

## 2 Component Structural Polyurethane Foam for Concrete Slab Lifting And Soil Stabilisation

**Guardian PUF-SL** is a new generation phthalates free high performance low viscosity hydrophobic structural polyurethane injection grout used to increase the load bearing capacity of loose soils, concrete lifting, void filling or underpinning. **Guardian PUF-SL** reacts into either a hard foam or very hard plastic. Reaction times may be adjusted by varying the accelerator ratio.

### Complies to EN1504 Part 9 and EN1504 Part 5 Class (S)

#### Principle 4 : Structural Strengthening (SS).

- **Method 4.5** – Injecting in Cracks, Voids or Interstices.
- **Method 4.6** – Filling Cracks, Voids or Interstices.

## USES & ADVANTAGES

Guardian PUF-SL may be used for concrete slab lifting & soil stabilization by improving load bearing capacity of loose soils, filling of large voids, cracks and crevices.

#### Typical areas of use include:-

Concrete highways, railroad track slabs, bridge approach slabs, concrete slabs in warehouses, factories, bunded areas, parking bays, aircraft taxiways, filling voids behind pipes, manholes, underpinning of buildings & soil stabilization.

#### Advantages Include:-

- Phthalates free resins.
- Solvent free.
- Fast or slow reactions available.
- Easy mixing 1:1 by volume.
- Low cost lifting of concrete structures/slabs.
- Can be applied in dry or wet conditions.
- Environmentally friendly.
- Rapid strength gain. Traffic ready in 15 minutes.
- Expands 20-30 times unconfined.
- High strength.
- Non shrink.
- Bonds with soil and concrete.
- Stops repeated water erosion.
- Precision lifting.
- Method 4.6 – Filling Cracks, Voids or Interstices.

## PROPERTIES

|                                | For Part A                       | For Part B                 |
|--------------------------------|----------------------------------|----------------------------|
| <b>Appearance:</b>             | Yellow                           | Dark brown                 |
| <b>Viscosity: (mPa.s)@25°C</b> | 900-1300                         | 170-270                    |
| <b>SG:</b>                     | 1.06-1.09                        | 1.22-1.25                  |
| <b>pH Value:</b>               | 9.0-10.5                         | 7.8-8.0                    |
| <b>Mixed Material</b>          |                                  |                            |
| <b>Reaction Time:</b>          | < 10-15 seconds                  |                            |
| <b>Tack Free Time:</b>         | < 60 seconds                     |                            |
| <b>Fully Cured:</b>            | < 15 minutes                     |                            |
| <b>Compressive Strength:</b>   | > 40 N/mm <sup>2</sup> at 7 days | ASTM C579 (with fine sand) |
| <b>Tensile Strength:</b>       | 1.5 MPa                          | ASTM D638                  |
| <b>Young's Strength:</b>       | 50 MPa                           | ASTM D638                  |

## 2 Component Structural Polyurethane Foam for Concrete Slab Lifting And Soil Stabilisation

### MIX RATIO

1:1 by volume

### APPLICATION

- **Guardian PUF-SL** is injected using a 2 component injection pump where the two hoses are connected with a mixing head before attaching to the packers.
- Clean and flush all equipment with **Guardian PU Purge** prior to the injection and between each injection step.
- Check the mixing ratio of the pump by start pumping component A and component B and check the volume in a beaker. To ensure this is 1:1 mix ratio by volume.
- Fill the pump with **Guardian PUF-SL** Part A and Part B and first flush the liquid into waste drums until fresh liquid is observed from the hoses.
- Connect the injection head to the packer.
- Open valves for Part A and Part B and start the injection.
- The injection should be continued until the water flow stops, slab is lifted sufficiently or until the pre-measured amount of product has been injected in each packer.
- Close the valve and disconnect the packers from the mixing head.
- Continue and repeat the injection steps with the adjacent packer.
- When the injection has finished, clean and rinse all equipment with **Guardian PU Purge**.

### PACKAGING

400 litres set; available in **Guardian PUF-SL Part A** 200 litres & **Guardian PUF-SL Part B** 200 litres in 200 litres steel drum.

### STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry conditions. Stored in unopened sealed drums, in a dry area, at temperatures of 5°C-35°C, the shelf life is approximately 12 months.

### HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with cleaner, followed by soap and water. Avoid breathing of vapours; use with adequate ventilation. Please consult our MSDS for more information (available upon request).

### TECHNICAL SERVICE

The Guardian Coating Service Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

### QUALITY ASSURANCE

ISO 9001: 2015 verified by TUV Nord.

All statements and data presented herein are given in good faith and believed to be appropriate and reliable. It is given without express or implied warrant or guarantee. Potential users of Guardian's materials are urged to conduct confirmatory trials to satisfy themselves as to the suitability of the selected product for their particular end use prior to purchase.