TECHNICAL DATA SHEET

VORTEX

Structure Guard®

TECHNICAL DATA

TYPICAL PERFORMANCE CHARACTERISTICS*

CHARACTERISTICS	TEST METHOD	PERFORMANCE
Tensile Strength	ASTM D638	>9,000 psi | 62 MPa
Tensile Elongation	ASTM D638	6.6%
Tensile Modulus	ASTM D638	500 ksi | 3,450 MPa
Flexural Strength	ASTM D790	15,700 psi | 108 MPa
Flexural Modulus	ASTM D790	510 ksi | 3,516 MPa
Compressive Strength	ASTM D695	>18,000 psi | 124 MPa
Compressive Modulus	ASTM D695	535 ksi | 3,690 MPa
Adhesion to Concrete	ASTM D4541	Substrate Failure, >200 psi
Resistance of Plastics to Chemical Reagents (listed in ASTM F1216)	ASTM D543	Completed**
Durometer Hardness (Shore D)	ASTM D2240	87.5
Volatile Content of Coatings	ASTM D2369	No VOCs
Severe Wastewater Analysis Test (SWAT)	ASTM G210	Completed
Taber Abrasion, CS-17 Wheel	ASTM D 4060	1 kg load/1,000 cycles - <80 mg
Adhesion to Blasted Steel	ASTM D4541	>1,000 psi | 6.9 MPa
City of Los Angeles Department of Public Works	Greenbook	Listed - Section SSPWC 211-2 /Epoxy liners SSPWC section 500-2.8.5

* *The values stated in inch-pound units are to be regarded as the standard. The values given in international system are for information only.*

** *Completed as part of the City of Los Angeles Greenbook certification*

TECHNICAL INFORMATION

- **Color: Light Bluegreen**
- **Solids: 100% (No Solvents)**
- **No VOCs**
- **Thickenss: 250 mils | 6.4mm WFT in a Single Pass**
- **Finish: Very Smooth (Manning Coefficient: .009)**
- **Flash Point > 250°F | 121°C**
- **Ratio: 2A to 1B by volume**

QUADEX® A VORTEX COMPANY REPAIR MATERIALS

Corrosion Resistant Epoxy Protective Coating

DESCRIPTION

Quadex® Structure Guard® is a 100% solids, high-build epoxy coating formulated to provide long-term corrosion protection and structural enhancement for manholes, pump stations, treatment plants or any wastewater infrastructure subject to high levels of corrosion and/or abrasion to include both municipal and industrial applications. Structure Guard sets fast for a quick return-to-service in the most aggressive and turbulent environments. It finishes smooth to enhance flow and is utilized as an interior or exterior pipe lining.

FEATURES AND BENEFITS

- **Excellent corrosion and abrasion resistance**
- **2 Year shelf life (from date of manufacture)**

CURE TIME @ 70°F | 21°C

- **Re-coat: 2 hours**
- **Light Loading: 1 hour**
- **Immersion: 4 hours**
- **Full Chemical Cure: 24 hours**

POT LIFE

- **@ 40°F | 4.4°C — 20 minutes**
- **@ 70°F | 21°C — 10 minutes**
- **@ 92°F | 33.3°C — 5 minutes**

PACKAGING

Structure Guard is available in 5 gallon | 18.9 L pails and 55 gallon | 208 L drums.

YIELD

Structure Guard will yield theoretical coverage of 20 sq. ft per gallon @ 80 mils | 2.03mm thickness. Actual surface coverage will depend on substrate porosity and roughness. A wet film thickness gauge may be used to determine actual coating thickness.

Distributed By MAXLINER®

VORTEX

WARRANTY

Quadex, LLC warrants its products to be free of defects in material and workmanship. Unless superseded by project specifications and terms agreed upon in writing between installer and Quadex prior to bid, if within one year from purchase, any Quadex, LLC product is proven defective, the company will replace said product or refund its purchase price at its sole discretion. The company's obligation shall be limited solely to such replacement or refund. There are no other warranties by Quadex, LLC, expressed or implied. There is no warranty if Quadex products are stored or used contrary to Quadex, LLC's written directions.

TYPICAL COATING REQUIREMENTS

With Structure Guard®, only 1 coat is needed to attain finished thickness. If additional coats are called for they must be applied before the previous coat has completely cross-linked, typically for 2 hours @ 70°F | 21°C (higher temperatures/ humidity will shorten this window). If re-coating is needed, brush blast before applying the next coat. Before re-coating, clean and dry surface thoroughly to remove all contamination, including amine blush or condensation. Small areas may be abraded by sanding or wire brushing.

The same requirements apply when overlapping seams of adjacent coating sections to create a continuous protective film. If the coating surface to be overlapped at the seam cannot be brush blasted, use a non-impact means, such as power brushing or sanding, to create adequate mechanical profile.

GREENBOOK TEST: PASS

Structure Guard tested in accordance with City of Los Angeles Referral Form BR800097 and successfully conforms to chemical resistance (Pickle Jar) testing requirements in accordance with Greenbook Section SSPWC 211-2. It also meets or exceeds the specifications in SSPWC Section 500-2.8.5 for epoxy liner.

CHEMICAL RESISTANCE

- **Acetic Acid (10%)**
- **Bleach**
- **Butyl Cellosolve**
- **Deionized Water**
- **Ethanol**
- **Hydrogen Sulfide (H_2S)**
- **Lactic Acid (10%)**
- **MEK**
- **Methanol**
- **Nitric Acid (10%)**
- **Nitric Acid (30%)**
- **Sulfuric Acid (20%)**
- **Sodium Hydroxide (50%)**
- **Toluene**
- **Trichloroethane (1,1,1)**
- **Xylene**

Resistance of Plastics to ASTM D543 Completed Chemical Reagents (listed in ASTM F1216)

APPLICATION SYSTEMS

- **Heated Plural Airless Spray Units**
- **Minimum Output: 5,000 psi | 345 bar**
- **Product Hose: Min. – Optimum I.D. 0.375 – 0.5 inch | 9.5 – 12.7mm**

SURFACE PREPARATION

Coating performance is largely determined by the degree of surface preparation. MORE IS BETTER.

EXISTING CONCRETE AND MASONRY substrates must be prepared in a manner that provides a uniform, sound, clean, neutralized surface with sufficient profile suitable for the specified coating. The substrate must be free of all contaminants, such as oil, grease, rust, scale or deposits and have a surface profile equivalent to a CSP5 or greater in accordance with ICRI Technical Guideline No. 03732. This can generally be achieved by abrasive blasting, shot blasting, high pressure water cleaning, water jetting, acid etch, hot water/steam cleaning or a combination of methods.

NEW CONCRETE AND MASONRY SUBSTRATES must be profiled to achieve a minimum CSP5 or greater.

STEEL surfaces may require "Solvent Cleaning" (SSPC-SP 1) to remove oil, grease and other soluble contaminants. Chemical contaminants may be removed according to SSPCSP 12/NACE No. 5. Identification of the contaminants, along with their concentrations, may be obtained from laboratory and field tests as described in SSPC-TU 4 "Field Methods for Retrieval and Analysis of Soluble Salts on Substrates". Surfaces to be coated should then be prepared according to SSPC-SP 5/NACE No.1 "White Blast Cleaning" for immersion service or SSPC-SP 10/NACE No. 2. "Near White Blast Cleaning" for all other service. In certain situations, an alternate procedure may be to used such as high (>5,000 psi | 345 bar) or ultrahigh (>10,000 psi | 690 bar) pressure water cleaning or water cleaning with sand injection. The resulting anchor profile shall be 3.0-5.0 mils | 0.08-0.13mm and be relative to the coating thickness specified.