TYTRO® SI 550 Data Sheet

Product Description

(Formerly DE NEEF® Organosol 550 DT)

Fast reacting, non-expanding, two-component silica-urea injection grout.

Product Advantages

- Non-expanding, safe for weak strata and soils
- Reacts underwater without dilution
- High bond and compressive strength
- Fire resistant, Class B2 per DIN 4102 Part 1
- Fast reaction time
- Reaction temperature < 230°F
- 1:1 volumetric mix ratio
- Good mixing without marbeling
- Phthalate free,REACH compliant

Applications

- Bonding and consolidating strata in underground mining operations such as longwalls, mine seals and shafts.
- Soil and rock injections where non-expanding grouts are required.
- Sealing and water control injection in underground excavations.
- Anchoring self-drilling anchors and cable heads.

Packaging & Handling

- 10.5 gallon units in 2 pails
- A-component in plastic pail
- B-component in metal drum

TYTRO SI 550 A and B components are sensitive to moisture and frost. Store in original closed packaging in a dry and frost free area. Storage temperature must be between
41°F- 86°F. Once the packaging has been opened, the useful life of the material is greatly reduced and should be used as quickly as possible. Shelf life at 68°F : 2 years

Installation Guidelines

Warning

- Consult the Technical Data Sheets and MSDS before using.

Equipment

- 2- component pumps with a 1:1 ratio such as the DE NEEF® IP 2C-Highflow™ equipped with pressure gauges on both product lines and regulators to compensate pressure and flow rate to assure 1:1 mixing ratio.
- Mixing head with static mixer with at least 24 mixing elements, 36 elements is advised.

Injection

- Injection pressures vary for different applications: smaller cracks will result in higher friction losses, to be overcome by higher pump pressures. Larger cracks will require lower injection pressures. Usually the rise in pumping pressures will become evident at the final stage, when the crack is completely volume-filled.
- Pressures during injections in rock and soil, such as generated by compression and friction, during the permeation in low-permeability, low-cohesion soils or fractured rock formations are to be limited below the maximum stress bearing capacity of the given formation. In these conditions, the injection pressures will be decided after a thorough analysis of the geological and structural conditions, counter pressures and substrate stability.

Packers

- Mechanical or inflatable packers are used. Size and length of packers is determined according to the application.

Cleaning

- After injection, disconnect / remove the packer.
- Close the valve of the B-component and flush only A-component through the mixers and packer.
- If the solution is clear and colorless, disconnect the mixers. Flush the line of the A-component with tap water and flush the line of the B component with DE NEEF® Washing Agent. Then flush both lines with DE NEEF® Separation Oil and leave this in the pump for overnight or longer storage.
- Cured material can be removed mechanically. Spills of uncured material need to be contained with absorbent material and disposed according to local, state and federal laws.

Health and Safety

Users must read and understand the product label and safety data sheet (SDS) for each system component before use. All users should acquaint themselves with this information prior to working with the material. Carefully read detailed precaution statements on the product label and SDSs before use. The most current SDSs can be obtained from the GCP website at gcpat.com or by contacting GCP at +1-703-741-5970.

Limitations

Material will cure slower at low temperature and reaction speed and working time will be considerably reduced at higher temperatures.

Properties / Technical data

A-component		
Density at 77 °F	1.48 g/cm³	EN ISO 2811
Viscosity at 77 °F	Approx. 200-400 cPs	EN ISO 3219
B-component		
Density at 77 °F	1.16 g/cm³	EN ISO 2811
Viscosity at 77 °F	Approx. 110 cPs	EN ISO 3219
Mixed material		
Mixing ration by volume	1:1	
Mixing ratio by weight	100/78	(lbs)
Static mixer	Min 24 – 36 plate levels	
Cured material		
Gel time at 74 °F	Approx 2'30"	Cup test
Expansion rate	Zero	Internal test
Reaction exotherm	< 230 °F	Internal test
Bond strength to dry concrete	• 600 psi	EN ISO 4624
Compressive strength, lab samples at 68 °F		EN 12190
• Pure resin – 15 min	Approx. 2900 psi	
• Pure resin – 30 min	Approx. 3600 psi	
• Pure resin – 24 hours	Approx. 4900 psi	
• Resin/Gravel – 24 hours	Approx. 3500 psi	
• Resin/Water filled gravel – 24 hours	Approx. 3000 psi	
• Flexural strength – 24 hours	Approx. 3500 psi	

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