STERLING® TECHNOTRADE
The Specialist Construction Chemical Company

TechFlow® ProGrout EPG 400

High strength low exothermic, high flow, Chemical-resistant Epoxy Resin Precision Grout.

Description:

TechFlow® ProGrout EPG 400 is a three component, solvent-free, ultra-high strength, low exothermic and free flowing epoxy resin grout system formulated to exhibit high early strength, to withstand static and dynamic loads in a wide variety of applications. All three component are pre measured, pre packed and strict quality controlled by Factory in order to achieve a pourable consistency and correct mix proportions for whole pack on site.

TechFlow® ProGrout EPG 400 is design for use as a precision, heavy duty multipurpose grout, to cover the majority of grouting and fixing applications encountered within civil engineering and the construction industry in general to withstand static and dynamic loads, where the mechanical properties must be of the highest order. **TechFlow® ProGrout EPG 400** is suitable for an application thickness between 20-400 mm at ambient temperatures between 10-50° C.

Application Includes:

TechFlow® ProGrout EPG 400 is ideally designed for use in the following applications:

- Bearing plinths.
- Base plate grouting in dynamic load situations such as turbines and other reciprocating machinery.
- Underplate grouting to substantial structural elements.
- Rail track applications, to support heavy cranes, or on transporter rails.
- Heavy industrial applications in steelworks, refineries chemical plants and electroplating works.
- Grouting areas where occasional chemical spillage may occur.

Features & Benefits:

- **Excellent in service performance-** Non-shrink capability ensures full surface to surface contact.
- **High tensile and flexural strengths -** Efficient transfer of operational loads to foundation including high dynamic loads.
- **Cost effective-** High early strength gain promotes minimum downtime and early commissioning of plant.
- **High flow-** Effective grouting of even narrow gaps and large baseplates.
- **High strengths even at elevated temperatures-** Maintains alignment and level even with elevated baseplate temperatures.

Applications Instructions

Concrete:

Surfaces must be sound, clean free from ice, oils, grease, standing water and any loose or friable particles and any other surface contaminants. The concrete "pull off" (tensile) strength should be > 1.0 MPa.

Steel & iron:

Clean, free from oil, grease, rust and scale etc.

Typical Properties at 25°C

Appearance	Resinous Paste
Pot life / Working time	60 min at 25°C, 30 min at 40°C,
Application thickness	20mm – 150mm
Compressive strength @25°C (ASTM C579)	≥ 90 Mpa @7days
Flexural strength @25°C (BS 6319 Part 3: 1990)	≥ 20 MPa @ 7 days
Density @ 25°C	Approx. 1925kg/m³
Tensile strength (BS 6319, Part 7 : 1985)	≥ 15 MPa @ 7 days
Recommended working ambient temperature	10 - 50°C
Crack formation @ 300mm and 40°C	No cracks or bleeding
Peak exothermic temperature @ 40°C (ASTM D2471)	50°C
Peak exothermic time @ 40°C (ASTM D2471)	40 min
Water absorption (ASTM C413)	< 0.15%
VOC (ASTM D2369)	< 10 g/ltr (complies with LEED)
Note: The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result.	

Surface Preparation

Concrete Surfaces:

As with all epoxy resin applications the quality of surface preparation has a direct effect on the performance and durability of the system. Concrete surface Concrete must be suitably prepared by scabbling, needle gunning or grit blasting to remove all cement laitance, grease, oil and other contaminants. The surface should be roughened to provide a bond and have a minimum surface texture of ± 1 mm. Wet surfaces should be dried by using a hot, compressed-air lance. The advantages of this are: it dries the surfaces of both the concrete and the steel, it warms up the surfaces of concrete and steel, allowing the grout to flow better in colder conditions. It also ensures better drying under the plate.

- **User friendly-** Simple, full pack mixing to ensure that the performance characteristics are achieved.
- **Good chemical resistance-** Durable even when exposed to many industrial chemicals

Curing:

Good curing is essential for resin based materials to ensure specified performance. Installation using **TechFlow® ProGrout EPG 400** systems can be opened to foot traffic after approximately 24 hours at 25°C. Complete cure is achieved after 72 hours at 25°C.

Cleaning:

Clean all equipment promptly with **TechnoFix® CleenzolPlus.** Any excess cured material will have to be mechanically removed.

Packaging:

TechFlow® ProGrout EPG 400 is supplied in a total pack size of 20, 30kg.

Storage & Shelf Life:

Store under cover out of direct sunlight and protect from extremes of temperature. (In tropical climates the product must be stored in an air-conditioned environment). Shelf life is up to one year when stored in unopened containers as above. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult STIPL's Technical Services Department.

Health & Safety Instructions:

Some people are sensitive to epoxy resin so gloves and a barrier cream or similar should be used when handling these products. If contact with the resin occurs, it must be removed before it hardens with a resin removing cream. Follow by washing with soap and water. Do not use solvent. The use of goggles is recommended but should accidental eye contamination occur, wash thoroughly with plenty of clean water and seek medical treatment immediately.

Steel Surfaces:

The base plates, machinery bolts, etc. must be clean and free from oil, grease and rusting. Degreasing shall be carried out thoroughly, in case of any contamination.

Underplate grouting

The unrestrained surface area of the grout must be kept to a minimum. Generally, the gap between the perimeter formwork and the plate edge should not exceed 75 mm on the pouring side and 25 mm on the opposite side. Formwork on the flank sides should be kept tight to the plate edge. Air pressure relief holes should be provided to allow venting of any isolated high spots.

Formwork

The formwork should be constructed to be leak proof as **TechFlow® ProGrout EPG 400** is a free flow grout. This can be achieved by using foam rubber strip or mastic sealant beneath the constructed formwork and between joints. For free flow grout conditions, it is essential to provide a hydrostatic head of grout. To achieve this a feeding hopper should be used - please consult STIPL's technical representative for more details.

Foundation surface

Concrete should be old enough, if it is newly placed concrete then it needs to be 28 days old and to have reached its design strength. Concrete should have attained a minimum compressive strength of 21 MPa, higher strength concrete is recommended for optimum performance of grout.

All surfaces should be dry, clean, free from standing water, grease, curing compounds, mould oils, all loosely adhered aggregates and cement particles, etc. Chip the concrete surface so aggregates are exposed to ensure all laitance and weak particles are removed. Alternatively use a spray on surface retarder when placing concrete. The exposed aggregate amplitude should not be greater than 10-15 mm. Chamfer the edges of the concrete 45 degrees to 50 mm. width to avoid sharp corners which helps to reduce the potential for cracking. If anchor bolt sleeves are to be placed, be sure all water is removed and the void completely dry. Shade the foundation from direct sunlight for at least 24 hours before grouting and 48 hrs after grouting.

Base Plate

If delay is likely before placing steel base plates, it is recommended that the underside and edge are coated with **TechnoSeal® PrimePlus*** to prevent rust formation and ensure bonding with the **TechFlow® ProGrout EPG 400.** All metal surfaces should be cleaned to a bright finish in accordance with Swedish Standard SA 2½or equal. **TechnoSeal® PrimePlus** can be applied directly onto newly cleaned steel surfaces even if they are damp.

Mixing:

Do not split packs or alter the ratio of resin components in any way. Mix with a slow speed drill and paddle. Add the contents of the reactor container to the base component in a suitable mixing vessel, ensuring complete transfer of both resin components. Mix for one minute before slowly adding the aggregate and continue mixing until a flowing, pourable lump free consistency is achieved. Mixing for too long can entrain air. Once mixed, the material must be used within the specified pot life (see under Properties). After this time, unused material will have stiffened and should be discarded.

Note: Immediately prior to placement, all surfaces must be dry.

Disclaimer: The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

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Additional Information: Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

*Separate datasheet are available on these products.

Placing:

Allow to stand free 5min before pouring, into the prepared area in such a manner that it has the shortest distance to flow. For long pours a suitable head of pressure may be required. Ensure the area to be grouted is not completely sealed, and any displaced air can be expelled. Pour continuously from one side only.
Allow the grout to set prior to removal of formwork (normally after 6 hours). Where placement exceeds depths of 75mm, application should be carried out in layers. The second layer to be applied after 6 hours.

Note: Ensure that the grout can be placed within its pot life. Continuous grout flow is essential. Sufficient grout must be available prior to starting and the time taken to pour a batch must be regulated to the time taken to prepare the next one. Pouring should be from one side of the void to eliminate air entrapment. The hydrostatic head must be maintained at all times so that a continuous grout front is achieved.

Hot Weather Working:

Whilst the performance of **TechFlow® ProGrout EPG 400** at elevated temperatures is assured, application under such conditions can sometimes be difficult. It is therefore suggested that, for temperatures above 35°C, the following guidelines are used-

Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight. Keep mixing and placing equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.
Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight.
Ensure that there are sufficient operatives available to complete application within the material's pot life.