STERLING® TECHNOTRADE
The Specialist Construction Chemical Company

TECHFLOW® RESICON EPG40

3-COMPONENT, HIGH PERFORMANCE, POURABLE EPOXY GROUTING SYSTEM

Description:

TECHFLOW® RESICON EPG40 epoxy grout system is a three-component, high performance, high precision, low exothermic system that is pourable and solvent-free. Suitable for ambient temperatures ranging from +10°C to +35°C.

Application:

- High-strength grouting and fixing of: Starter bars, Anchors, Fasteners, Tie rods, Crash barrier posts, Fence and railing posts.
- Mechanical joints (i.e. road / bridge / deck types etc.) Sleeper-less, direct rail fixing of: Crane tracks, Light rail and permanent way in tunnels, Light rail and permanent way over bridges.
- Under-grouting and bedding of: Base plates, Bridge bearings, Machine bases, seat base plates for light and heavy machinery including heavy impact and vibratory machinery, reciprocating engines compressors, pumps, presses etc.

Features & Benefits:

- High early strength & fast curing
- Ready-to-mix, pre-batched units
- Non-shrink
- High compressive strength
- High vibration resistance
- Corrosion & chemically resistant
- Stress and impact resistance
- Low coefficient of thermal expansion

Technical Properties:

Chemical Base	Epoxy resin
Compressive Strength	1 day ≥ 40 N/mm2 3 days ≥ 50 N/mm2 7 days ≥ 60 N/mm2 At curing temperature +30 °C
Effective Bearing Area	> 85% (ASTM C1339)
Tensile Strength in Flexure	≥ 25 N/mm2 (7 days / +30 °C) (EN 196)
Tensile Strength	≥ 12 N/mm2 (7 days / +30 °C) (ASTM D638)
Tensile Adhesion Strength	> 10 N/mm2 (concrete failure) (ASTM C882)
Heat Deflection Temperature	+54 °C (7 days / +30 °C)
Layer Thickness	Minimum grout depth 10mm Maximum grout depth 40 mm
Mixing Ratio	Part A : B : C = 2 : 1 : 12 (by weight)
Consumption	~2000 kg/m3
Product Temperature	Must be applied at temperatures between +15 °C and +35°C. Condition the material by also storing at this temperature for 48 hours before use.
Ambient Air Temperature	+10 °C min. / +35 °C max.
Dew Point	Substrate temperature during application must be at least 3 °C above dew point to avoid condensation.
Substrate Temperature	+10 °C min. / +35 °C max.
Substrate Moisture	Content ≤ 4% pbw
Pot Life	~15 minutes (+30 °C, 100 g mass) (FIP 5.1). The pot life begins when the resin and hardener are mixed. It is shorter at high temperatures and longer at low temperatures. The greater the quantity mixed, the shorter the pot life. To obtain longer workability at high temperatures, the mixed adhesive may be divided into portions. Another method is to chill parts A+B and C before mixing them (i.e. only when ap- plication temperatures are above +20°C).

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

Application Instructions:

Substrate Quality:

Mortar and concrete must be older than 28 days (dependent on minimum strength requirements).Verify the substrate strength (concrete, natural stone etc.). The substrate surface (all types) must be clean, dry and free from contaminants such as dirt, oil, grease, existing surface treatments and coatings etc. Steel substrates must be derusted to a standard equivalent to Sa 2.5.The substrate must be sound and all loose particles must be removed. Substrate must be dry or mat damp and free from any standing water, ice etc.

Substrate Preparation:

Concrete, mortar, stone. Substrates must be sound, dry, clean and free from laitance, ice, standing water, grease, oils, old surface treatments or coatings and all loose or friable particles must be removed to achieve a laitance and contaminant free, open textured surface.

Steel:

Must be cleaned and prepared thoroughly to an acceptable quality standard equivalent to SA 2.5 i.e. by blast cleaning and vacuum. Avoid dew point conditions. Surface and base plate contact area must be clean and sound. For best results, the substrate shall be dry. Remove dust, laitance, oils, grease, curing compounds, impregnations, waxes, foreign particles, coatings, and disintegrated materials by mechanical means, i.e. chipping with a chisel, blast cleaning etc. All anchor pockets or sleeves must be free of water. Apply grout immediately to prevent re-oxidizing / rust formation.

Mixing:

Mix components A and B in the component A pail for approx. 30–60 seconds with a paddle type mixer to a low speed drill (300–450 rpm). Avoid aeration while mixing until the material becomes uniformly blended in colour and viscosity. Place the mixed epoxy into an appropriate mixing vessel. Slowly add the contents of component C (to keep air entrapment at a minimum) dependent on flow requirements (observe the correct mixing ratio) and mix until uniform and homogeneous (approx. 3 min). Mix only that quantity which can be used within its pot life.

Application Method/Tools:

The consistency of the TECHFLOW® RESICON EPG40 epoxy grout system requires the use of permanent or temporary forms to contain the material around base plates, for example. In order to prevent leakage or seepage, all of these formwork must be sealed. Apply polyethylene film or wax to all forms to prevent adhesion of the grout. Prepare the formwork to maintain more than 100 mm liquid head to facilitate placement. A grout box equipped with an inclined trough attached to the form will enhance the grout flow and minimize air encapsulation.

Application:

Pour the mixed grout into the prepared forms from one side only (preferably the shorter side), to eliminate air entrapment. Maintain the liquid head to ensure intimate contact to the base plate. Place sufficient epoxy grout in the forms to rise slightly above the underside (3 mm) of the base plate. The minimum void depth beneath the base plates shall be 12 mm. Where the void beneath the base plate is greater than 40 mm, place the epoxy grout in successive 40 mm lifts or less, once the preceding lift has cooled. Once hardened check the adhesion by tapping with a hammer.

Working at high temperatures:

- It is recommended when working with TECHFLOW® RESICON EPG40 at high temperatures that the following guidelines should be observed:
- Prior to use store the unmixed materials in a cool, preferably temperature controlled environment, avoiding exposure to direct sunlight or other heat sources.
- Refer to the Product Data Sheet of the specific product and closely follow the instructions in the section "storage conditions".
- Keep all equipment cool, arranging shade and protection where necessary. It is especially important to keep cool all surfaces that will come into direct con- tact with the material.
- Try to avoid application during the hottest times of the day.
- Provide sufficient material, plant and labour to ensure that the application is a continuous process and that the grout does not stop moving during flow application process.

Important Note: When both the materials and/or the substrates are too hot, the potlife will decrease drastically!

Cleaning of tools:

Sweep excess grout into appropriate containers for disposal before it has hardened. Dispose of in accordance with applicable local regulations. Uncured material can be removed with TechnoPur® Eco Cleaner. Cured material can only be removed mechanically.

Limitations:

Minimum substrate temperature: +10 °C. The material must be conditioned by being stored in an area with an ambient temperature between +10°C and +30 °C for a minimum of 48 hours before using. Do not thin with solvents. Solvents will prevent proper curing and change mechanical properties. TECHFLOW® RESICON EPG40 is a vapour barrier when cured. Minimum grout depth: 10 mm. Maximum grout depth: 40 mm per lift. Component C must be kept dry. For specific bolt grouting applications please refer to Sterling Technotrade Technical Services. For proper seating, allow the grout to rise above the bottom (3 mm) of the base plate. Avoid splitting pre batched units to mix. Mix complete units only. Cold ambient, substrate or material temperatures will influence the curing and flow characteristics of TECHFLOW® RESICON EPG40. Do not subject cured epoxy grout to sudden temperature changes especially during early curing stages. Contact Sterling Technical Services for control joint spacing on large base plate grouting projects. TECHFLOW® RESICON EPG40 resins are formulated to have low creep under permanent loading. However due to the creep behaviour of all polymer materials under load, the long term structural design load must account for creep. Generally the long term structural design load must be lower than 20–25 % of the failure load. Please consult a structural engineer for load calculations for your specific application.

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