

PRODUCT DESCRIPTION

Stonchem 656 is a highly cross-linked novolac epoxy system applied at a nominal thickness of 1.5 mm. The resin, engineering fabric, mortarcoat, mineral composite topcoat sequencing provides a smooth, heavy-duty chemical barrier which is resistant to small static cracks and moderate thermal shock. The Stonchem 656 has excellent resistance to concentrated sulfuric acid, chlorinated solvents and caustics.

USES, APPLICATIONS

- Secondary containment areas/tank farms
- Concrete sumps, vaults and trenches
- Pump pads and pedestals
- Storage tanks
- Neutralization pits

PRODUCT ADVANTAGES

- Excellent chemical resistance to most mineral acids, solvents and caustics
- Engineering fabric resists cracking
- Mortarcoat for added abrasion resistance
- Mineral composite topcoat for increased impermeability
- Factory proportioned units for easy application

CHEMICAL RESISTANCE

Stonchem 656 is formulated to resist a variety of chemical solutions. Please refer to the Stonchem 600 Series Chemical Resistance Guide which lists reagent concentration and temperature recommendations for each product.

PACKAGING

Stonchem 656 is packaged in units for easy handling. Each unit of Stonchem 656 consists of:

Saturant

1.25 cartons of 600/620 Liquids
 A carton contains:
 4 foil bags of amine
 4 poly bags of resin

Engineering Fabric

1 roll of Engineering Fabric 18.58 m² roll

Mortarcoat

0.5 cartons of 600/620 Liquids
 A carton contains:
 4 foil bags of amine
 4 poly bags of resin
 2 bags of Mortarcoat aggregate

Topcoat

1 carton of Stonchem 600 Series Topcoat
 A carton contains:
 4 foil bags of amine
 4 poly bags of resin

COVERAGE

Each unit of Stonchem 656 will cover approximately 16.72 m² at an application thickness of 1.5 mm.

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 between 10 to 24°C in a dry area. Keep out of direct sunlight. When stored in the unopened containers at the proper temperatures, the shelf life is 3 years. Store all engineering fabric in a clean and dry area.

SUBSTRATE

Stonchem 656, with appropriate primer, is suitable for application over concrete and the following uncoated, newly-applied Stonhard mortars and grouts: GS, HT, UR, UT, TG6, TG8, CR5 and PM5. For questions regarding other possible substrates or an appropriate primer, contact your local Stonhard representative or Technical Service

PHYSICAL CHARACTERISTICS

Tensile Strength	43 N/mm ²
(ASTM D-307)	
Flexural Strength	96 N/mm ²
(ASTM C-580)	
Flexural Modulus of Elasticity.....	4.8 x 10 ³ N/mm ²
(ASTM C-790)	
Hardness.....	85 to 90
(ASTM D-2240, Shore D)	
Abrasion Resistance.....	0.07 gm max. weight loss
(ASTM D-4060, CS-17)	
Thermal Coefficient	
of Linear Expansion.....	2.1 x 10 ⁻⁵ m/mm°C
(ASTM C-531)	
Color	Gray
Cure Rate.....	4 to 6 hours tack-free
(@21°C)	
VOC	Stonchem 600 Topcoat 68 g/l
(ASTM D-2369, Method E). Stonchem 600/620 Liquids	20 g/l

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.

SSUBSTRATE 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.

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 15 to 27°C. Measure the surface temperature with a surface thermometer. Cold areas must be heated until the slab temperature is above 13°C. This will allow the material to achieve a proper cure. Also, 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 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.

APPLYING

Priming

Vacuum the substrate before priming and make sure the surface is dry. The use of Stonchem Epoxy Primer is necessary in all applications of Stonchem 656. This ensures maximum product performance. (See the HT Primer product sheet for details.)

Note: Stonchem epoxy Primer must be tack-free prior to application of Saturant Base Coat.

Saturant Base Coat

Mix the amine and resin in a 20 litre bucket using a heavy-duty, slow-speed drill (400 to 600 rpm) with a Jiffy Mixer for one minute. Pour the saturant onto the substrate and spread out with a 15 mil notched squeegee. The saturant should be spread out in a sequence to allow application of the engineering fabric. Do not leave any puddling during this squeegee step. Puddling will lead to over saturation of the fiberglass.

Engineering Fabric

Place the engineering fabric on the saturant immediately after it is applied. This is important to achieve maximum wetting. Press the fabric into the saturant with a dry, medium nap roller. Overlap adjacent fabric 13 mm. Immediately apply the saturant.

Saturant

Mix the amine and resin in a 20 litre bucket using a heavy-duty, slow-speed drill (400 to 600 rpm) with a Jiffy Mixer for one minute. Apply the saturant to the engineering fabric with a saturated medium nap roller. To wet the roller, dip it into the mixing bucket. Always work from the bucket. Do not pour the saturant directly onto the fabric. This will decrease the saturant's coverage.

Note: If working in warmer conditions, the use of plastic mixing buckets will increase the pot life of the material.

The engineering fabric is completely saturated when white strands are no longer present. When the engineering fabric is completely saturated, roll with a ribbed roller to release air pockets in the reinforcement and to embed the engineering fabric into the mortar. To saturate the overlaps, roll several times over the length of the overlap with a saturated roller, then roll with a ribbed roller several times until the overlap is no longer visible. Allow the mortar, engineering fabric and saturant to cure (approximately 4 to 6 hours) before proceeding.

Mortarcoat

Lightly sand the fabric and saturant layer with a sanding disc attachment in areas with protruding fibers. Pre-mix the amine and resin in a 20 litre mixing bucket with a heavy-duty, slow-speed drill (400 to 600 rpm) with a Jiffy Mixer for one minute. Next, gradually add the Mortarcoat aggregate while mixing for an additional two minutes. For vertical applications, use Vertical Mortarcoat aggregate. Mixing is complete when no dry clumps of material exist. Pour the material onto the floor and spread out with a 15 mil notched squeegee. Backroll the area with a medium nap roller to remove squeegee lines. The material may appear rough at first but will level out to a smooth finish. For vertical surfaces, use a large steel trowel or knife to pull an initial coat of vertical material onto the wall, then finish smooth with a flat rubber squeegee.

Topcoat

Lightly sand the mortarcoat in areas where protrusions exist. Vacuum area completely. Mix the amine and resin in a 20 litre mixing container using a heavy-duty, slow-speed drill (400 to 600 rpm) with a Jiffy Mixer for 2 minutes. Pour the material onto the floor and spread out with a 15 mil notched squeegee. Backroll the area with a medium nap roller to remove squeegee lines, using long roll strokes to decrease the visibility of roller lines. For vertical surfaces, pour a bead of material along the base of the wall and, using a medium nap roller, roll the material onto the vertical surface. The wet film thickness of the coating is 250 to 300 microns. Check the thickness with a wet film gauge

CURING

The surface of Stonchem 656 will be tack-free in 4 to 6 hours at 21°C. The coated area may be put back in service in 24 hours at 21°C. Ultimate physical characteristics will be achieved in 7 days.

PRECAUTIONS

- Avoid contact with Stonchem 600 amine and resin as they may cause skin, respiratory and eye irritation.
- Acetone is recommended for clean up of Stonchem 600 amine and resin material spills. Use these materials only in strict accordance with manufacturers' recommended safety procedures. Dispose of waste materials in accordance with government regulations.
- The use of NIOSH/MSHA approved respirators using an organic vapor acid gas cartridge is recommended.
- 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 highly recommended.

- In case of contact, flush the area with copious amounts of water for 15 minutes and seek medical attention. Wash skin with soap and water.
- If material is ingested, immediately contact a physician. **DO NOT INDUCE VOMITING.**
- Use only with adequate ventilation.

NOTES

- Safety Data Sheets for Stonchem 656 are available online at www.stonhard.com under Products or upon request.
- Specific information regarding chemical resistance is available in the Stonchem 600 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.
- 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 buildup 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.

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. I, Tables ZA 1a 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 achieved 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.

	
StonCor Europe Rue du Travail 9 1400 Nivelles, Belgium 21	
DOP.656.2021.25.6-2 EN 1504-2	
Surface Protection Product Ingress Protection I.3(C) Physical Resistance 5.1(C)	
Cap. Absorption & Permeability	
to Water Vapor:	$W < 0.1 \text{ kg/m}^2 \cdot \text{h}^{0.5}$
Water Permeability:	Class II
Permeability to CO ₂	$S_d > 50 \text{ m}$
Adhesion Strength by	
Pull-Off Test	$> 2.0 \text{ MPa}$
Fire Resistance	B _{fl} -s I
Abrasion Resistance	$< 3000 \text{ mg}$
Impact Resistance	Class III

IMPORTANT:

Stonhard believes the information contained here to be true and accurate as of the date of publication. Stonhard makes no warranty, expressed or implied, based on this literature and assumes no responsibility for consequential or incidental damages in the use of the systems described, including any warranty of merchantability or fitness. Information contained here is for evaluation only. We further reserve the right to modify and change products or literature at any time and without prior notice.

Rev. 6/21
 © 2021 Stonhard www.stonhard.com

STONHARD®

European Offices:

Belgium	+32 674 93 710	Spain	+34 933 623 785	Germany	+49 240 541 740
France	+33 160 064 419	Portugal	+351 227 535 642	The Netherlands	+31 165 585 200
Poland	+48 422 112 768	United Kindom	+44 1925 649 458	Italy	+39 022 53 751
		East Europe	+48 422 112 768		