stoncor Europe
Rue du Travail 9
1400 Nivelles, Belgium

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EN 1504-2

Surface Protection Product

Ingress Protection 1.3(C)

Cap. Absorption & Permeability to Water Vapor	Class II
Water Permeability	W<0.1 kg/m^2*h$^{1/2}$
Permeability to CO_2	S_D>50
Adhesion Strength by Pull-Off Test	>2.0 N/mm^2

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