

# MAXGROUT<sup>®</sup> PAF

**Polyester Resin Based Anchor Grout**



The three versions of Maxgrout<sup>®</sup> PAF polyester resin grout are all pre measured, two part, filled polyester resin grouts. After hardening the grout produces anchorages of consistent reproducible values. The versions are:

Maxgrout LA (Large aggregate) Maxgrout VA (Small aggregate) Maxgrout HA (Pumpable grade) Maxgrout LA is used where the hole diameter exceeds bar diameter by 25 to 50mm.

Maxgrout VA is used where the difference between the hole diameter and bar diameter is <25mm.

Maxgrout HA is used in overhead or horizontal holes where bar/hole relationship conforms to Maxgrout VA resin grout. The thixotropic nature of Maxgrout HA resin grout reduces flow of grout out of the hole.

## Uses

Maxgrout<sup>®</sup> PAF is used for high strength corrosion resistant anchoring of bolts and bars from 12 - 51mm diameter into concrete rock, masonry or brickwork where high speed of installation and early application of load is required. Permanent installation of reinforcement starter bars, foundation bolts, base plates, balustrading, barriers and safety fences, railway tracks, tie-back anchors, reinforcement dwelling abutments, ground anchors for towers, cranes, dock sills.

## Benefits

- Rapid strength gain
- Vibration-resistant
- Corrosion-resistant
- Non-expansive
- Can be placed under water

## Technical Support

Thermax offers technical support service to specifiers, end-users and contractors, as well as on-site technical assistance in locations all over the country.

## Standards and Specifications

Materials tested in accordance with BS-4551, BS-5080, BS-2782.

## Design Criteria

The version of Maxgrout<sup>®</sup> PAF to be used depends upon the ambient temperature and anchor conditions. The high strength of the cured resin permits strong anchors to be

created. The ultimate bond strength developed depends on:

- Strength of Host Material
- Length of resin bond to bar
- Hole preparation and formation
- Type and dimension of bar

The depth of embedment/bond length required depends on pull out bond force required and the diameter of the bar being used. The minimum bond length required may be calculated using the formula.

$$P = pdlf_b$$

Where,

P= Pull out force required in N

d= Diameter of the bar/bolt in mm

l = Bond length required

f<sub>b</sub>= Design bond stress between interface of anchor grout and bar

A factor of safety of 1.5 for non-critical applications and factor of safety of 2 for critical applications shall be considered.

## Properties

Gel Time Temperature (°C)	Gel Time (min)	Minimum Time required before loading (hours)
20	90	7
30	50	3
40	20	1

## Compressive Strength

After the minimum time required before loading the grout typically attains a compressive strength in excess of 20N/mm<sup>2</sup> @ 3 hours and an ultimate compressive strength of 70N/mm<sup>2</sup> in 7 days (50mm x 50mm x 50mm) when tested as per BS 6319 Part 2 : 1983.

## Chemical Resistance

The cured resin is resistant to fresh and salt water, petrol, oils, grease and most acids, alkali sand solvents.

## Instructions for Use

### Selection of Grout Version

The version of Maxgrout<sup>®</sup> PAF chosen will depend on anchor conditions. (See Description)

### Hole Preparation and Formation

Optimum performance of Maxgrout<sup>®</sup> PAF requires rough sided, dust free holes. Use of rotary percussive drills with air or water flushing is recommended. Diamond drilled holes should be under-reamed unless necessary safety factors are incorporated. Cast holes should preferably be inverse dovetail configuration. If parallel sides holes are cast they should be rough to provide adequate keying.

### Bar Preparation

All bars should preferably be degreased and all flaky rust removed.

### Mixing

A complete pack of resin and catalysed filler should be mixed in one operation. Mixing may be carried out mechanically. When a smooth, even consistency is achieved the grout is ready for use and should be placed well within the gel time of the grout (See Properties). Packs have been designed to produce practical and economic volumes of grout. Do not attempt to mix partial pack components.

### Installation

#### Maxgrout Polyester Resin Grout LA & VA

Using the calculated volume of grout based on Table 1, the grout should be poured steadily into the prepared holes. The anchor bar is then pressed into the hole to the required depth. Slight agitation of the bar will assist in achieving a complete bond. The bar should then be left undisturbed in the required position until the resin is set.

#### Maxgrout Polyester Resin Grout HA

The grout should be injected to the rear of the hole to avoid air entrapment. The thixotropic nature of Maxgrout HA will prevent significant flow of resin out of the hole.

## Cleaning

Any mixing drums, pumps, etc. should be cleaned within the pot life of the grout. Cleaning Sol is available for this purpose.

### Table 1

#### Quantity Estimating Guide

Table indicates volume of Maxgrout<sup>®</sup> PAF polyester resin grout in cm<sup>3</sup> /100mm bond.

Hole Diameter (mm)	Bolt Diameter (mm)					
	12	16	20	25	32	40
20	25					
25	50	40	25			
32	80	70	60	40		
38		100	100	75	45	
45		150	130	100	45	
50			180	150	90	
62				280		225

These figures allow for a 25% wastage factor. If the anchor is in very old concrete, masonry or brickwork the wastage factor should be increased.

### Health and Safety Instructions

Confined areas must be well ventilated and no naked flames allowed. Contact with the skin should be avoided as certain sensitive skins may be affected by contact with the polyester resin. In such cases if contact with the resin occurs, the skin shall be immediately washed with plenty of water and any eye contamination shall be washed with plenty of water and soap and medical advice sought. Gloves and barrier creams should be used when handling these products.

#### Fire

Maxgrout<sup>®</sup> PAF polyester resin grout resin is flammable. Confined areas must be well ventilated and no naked flames allowed. Do not smoke during use.

#### Flash Point

Maxgrout<sup>®</sup> PAF- 29°C  
Cleaning Solution- 33°C

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## Storage

The product should be stored away from high temperature. 6 months shelf life when stored below 25°C in original unopened containers.

## Precautions

### Fire Resistance and Creep

At operating temperatures above 40°C, the creep of this polyester resin grout resin under load may become significant. Resin anchors should not be used where structural load bearing performance has to be maintained in anchors subjected to fire conditions.

## Packing

**Maxgrout<sup>®</sup> PAF:** 0.5 and 2.5 Ltr Packs

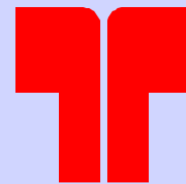
**Cleaning Solution:** 5.0 and 20 Ltrs

## Other Segments:

- Concrete Admixtures • Surface Treatments • Grouts & Anchors • Repair & Rehabilitation
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