

Capgrout® HP

High Strength, Non-Shrink Cementitious Construction Grout

Uses

Capgrout HP is an exceptionally high strength grout designed for grouting beneath bridge bearings, parapet posts and flanged lighting columns. It can also be used for wide range of fixings. These include:

- Machine beds and base plates.
- Stanchion bases, struts, railings, and guardrail assemblies.
- Filling distance between concrete walls or other sections.
- Filling of shutter tie rod openings.
- Anchoring of tie bars, and bolts.
- Pile top re-profiling.

Advantages

- Non-shrink
- High early and ultimate compressive strengths
- Good flow, particularly at low temperatures
- Low permeability ensures durability
- Can be poured or pumped

Standards compliance

Capgrout HP complies with ASTM C1107.

Description

Capgrout HP is a ready to use dry powder supplied in 25kg moisture resistant bags. Capgrout HP has been formulated specifically for grouting of bridge bearings and parapet post base plates.

The addition of a controlled amount of clean water produces a free-flowing grout with high early and ultimate strengths as well as long term durability, suitable for use in section thicknesses 10mm to 100mm. Thicker sections can be achieved by incorporating clean, dry 10mm aggregate.

Properties

Appearance	Gray Cementitious Powder	
Dry Specific gravity (gr/cm ³)	Approx. 1.72 @ 20°C	
Fresh Wet Specific gravity (gr/cm ³)	Approx. 2.02 @ 20°C	
Compressive strength (Mpa) (ASTM C109/109M-02)	1 Day	35
	7 Days	60
	28 Days	80
Flexural strength (Mpa) (BS6319, Part 3 : 1998)	1 Day	4
	7 Days	8.5
	28 Days	12
Time to Expansion	Start: 15 minutes Finish: 3 hours	
Total chloride ion content (as % of mass of cement)	< 1%	
Application temperature	4 - 50°C	
Service temperature	-20 - 200°C	

Instructions for use

Preparation:

- Concrete surface

The substrate surface must be free from oil, grease or any loosely adherent material. If the concrete surface is defective or has laitance, it must be cut back to a sound base. Bolt holes or fixing pockets must be blown clean of any dirt or debris.

- Pre-soaking

For a minimum of 2 hours prior to grouting, the area of cleaned substrate should be flooded with fresh water. Immediately before grouting takes place, any free water should be removed. Particular care should be taken to blow out all bolt holes and pockets.

- Base plate

It is essential that this is clean and free from oil, grease 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.

- Formwork

The formwork should be constructed to be leakproof. 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.

- 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 75 mm on the pouring side and 25 mm on the opposite side. It is advisable where practical to have no gap at the flank sides.

Mixing:

For best results a mechanically powered grout mixer should be used.

Consistency of mixed grout:

The quantity of clean water required to be added to a 25 kg bag to achieve the desired consistency is between 2.50 to 2.70 litres.

The selected water content should be accurately measured into the mixer. The total contents of the Capgrout HP bag should be slowly added and continuous mixing should take place for 5 minutes. This will ensure that the grout has a smooth even consistency.

Grouting:

Immediately prior to placement, the mixed grout should be briefly agitated to release any surface tension. Place the grout within 15 minutes of mixing to gain the full benefit of the expansion process. Capgrout HP can be placed in thicknesses 10mm to 100mm in a single pour. For thicker sections it will be necessary to fill out Capgrout HP with

Capgrout[®] HP

well graded silt free aggregate to minimize exotherm. Any bolt pockets must be grouted prior to grouting between the substrate and the base plate. Continuous grout flow during the grouting operation is essential. Sufficient grout must be available prior to starting and the time taken to pour a batch must be regulated to the time taken to prepare the next one. The mixed grout should be poured only from one side of the void to eliminate the entrapment of air or surplus pre soaking water. This is best achieved by pouring the grout across the shortest distance of travel. The grout head must be maintained at all times so that a continuous grout front is achieved.

Where large volumes have to be placed Capgrout HP may be pumped. A heavy duty diaphragm pump is recommended for this purpose. Screw feed and piston pumps may also be suitable.

Curing:

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

Cleaning:

Capgrout HP should be removed from tools and equipment with clean water immediately after use.

Packaging

Capgrout HP is available in 25 kg bags.

Storage

Capgrout HP has a minimum shelf life of 12 months at 20°C if kept in a dry store in the original, unopened packs. The shelf life will be reduced at higher ambient temperatures.

Precautions

Health and safety:

Capgrout HP 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 to eyes should be washed immediately with plenty of clean water and medical advice sought.

Fire:

Capgrout HP is non-flammable.