

# ArmGrout HR

(Formerly known as MYK GROUT HR)

Heat resistant, High strength, Non shrink, Free flow, Cementitious Grout



## TECHNICAL DATA SHEET

### Product Description

ArmGrout HR is supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a free flowing, non-shrink grout for applications in high temperature zones.

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

### Uses

ArmGrout HR is used for grouting of equipment like blast furnace, chimneys, etc., and also for concrete floor refurbishments, where high temperature and thermal gradients are envisaged.

### Features and Benefits

- Expansion system compensates for shrinkage in the plastic states
- No iron content to cause staining
- Pre packed material overcomes onsite batching variations
- Develops high strength
- Free flow ensures high level of contact with the load bearing area
- Thermal resistance property ensures effective functioning even at high temperatures up to 500°C and thermal gradients

### Application Methodology

#### 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.

#### 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.

#### Form work

The formwork should be constructed to be leak proof. This can be achieved by using foam rubber strip or mastic sealant beneath the constructed formwork and between joints.

In some cases, it is practical to use sacrificial semi-dry sand and cement formwork. The formwork should include outlets for pre-soaking.

#### 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.

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### Mixing and placing Mixing

For best results a mechanically powered grout mixer should be used. When quantities up to 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 liters. The selected water content should be accurately measured into the mixer. The total content of the Arm grout 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 labor 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. ArmGrout Additive can be placed in thicknesses of up to 100mm in a single pour when used as an under plate grout.

For grouting sections, exceeding 100mm thick ArmGrout Additive shall be added with special coarse aggregate.

Please contact local MYK Arment 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 Con core curing membrane, continuous application of water and/or wet hessian.

### Cleaning

ArmGrout HR should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically, or with Reawakens.



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### Technical Data

Density	2300-2450 Kg/m <sup>3</sup>
Free Expansion	1-2%
Compressive Strength (ASTM C 109)	N/mm <sup>2</sup>
1 day	25
3 days	45
7 days	55
28 days	65
Flexural strength @ 28 days (BS 4551, 1980)	7 N/mm <sup>2</sup>
Tensile strength @ 28 days (ASTM C 307)	3 N/mm <sup>2</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 up to 500°C and thermal gradients.

### 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 = 0.15 is 13 Ltrs.

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#### Limitations

##### Low temperature working

When the air or contact surface temperatures are 10<sup>0</sup>C or below on a falling thermometer, warm water (30-40<sup>0</sup>C) is recommended to accelerate strength development. For ambient temperature below 10<sup>0</sup>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<sup>0</sup>C, cool water (below 20<sup>0</sup>C) should be used for mixing the grout prior to placement.

#### Packaging

ArmGrout HR is supplied in 25 Kg moisture resistant bags.

#### Storage and Shelf Life

ArmGrout HR has a shelf life of 6 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity, the shelf life may be reduced.

#### Health and Safety Instructions

ArmGrout 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

ArmGrout HR is non flammable.

#### Product Categories Available



#### Legal Note

The information, and, in particular, the recommendations relating to the application and end-use of MYK Arment products, are given in good faith based on MYK Arment current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with MYK Arment's recommendations. In practice, the difference in materials, substrates and actual site conditions are such that no warranty in respect of merchant ability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application & purpose. MYK Arment reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local product data sheet for the product concerned, copies of which will be supplied on request.