

## Product Description

DynoGrout HR is a unique cement based grout for supporting equipment and structural base plates in high temperature environment.

DynoGrout HR is a blend of Portland cement, graded fillers and chemical additives which impart controlled expansion, while minimising water demand. The product is designed to provide resistance to high temperatures upto 500 °C without losing its performance characteristics.

## Uses

DynoGrout HR is used for grouting of equipment like blast furnace, kiln and foundry application also for concrete floor refurbishments, where high temperature and thermal gradients are envisaged.

## Advantages

- Expansion system compensates for shrinkage in the plastic state
- Prepacked material overcomes onsite batching variations
- Develops high 24 hour compressive strength
- Free flow ensures high level of contact with the load bearing area
- Temperature resistance property ensures effective functioning even at high temperatures upto 500 °C and thermal gradients

## Technical support

An experienced technical advisory team is available to give technical service on request.

## Properties

Compressive strength (IS : 4031 Part 6) (W/P=0.14)

Age (days) Compressive Strength ( N/mm<sup>2</sup>)

1	35
3	60
7	70
28	90

Flexural strength - 9 N/mm<sup>2</sup> @ 28 days  
(BS 4551, 1980)

Tensile strength - 3 N/mm<sup>2</sup> @ 28 days

Free Expansion - 1-2%

Density - 2250-2350 Kg/m<sup>3</sup>

Normally 25 - 30% decrease in mechanical properties will be noticed after exposure to 500°C.

## Specification Clauses

### Performance specification

All grouting must be carried out with a pre packed cement based product which is chloride free.

It shall be mixed with clean water to the required consistency.

The grout must not bleed or segregate.

A positive volumetric expansion shall occur while the grout is plastic by means of gaseous system.

The ultimate compressive strength of the grout must exceed 50 N/mm<sup>2</sup> at 28 days after 15 cycles of exposure to 500°C.

The storage handling and placement of the grout must be in strict accordance with the manufacturer's instructions.

The grout shall be capable of resisting high temperatures upto 500 °C and thermal gradients.

## Application Guidelines

### Surface Preparation

The substrate surface must be free from oil, grease or any other contaminants. If the concrete surface is defective or has laitence, it must be cut back to a sound base. Bolt holes and fixing pockets must be blown clean of any dirt or debris. Concrete must be clean, sound and roughened to ensure a good bond.

### Pre-soaking

Soak concrete for 8 to 24 hours prior to placing, the concrete substrates should be saturated with fresh water. Immediately before grouting takes place any free water should be removed with particular care being taken in all bolt holes and pockets.

### Formwork

The formwork should be constructed to be leakproof. This can be achieved by using foam rubber strip beneath the constructed formwork and between joints. In some cases it is practical to use a sacrificial semi-dry sand and cement formwork. The formwork should include outlets for pre-soaking.

### Unrestrained surface area

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

## Mixing and placing

### Mixing

For best results a mechanically powered grout mixer should be used. When quantities upto 50 kg are used, a slow speed drill fitted with a high shear mixer is suitable. Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer.

### Consistency of grout mix

The quantity of clean water required to be added to a 25 kg bag to achieve the desired consistency is 3.5 - 4.0 litres. The selected water content should be accurately measured into the mixer. The total content of the DynoGrout HR bag should be slowly added and consistency. To enable the grouting operation to be carried out continuously, it is essential that sufficient mixing capacity and labour are available. The use of a grout holding tank with provision to gently agitate the grout may be required.

### Placing

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

DynoGrout HR can be placed in thicknesses of upto 100mm in a single pour when used as an underplate grout.

For grouting sections, exceeding 100mm thick DynoGrout HR shall be added with special coarse aggregate. Please contact local Technokem office.

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.

### Curing

On completion of the grouting operation, exposed areas should be thoroughly cured. This should be done by the use of Concure curing membrane, continuous application of water and/or wet hessian.

### Cleaning

DynoGrout HR should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically, or with Techno Tera Kleen.

## Limitations

### Low temperature working

When the air or contact surface temperatures are 10 °C or below on a falling thermometer, warm water (30-40 °C) is recommended to accelerate strength development. For ambient temperature below 10 °C the formwork should be kept in place for at least 36 hours.

Normal precautions for winter working with cementitious materials should then be adopted.

### High temperature working

At ambient temperatures above 40 °C, cool water (below 20°C) should be used for mixing the grout prior to placement.

## Estimating

### Packaging

DynoGrout HR is supplied in 25 Kg moisture resistant bags.

### Yield

Allowance should be made for wastage when estimating quantities required. The yield per bag depends on the quantity of water added. The approximate yield per 25 Kg bag @ W/ p = 0.14 is 12 Ltrs.

## Storage

### Shelf life

DynoGrout HR has a shelf life of 9 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity, the shelf life may be reduced.

### Precautions

### Health and Safety

DynoGrout HR is alkaline and should not come into contact with skin and eyes. Avoid inhalation of dust during mixing. Gloves, goggles and dust mask should be worn. If contact with skin occurs, wash with water. Splashes on eyes should be washed immediately with plenty of clean water and medical advice sought.

### Fire

DynoGrout HR is non-flammable.

### Additional information

Technokem manufactures a wide range of products includes admixtures, grouts & anchors, specialised flooring materials, joint sealants, waterproofing membranes, and adhesives.

Separate data sheets are available on these products.

**Important:** Technokem products are guaranteed against defective materials and are sold subject to its standard terms and conditions of sale. It is the Customer's responsibility to satisfy themselves by checking with the Company whether the information is still current at the time of use. The customer must be satisfied that the product is suitable for the use intended. All products comply with the properties shown on current Technical Literatures. However, Technokem does not warranty or guarantee the installation of the products as it does not have any control over installation or end use of the product. All information and particularly the recommendation relating to application and end use are given in good faith.

### For Complaints/Suggestions:

Please write to our Customer Care Executive at

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