

TechFlow[®] ProGrout HT

Heat resistant, High Precision, High Flow Non-Shrink Specialty cementitious Grout.

Description:

TechFlow[®] ProGrout HT is a Pre-bagged factory quality controlled ready to use dry powder. The addition of a controlled amount of potable clean water produces a chloride and hydrogen free, high flow, pourable, high compressive strengths cementitious specialty grouts for applications in high temperature zones.

TechFlow[®] ProGrout HT consists of a precisely proportioned blend of Portland cement, graded fillers, supplementary cementing materials and special chemical additives which impart controlled expansion, while minimizing water demand. **TechFlow[®] ProGrout HT** is designed to provide resistance to high temperatures up to 400°C without losing its performance characteristics.

Application Includes:

TechFlow[®] ProGrout HT is ideally designed for following application-

- For grouting areas where high temperature resistance and high early strength grout is required.
- For grouting of equipment like blast furnace, chimneys, etc.
- For concrete floor refurbishments, where high temperature and thermal gradients are envisaged.

Features & Benefits:

- Ready to use single component which requires only addition of recommended amount of potable clean
- Water on site.
- Very good flow characteristics ensures high level of contact with the load bearing area.
- Rapid strength development & Expansion system compensates for shrinkage in the plastic state.
- Impact- and vibration resistant.
- Non-corrosive, Nonflammable and Non-toxic.
- No iron content to cause staining.
- Pre-bagged factory quality controlled material overcomes onsite batching variations.
- Thermal resistance property ensures effective functioning even at high temperatures upto 400°C and thermal gradients.

Applications Instructions

Substrate Quality

Concrete, grout, stone: 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 or grease, rust and scale etc.

Preparation Foundation surface

The substrate surface must be free from oil, grease or any loosely adherent materials. If the concrete surface is defective or has laitance, it must be cut back to a sound base. Bolt holes and fixing pockets must be blown clean of any dirt or debris. Immediately before grouting takes place any free water should be removed with particular care being taken to blow out all bolt holes and pockets.

Typical Properties at 25°C

Appearance		Free flowing grey powder (Typical Value)					
Fresh Wet Density		~2250 -2350kg/m ³ (depending on actual consistency used.)					
Application thickness		20mm – 100mm					
Substrate Temperature		+5°C min. / +40°C max.					
Ambient Temperature		+5°C min. / +40°C max.					
Placement Time		Within 25 mins of mixing					
Compressive strength ASTM C109/109M-11	Consistency	U nit	W/P Ratio	1d ay	3 Days	7 days	28 days
	Flowable	5c m cu be	0.14-0.15		≥ 40 MPa	≥60 MPa	≥ 75 MPa
Flexural strength ASTM C348		≥ 10 Mpa @ 28 days					
Potlife		~20 minutes at +30°C					
Set Time		Initial			Final		
		7 hr @ 25°C, ASTM C191			11hr @ 25°C, ASTM C191		
Expansion characteristics ASTM C827/C827M-10		Up to 3%					
Bleeding: ASTM C940		Nil					
Water: Powder Mixing Ratio	For Flowable consistency Water: Powder = 0.14 to 0.16 by weight (4.2 L to 4.8 L water per 30 kg bag).			For Pourable consistency Water : Powder = 0.12 to 0.14 by weight (3.6 L to 4.2 L water per 30 kg bag)			
Tensile strength: ASTM C190		4 MPa @ 28 days					
Material required for 1m ³ Volume of Grout, kg		~1900 -2000 kg/m ³					
Standards		Complies with ASTM C1107, Grade A.					
<p>Note: Compressive strength is determined by using 5cm cube specimen at laboratory controlled condition, Water demand may vary depending upon site condition. Typical properties @ 4.50 litre/30 kg @ 25°C. Normally 25 - 30% decrease in mechanical properties will be noticed after exposure to 400°C.</p>							

Curing:

On completion of grouting the exposed area should be covered with wet hessian, plastic sheeting or **TechnoFinish® ConKure 101/102** to prevent excessive moisture loss. At ambient temperature, formwork should be removed no sooner than 24 hours after completion of grouting. The covering should stay in place for a further 6 days. Lack of sufficient curing could result in plastic cracking and drying shrinkage on the surface.

Cleaning:

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

Packaging:

TechFlow® ProGrout HT is available in 30 kg bags.

Storage & Shelf Life:

TechFlow® ProGrout HT has a shelf life of 12 months from date of manufacture if stored at temperatures between 5°C and 40°C in original unopened bags. If these conditions are exceeded, STIPL's Technical representative should be contacted for advice.

Placing

At 30°C place the grout within 20 minutes of mixing to gain full benefit of the expansion process.

TechFlow® ProGrout HT can be placed in thicknesses of upto 100mm in a single pour when used as an under plate grout. Any bolt pockets must be grouted prior to grouting between the substrate and the base plate. Continuous grout flow is essential. Sufficient grout must be prepared before starting. The time taken to pour a batch must be regulated to the time to prepare the next one. Grouting operations should be preferably carried out in a shaded condition. Avoid grouting at the hottest time of the day.

TechFlow® ProGrout HT can be poured from minimum 20mm up to 100mm in one single pour. However, for depths greater than 100mm it is recommended to add the 5-10mm aggregate to the grout in order to reduce the heat generated during the exothermic reaction when the grout is mixed and poured for larger depths should be confirmed by site trials.

Cover the exposed areas immediately after placing with a polythene sheet, to protect from drying winds. Typically, the addition rate would be between 12-15kg's of clean dry aggregate per 30kg bag of TechFlow® ProGrout HT.

Base Plate

It is essential that this is clean and free from oil, grease, rust or scale. Air pressure relief holes should be provided to allow venting of any isolated high spots.

Leveling shims

If these are to be removed after the grout has hardened, they should be treated with a thin layer of grease.

Unrestricted surface area

This must be kept to a minimum. Generally, the gap width between the perimeter formwork and the plate edge should not exceed 150 mm on the pouring side and 50 mm on the opposite side. It is advisable, where practical, to have no gap at the flank sides.

Formwork

It is essential that the formwork to be constructed is leak proof and water tight. In order to achieve this it is recommended that foam rubber strips or a suitable sealant such as polyurethane or silicone be used underneath the formwork. The formwork should be constructed, which will allow and ensure a grout head is maintained on the side above the level of the underside at the base plate. The formwork should allow for gravity flow of grout with a suitable grout head allowing for continuous flow between the base plate and the concrete substrate.

To ensure ease of formwork removal, the formwork should be coated with form oil or release oil prior to grouting (consult STIPL's Technical representative for additional information). It is recommended that **TechFlow® ProGrout HT** be kept in a cool environment and the use of cold water be used for mixing.

It is recommended that in instances where the temperature is greater than 30°C, the grouting be conducted early in the day or late in the evening and sheltered from sunlight and direct heat.

Mixing

Mix grout powder mechanically in the correct ratio with water with low speed (max. 500 rpm) electric drill to avoid entraining too much air. Put around 80 to 90% of required water in the mixing drum, followed by **TechFlow® ProGrout HT** and then add the balance water. Dependent on the desired consistency and flow properties, the mixing ratio can be adjusted. Do not mix more grout, which cannot be used within Pot Life. **DO NOT ADD EXTRA WATER.**

Consistency	TechFlow®Pro Grout HT	Potable Water Addition (Litres)	W/P Ratio
For Flowable consistency	30 Kg	4.2- 4.8 Litre	0.14 to 0.16
For Pourable consistency	30 Kg	3.6 -4.2 Litre	0.12 to 0.14

Caution: Unopened bags are to be kept in a shaded area water used for mixing should be below 25°C, particularly in high ambient temperature conditions. Do not mix by hand. Do not add additional water. Discard any unused grout that has stiffened or hardened. Do not retemper.

STERLING TECHNO TRADE INDIA PRIVATE LIMITED

The Specialist Construction Chemical Company®

Head Office: 109-111-112, 1st Floor, Vijaya Building, No. 17, Barakhamba Road, Connaught Place, New Delhi- 110001

Manufacturing Unit: Plot No-J-3, UPSIDC Site C, Surajpur Industrial Area, Greater Noida, Uttar Pradesh 201306

WEB: sterlingtechnotrade.com | **EMAIL:** support@sterlingtechnotrade.com | **TEL:** 01145084212

Health & Safety Instructions:

TechFlow® ProGrout HT may cause irritation to skin or eyes. In case of accidental contact with eyes, immediately flush with plenty of water and seek medical advice is necessary. For further information refer to the Material Safety Data Sheet.

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.

Edition: 09/2019/001 Identification No: PD-357
This datasheet supersedes all previous versions.

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.

Limitations

Do not use **TechFlow® ProGrout HT** for patch repair work etc. Ensure formwork is secure and watertight to prevent movement and leaking during placing and curing. Use chilled water for mixing in high ambient temperature. Depending on requirements and site conditions the addition of dry, single size and clean aggregates is possible. Trials are recommended to confirm suitability of aggregates to be used. For large bedding holes and higher gaps duly washed coarse aggregates of size 6-10mm down may be mixed with **TechFlow® ProGrout HT**. For additional technical information on **TechFlow® ProGrout HT** or other grouting materials contact STIPL's technical services department.