



# Expanproof\* TGP

## Crystalline capillary waterproofing for concrete

### Uses

Expanproof\* TGP is an economical cementitious system designed for waterproofing concrete against positive or negative hydrostatic water pressure in a wide variety of structures such as:

- Sewage treatment and water treatment plants
- Water tanks
- Concrete pipes, Manholes
- Basements, foundation, piles, retaining wall etc.

### Advantages

- Penetrates concrete, seals capillary tracts and hairline cracks upto 0.50 mm
- Contains no chlorides
- Easy to apply, cost effective in use
- Can be applied to new or old concrete in both interior and exterior locations, reduce chloride and sulphate attack
- Suitable for above or below ground structures
- Surface damage will not affect the system

### Description

Expanproof\* TGP crystalline capillary waterproofing system is a blend of proprietary Portland cements, quartz aggregates and specialized chemicals. In the presence of moisture, the active chemical additives in Expanproof\* TGP penetrate into concrete and react chemically with free lime to produce insoluble crystals.

This crystalline growth reduces concrete porosity by blocking capillaries and filling hairline cracks caused by shrinkage or expansion. Unlike membrane types of waterproofing which only provide a surface barrier, Expanproof\* TGP continues to produce crystals in the presence of water therefore providing long lasting impermeability.

### Instructions for use

#### Preparation

##### Old concrete

Concrete surfaces must be clean, sound and free from any contamination. Cleaning can be achieved by high pressure water jetting.

High pressure water jetting is the preferred method of surface preparation because mechanical cleaning, surface saturation and substrate roughening are simultaneously achieved. All surfaces to receive Expanproof\* TGP must be pre-dampened.

### New concrete

Following stripping of formwork, water jet or acid etch as above to remove all traces of form oil and surface laitance. Remove all debris from the work area before proceeding with thorough saturation (with clean potable water) of the area prior to the next stage of the works.

### Mixing

#### Slurry consistency

Add clean potable water to Expanproof\* TGP at the rate of 6.60 litres per 20 kg bag of Expanproof\* TGP. Mix thoroughly using a slow speed drill (300 to 500 rpm) and recommended mixing paddle until a creamy consistency is achieved.

For mortar consistency, reduce water addition to 3.00 to 3.52 litres of clean potable water per 20 kg of Expanproof\* TGP, following mixing instructions identified above.

Do not mix more material than can be safely used in 20 minutes at 25°C @ 50% RH. If the mixture thickens, re-stir to reduce consistency, do not add water.

### Application

#### Dry shake for newly poured or Mix in fresh concrete

Use Expanproof\* TGP directly from the bag. Wearing rubber gloves, distribute the powder evenly by hand over freshly poured concrete at the rate of 1.2 to 1.3kg/m<sup>2</sup> per application, before final trowelling works. It is recommended to evenly distribute 50% of the powder in one direction with the remaining 50% at right angles to the first application.

Release the powder as close to the wet concrete as possible, this will minimize powder loss during windy conditions. For large areas, a rotary type spreader may prove beneficial.

Expanproof\* TGP can also be use as crystalline admixture and can be mixed in fresh concrete @ 0.25 - 0.75 kg./bag of cement.

### Properties:

Form	:	Powder
Color	:	Light grey
pH value	:	10
Application Temp.	:	5 to 40 °C
Resistant to water	:	15 Bar
Pressure	:	
Pot life	:	35 Min @ 35 °C
Drying time	:	40 - 50 min @ 35 °C



CONSTRUCTION CHEMISTRY

### Slurry coat for existing concrete

Expanproof\* TGP slurry coat can be applied with a soft brush, broom, or plaster sprayer. Ensure the slurry is worked well into openings, rough surfaces, joints and routed out areas. Make the second application when the first coat has reached initial set (usually within one hour dependent upon temperature). If the first coat has dried out, moisten the surface prior to applying the second

Active water leaks should be pre-sealed by using a rapid setting plugging mortar Expanmortar\* Plug (see separate data sheet), prior to application of Expanproof\* TGP. Curing and protection Expanproof\* TGP applications must be kept moist for a minimum of 48 hours therefore following initial set, curing by water spraying is recommended. The treated surface shall be 'fog' sprayed a minimum of 3 to 4 times daily for the 48 hour period.

In warmer climates, it is recommended to spray more frequently whereby the treated surface is kept constantly moist. It is important to keep the treated substrate moist to allow crystal formation to occur. Protect surfaces from foot traffic for 48 hours or heavy traffic for 7 days.

Freshly applied Expanproof\* TGP must be protected from extreme weather conditions such as strong winds, high temperatures, rain and freezing for a period of not less than 48 hours following application.

### Cleaning

Immediately following the application of Expanproof\* TGP, clean all tools and equipment with clean water. Cured material can only be removed mechanically.

### Limitations

- Expanproof\* TGP should not be used when the temperature is 5°C and falling. Full activation and effectiveness of Expanproof\* TGP may require 2-3 weeks following application.
- Expanproof\* TGP is not to be used to seal leaking cracks in a structure. Refer to Expanchem's Expangrout injection range.

### Technical support

Expanchem Fospak offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

### Estimating

#### Supply

**Expanproof\* TGP** : 20 kg bags

#### Coverage/Consumption:

**Expanproof\* TGP:** 1-1.5 kg/m<sup>2</sup> per application (Brush)  
1.2-1.3 kg/m<sup>2</sup> per application (Dry Shake)  
0.25 - 0.75 kg/bag of cement (Concrete)

Actual coverage rates will depend upon the profile and porosity of the substrate.

#### Available in two grades:

**Expanproof TGP for surface application**  
**Expanproof TGP for concrete**

### Storage

#### Shelf life

The shelf life of Expanproof\* TGP is 6 months if in original unopened packs stored below 35°C in a shaded, dry environment.

### Precautions

#### Health and safety

Expanproof\* TGP contains chemicals which may cause irritation to the eyes, respiratory system and skin. Goggles, rubber gloves and long sleeved garments are strongly recommended when using Expanproof\* TGP. Avoid inhalation of dust, if necessary, wear suitable respiratory protective equipment.



CONSTRUCTION CHEMISTRY

\* Denotes the trademark registered.

#### REGIONAL SALES OFFICES IN PAKISTAN:

**Fospak (Pvt) Ltd.****Head Office**

702, Business Avenue,  
Block-6, PECHS., Shahra-e-Faisal,  
Karachi, Pakistan.

Tel # +92-21-34528477, 34529859

Fax # +92-21-34522436

Email : info.khi@fospak.com.pk

**Lahore Sales Office**

2nd Floor Sarwar Shaheed Plaza,  
Cavalry Ground,  
Main Boulevard, Lahore Cantt,  
Lahore, Pakistan.

Tel # +92-42-36675773

Fax # +92-42-36675838

Email : info.lhr@fospak.com.pk

**Rawalpindi Sales Office**

1st Floor,  
Al-Harmin Plaza,  
Main Murree Road,  
Rawalpindi, Pakistan.

Tel # +92-51-9290592

Fax # +92-51-9290590

Email : info.isb@fospak.com.pk

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