



ST-538



BED-ROK SOIL STABILIZER

INTRODUCTION

Stratathane ST-538 Bed-Rok Soil Stabilizer is a low viscosity MDI-based injection resin for structural repair, water control and soil stabilization applications. ST-538 reacts very quickly with ST-539 in a 1:1 ratio to form a dense, very hard solid.

Stratathane ST-538 is mixed with ST-539 at the work site to form a single injection material. A twin-stream pump is preferred but the material can be bucket-mixed and batch-poured in small quantities for surface gravity feed applications. The inert end product forms a water barrier which is essentially unaffected by acids, gasses, and micro organisms usually found in soil. The product is water-tolerant, and clean dry surfaces are not required for successful applications. Even large amounts of water can be accommodated through displacement.

| <u>Mix Ratio</u> | <u>ST-538 (A)</u> | <u>ST-539 (B)</u> |
|------------------|-------------------|-------------------|
| By Volume | 1.0 | 1.0 |
| By Weight | 100.0 | 116.4 |

ST-538 is useful for a wide range of water control and soil stabilization applications, including water-bearing soils and sealing cracks or joints in concrete and terrazzo walls, buildings, dams and utility vaults, especially in applications requiring high strength.

| <u>PROPERTIES</u> | <u>ST-538</u> | <u>ST-539</u> |
|-------------------|---------------|---------------|
| Viscosity @ 75F | 12 cps | 16 cps |
| Density lbs/gal | 7.83 | 9.12 |
| Turbidity | Transparent | |

MIX PROPERTIES

| | <u>ASTM</u> | <u>ST-538/39</u> |
|--|-------------|------------------|
| Specific Gravity | D-792 | 1.08 |
| Hardness Shore D | D-2240 | 70 D |
| Tensile Strength (Psi) | D-412 | 5000 |
| Elongation @ Break | D-412 | < 100 |
| Tear Strength, Die C | D-624 | 175 |
| Flexural Strength (Psi) | C-78 | 4400 |
| Compressive Str (Psi) | C-39 | 7600 |
| Splitting Tensile (Psi) | C-496 | 1300 |
| Abrasion Resistance, Gram Loss (H-1 Wheels, 1000 Grms, 1000 Cycles) | | 0.68 |
| Flame Resistance | | YES |

ST-538 may be placed by hand pumps or multi-ratio power pumps. Stainless steel pipe and fittings are recommended but not strictly required because ST-538 is no more corrosive than water. Cleanup of solidified material in the system, however, may sometimes be accomplished with caustic cleaning compounds, making stainless steel advisable.

The very low viscosity of ST-538 Bed-Rok makes it easy to inject. Once cured, its impermeability makes it an effective water shut-off system. The permeability of soil grouted with ST-538 depends on how well its voids are filled with grout. Values in the 10-7 cm/sec range should be obtained using ASTM Constant Head Permeability Test Method D-2434.

Set time is the period from first contact of ST-538 with ST-539 to the point where the mix becomes too thick for gravity flow. The set time is influenced primarily by the mix temperature. Custom formulation is available for set times ranging from about 30 seconds up to about 10 minutes. Set times are longest at low temperatures and vary a little with the age of the



resin. The viscosity of mixed ST-538 is lowest for the first 60% of the set time and increases rapidly as the mix approaches set.

At 72F Stratathane ST-538/ST-539 solidifies in from three to five minutes. When injected into soils, the set time is increased to about twenty minutes. Cooler temperatures slow down set time. Warmer temperatures accelerate the set time.

CLEANUP

When using solvents during cleanup, extinguish all ignition sources and observe proper precautions for handling such materials. For solvent-free cleanup and system flushing, use ST-590 System Flushing Compound. For cleanup of cured ST-538, soak in a 100% solution of ST-522 cleaner using a covered polyethylene container. Grout spills on clothing are permanent, so disposable coveralls are recommended.

HANDLING AND STORAGE

Use reasonable care in handling and storing ST-538 and ST-539. The materials are moderately sensitive to high storage temperatures. Under optimum storage of 40 - 60F in dry conditions, the material should have a useful shelf life of one year. Storage temperature should not exceed 80F. Once a container has been opened, the life of the material is reduced. Let container stand and adjust to ambient temperature before opening to prevent contamination by condensation.

Before handling or using this product, read and understand the Material Safety Data Sheet (MSDS). Instruction in sound safety practices is beyond the scope of this publication.

Direct contact of ST-538 liquid may cause skin and eye irritation. If ST-538 comes in contact with skin, wash with soap and water. For eye contact, flush immediately with water and consult a physician.

ST-538 must not be ingested. Before eating,

smoking or drinking, remove protective clothing, wash with soap and water, and stand away from the immediate work site. Do not smoke while working with ST-538. If respiratory difficulties occur, seek medical attention. Avoid exposure to vapors created from this product when it is heated. Gloves, goggles, respirator and protective clothing are recommended. Ventilate the work area as a matter of good practice, although hazardous levels of toxic vapors are not generally given off of the bulk product below 90 degrees F. Small amounts of MDI may be present and some users may be sensitive to MDI.



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STATEMENT

Strata Tech believes that the information herein is an accurate description of the general properties and characteristics of the product(s), but the user is responsible for obtaining current information because the body of knowledge on these subjects is constantly enlarged. Information herein is subject to change without notice. Field conditions also vary widely, so users must undertake sufficient verification and testing of the product or process herein to determine performance, safety, usefulness, and suitability for their own particular use.

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