

## Precision Non Shrink Cementitious Grout – Corrosion & Fire Resistant

**Guardian FRG** is a unique non shrink cementitious grout containing special additives to give it corrosion and fire resistance properties.

### USES & ADVANTAGES

**Guardian FRG** is a non shrink cementitious grout for applications such as grouting of pipe lines, plinths, sewage treatment plants, structures exposed to sea water, under anchors and rails, machinery bases, turbines, pumps, generators, bridge bearings, hydraulic steel structures in aggressive environments etc.

#### Advantages include:-

- High strength.
- Protects concrete and steel rebar from deterioration and oxidation.
- Non-toxic.
- Protects against harmful elements such as sulphates & chlorides.
- Cost effective.
- Environmentally friendly.
- No bleeding or segregation.
- Vibration and impact resistant.
- Easy to use.
- Neutralises chloride ion activity.
- Extended working times.
- Fire resistant.
- Corrosion resistant.

### PROPERTIES

<b>Appearance:</b>	Grey powder
<b>Bulk Density:</b>	Approx. 1.66-1.70 kg/litre
<b>Yield:</b>	Approx. 74-78 x 25 kg/bags/m <sup>3</sup> of grout depending on water content
<b>Bond Strength:</b>	2.5 N/mm <sup>2</sup> at 28 days to Concrete ASTM D 4541 (Concrete failure)
<b>Drying Shrinkage:</b>	< 500 micro strain ASTM C490 at 28 days 25°C C/RH 50%
<b>Resistivity:</b>	< 12,000 ohm cm at 28 days Expansion of up to 1% or greater in unset material according to ASTM C827. Drying shrinkage is compensated for complying with the requirements of ASTM C1107, type C.

### SURFACE PREPARATION

Surfaces should be clean, sound and free from oil, grease, laitance and loose particles. Metal surfaces should also be clean & free from rust, oil & grease.

### MIXING

**Guardian FRG** is a pre-mixed non-shrink grout. Pour required quantity of water into a mixing container and add 1 bag of **Guardian FRG** gradually while rotating a mechanical mixer (max. 400 R.P.M.) mix for 3-5 minutes until lump free. Addition of water should be approximately 4 litres for a J rote flow of 8 + 2 seconds. Do not add more than the maximum water content. This will result in loss of strength and increased segregation.

## Precision Non Shring Cementitious Grout – Corrosion & Fire Resistant

### APPLICATION

Ensure the substrate is correctly prepared. No con-tamination and saturated with water at least 3 - 4 hours prior to pouring the grout. No free water should be left. During application ensure air entrained into the grout is able to escape through relief holes. Maintain continuous head when base-plate grouting. Mortar flow should not be interrupted.

### CURING

To prevent rapid surface drying and crazing, use a suitable curing compound from Guardian's range Guardian 90.

### IMPORTANT

- Min. gap 5 mm up to max. 150 mm.
- Cure the grout.
- Formwork should be secure, do not allow grout loss.
- Temperatures will affect the setting time and strength gain.

In temperatures over 35oC ice or chilled water may be used.

*Note :- For large & deep volume pours, 10 mm down aggregate can be mixed with grout in the ratio of 1:1 or 1:2 as per site required conditions.*

### CONSUMPTION

76 x 25 kg bags & 285 litres of water for approx. 1 m3 of mortar.

### CLEANING

Clean all tools with water immediately after use.

### PACKAGING

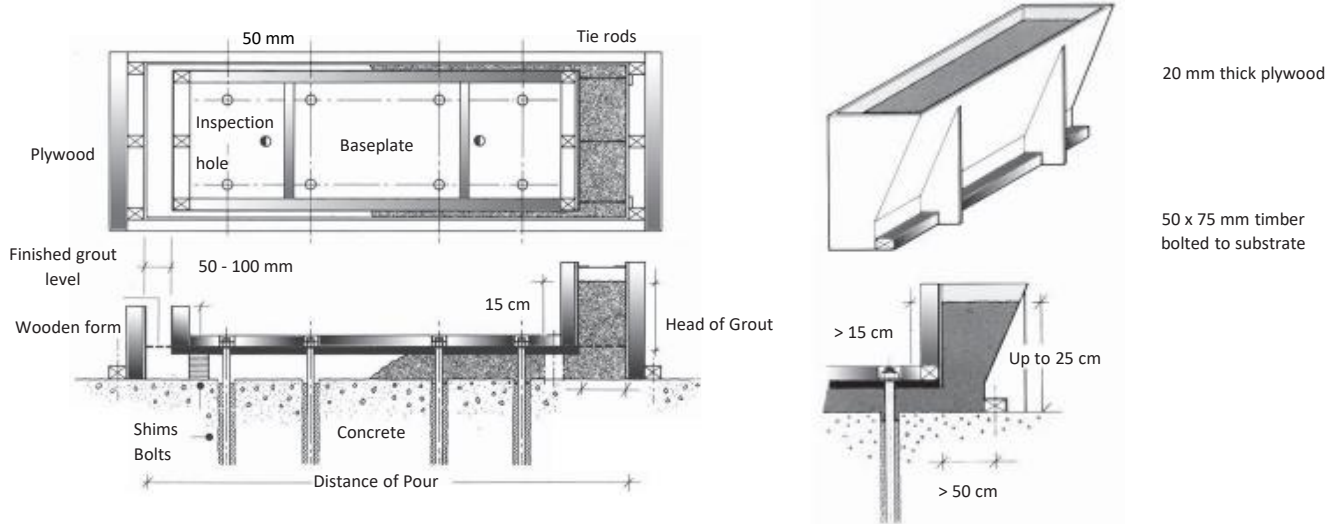
25 kg bag. 4 ply plastic lined bags.

## TYPICAL CHARACTERISTICS AT 30°C UNDER LABORATORY CONDITIONS

Water Content (%)	Consistency (J rote)	Setting time@25°C (minutes) ASTM C191-01a / ASTM C807		Bleeding ASTM C940 / ASTM C232	Average Compressive Strengths (N/mm <sup>2</sup> ) - ASTM C109				Flexural Strengths (N/mm <sup>2</sup> ) ASTM C348 28 days
		Initial	Final		1 Day	3 Days	7 Days	28 Days	
15-16	8 – 10 seconds	160-185	190-220	0	35-45	40-55	60-65	70-75	10-13

## Precision Non Shrink Cementitious Grout – Corrosion & Fire Resistant

### TYPICAL DRAWING FOR BASEPLATE INSTALLATION



### STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

### TECHNICAL SERVICE

Guardian Coating Service Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

### HEALTH & SAFETY

Guardian FRG is alkaline avoid contact with skin & eyes. Gloves, goggles and dust mask should be worn. Remove from skin with soapy water. Splashes in the eyes should be washed out with copious amounts of clean water and medical attention sought.

Guardian FRG is non-flammable.

### QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.