STONHARD

STONCHEM®457

PRODUCT DATA

PRODUCT DESCRIPTION

Stonchem 457 is a 100% solids polyurea lining system applied at a nominal thickness of 60 to 125 mil, depending on conditions of use. The system consists of Stonchem 403 and an engineering fabric. This high build elastomer coating provides a durable chemical barrier, while the engineering fabric provides support in applications where the substrate integrity is questionable and the system may remain unbonded. Extremely rapid cure reduces down time. In addition, the system can be applied over a broad range of substrates and in varied environmental conditions. Stonchem 457 has excellent resistance to petroleum products, caustics and moderate concentrations of acids.

USES, APPLICATIONS

- Petroleum Product Storage
- Bulk Tank Farms
- Secondary Containment Areas
- Concrete Pads and Pedestals
- Ponds
- Earthen or gravel containment berms

PRODUCT ADVANTAGES

- 100% solids
- Seamless and monolithic
- Able to be applied in a variety of environmental conditions
- Rapid cure minimizes down time
- Suitable for a broad range of substrates, including clay and gravel
- Engineering fabric provides support for unbonded applications
- Excellent chemical resistance to petroleum products, caustics and moderate concentrations of acids

CHEMICAL RESISTANCE

Stonchem 457 is formulated to resist a variety of chemical solutions. (Please refer to the Stonchem 400 Series Chemical Resistance Guide which lists reagent concentration and temperature recommendations.)

PACKAGING

Stonchem 457 is supplied in pre-measured units for application with 1:1 ratio plural component spray equipment. It is available in two sizes:

Each unit consists of:
(1) 50 gallon drum of isocyanate
(1) 50 gallon drum of amine resin
1 roll of Geotextile Fabric
Or
(1) 5 gallon pail of isocyanate
(1) 5 gallon pail of amine resin
0.1 roll of Geotextile Fabric

COVERAGE

One gallon of Stonchem 457 liquids will cover approximately 149 m^2 per mil of application thickness. Coverage per gallon for typical thicknesses are as follows:

Thickness	Application Coverage
1524 microns	2.5 m^2
2540 microns	1.5 m^2
3175 microns	1.2 m^2

PHYSICAL CHARACTERISTICS

Tensile Strength (ASTM D-638)	15.86 N/mm^2
Hardness (ASTM D-2240, Shore D)	46
Abrasion Resistance (ASTM D-4060, CS-17)	0.02 gm max. weight loss
Elongation. (ASTM D-638)	400%
Hydrostatic Pressure Resistance Test (ASTM D-5385/231 ft. of water)	Pass
Low Temperature Flexibility Test (ASTM D-1970/180° Bend)	-11°C Pass
Coefficient of Friction (ASTM D-2047)	0.9
Cure Rate allow	10 minutes for water exposure 2 hours for foot traffic 12 hours for normal operations
Color	Dark 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. 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.

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.

STORAGE CONDITIONS

Store all components of Stonchem 457 between 10 to 32°C in a dry area, out of direct sunlight. PLEASE HANDLE AND STORE PROPERLY. The shelf life is one year in the original, unopened container. The engineering fabric must be free of contaminants and moisture to ensure maximum mechanical and chemical performance.

SURFACE PREPARATION

Bonded Applications

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.

Unbonded Applications

Grade and compact surfaces to desired elevation, pitch and configuration. Use compacted fines to provide a smooth, uniform top surface. For recommendations or additional information regarding substrate preparation, please contact Stonhard's Technical Service Department.

PRIMING

All concrete surfaces must be primed with HT Primer. The geotextile fabric should be laid into wet primer and saturated with additional primer. This layer should be allowed to cure prior to the spray application. For other surfaces, consult Stonhard's Technical Service Department.

APPLICATION

Stonchem 457 is applied directly over the substrate surface.

Engineering Fabric

Place the engineering fabric directly onto the substrate surface. Overlap any adjacent fabric at a minimum of 7 cm.

Topcoat

Spray apply the liquids at a 1:1 ratio into the fabric at the specified mil thickness. Use plural component spray equipment specially designed for the application of polyurea.

CURING

The surface of Stonchem 457 will be tack-free in 1 to 2 minutes at 21˚C. The coated area may be put back in service in as little as one hour at 21˚C, conditions permitting.

RECOMMENDATIONS

- Apply only on clean, sound, dry and properly prepared substrates.
- Minimum ambient and surface temperatures are 13˚C at the time of application.
- Maximum surface temperature should not exceed 32˚C during application. Substrate temperatures above 38°C will drastically affect the working time of the product.
- Substrate temperature should be greater than 3˚C above dew point.
- Material should not be applied if humidity is above 85%.
- 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 457 isocyanate or amine material spills. Use these mapterials only in strict accordance with the manufacturer's recommended safety procedures. Dispose of waste materials in accordance with government regulations.
- Avoid contact with Stonchem 457 amine and isocyanate, as they may cause skin, respiratory and eye irritation.
- **The use of NIOSH/MSHA approved respirators using an organic vapor gas cartridge is recommended. Respirators may be required for confined space applications.**
- The selection of proper protective clothing and equipment will significantly reduce the risk of injury. Body covering apparel, safety goggles and impermeable nitrile gloves is highly recommended.
- 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.
- Mechanical ventilation is recommended. Inhalation of vapors may cause severe headaches, nausea and possibly unconsciousness.

NOTES

- Material Safety Data Sheets for Stonchem 457 are available upon request.
- Specific information regarding the chemical resistance of Stonchem 457 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 literature or service can be made through local sales representatives and offices, or corporate offices located worldwide.

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