



Product Description

BCI-DynoGrout PG2 is a cement based non-metallic, non-shrink, dual expansion, free flow grout supplied as a dry powder. BCI-DynoGrout PG2 excellent flowability is the most versatile grout.

BCI-DynoGrout PG2 is a blend of Portland cement, graded fillers and chemical additives which impart controlled expansion in the plastic state whilst minimising water demand. The low water demand ensures high early strength. The graded fillers are designed to assist uniform mixing and produce a consistent grout.

Uses

BCI-DynoGrout PG2 is used for the installation of large and heavy machinery base plates, crane rails, stanchion base plates, bridge bearings, bolt baskets and all other areas requiring precision grouting. Can be used for filling precast joints and tie holes with adjustable consistency. Can be used for reinstating damaged structural elements by placing form work.

Advantages

- Ready to use, requires only addition of water
- Highly flowable and self levelling
- Able to fill, intricate voids
- Ensures highest, effective bearing area
- High strength. Good dimensional stability
- High strength ensure the durability of the hardened grout
- No bleeding or segregation
- Compensates for shrinkage in both plastic and hardened state

Technical Properties

Compressive strength (N/mm ²) : ASTM C109	
Age (days)	Consistency (W/P 0.16) Flowable
1	21
3	43
7	55
28	70
Flexural strength @ 28days (9.5 N/mm ²) W/P 0.16 (BS 4451)	
Tensile strength W/P - 0.16 (BS 6391)	5.1N/mm ² @ 28 days
Pullout strength	16.4 N/mm ² for 16mm dia rod on 150mm size cube
Flowability ASTM C939 @ 30°C	20 - 21.5cm @ 0.16 W/P
Time for expansion (After mixing)	Start : 20 minutes Finish : 120 minutes
Fresh wet density	Approximately 2220kg/m ³ Depending on actual Consistency used
Young's modulus (ASTM 469 - 94)	28 kN/mm ²
Dynamic load Resistance	Specimens of BCI-DynoGrout PG2 remained undamaged even after subjecting them to Alternate loads of 5N/mm ² & 25N/mm ² at the rate of 500 cycles/minute for two million cycles
Coefficient of thermal expansion 11 x 10 ⁻⁶ /°C	
Unrestrained expansion	2 - 4 % in the plastic state enables to overcome shrinkage
Pressure to restrain Plastic expansion	0.004 N/mm ² approx.
Flow characteristics : The maximum distance of flow is governed by the gap width and the head of the grout.	
Typical data for flow design assuming grout is poured immediately after mixing is given in the table below:	
Grout Max. flow distance in mm consistency Gap width 50mm 100mm 250mm	
	(mm) Head Head Head
Flowable	30 350 1000 1500
	40 500 1500 2000
	50 900 2000 3000+

Note: This table is based on the following factors temperature 30°C; Water saturated substrate. Minimum unrestricted flow width is 300mm.



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Free Flow, High Strength, Non-Shrink,
Cementitious Precision Grout

Specification Clauses

Performance specification

All grouting shown on the drawing 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.

Typical detail of stanchion base plate

The compressive strength of the grout must exceed 50 N/mm² at 7days and 70 N/mm² at 28 days.

The flexural strength of grout must exceed 8N/mm² @ 28 days. The fresh wet density of the mixed grout must exceed 2300 kg/m³

Application Instructions

Foundation 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 and fixing pockets must be blown clean of any dirt or debris.

Pre-soaking

Several 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 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.

Levelling 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 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

For best results a mechanically powered grout mixer should be used. When quantities up to 50kg are used, a heavy duty slow speed drill (400-500 rpm) fitted with a paddle is suitable. Larger quantities will require a heavy duty mixer. 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.

Consistency of grout mix

The quantity of clean water required to be added per bag to achieve the desired consistency is given below :

Pourable : 4.0 Litre water for 25kg
4.8 Litre water for 30kg

For enhanced flowable properties in higher temperature conditions, additional water of 100-125ml/bag is recommended.

The selected water content should be accurately measured into the mixer. The total content of the BCI-DynoGrout PG2 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.

Placing

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

BCI-DynoGrout PG2 can be placed in thickness's up to 100mm in a single pour when used as an underplate grout. For thicker sections it is necessary to fill out BCI-DynoGrout PG2 with well graded silt free aggregate to minimise heat build up. Typically a 10mm aggregate is suitable. 50-100% Aggregate weight of BCI-DynoGrout PG2 can be added.

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.



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Packaging

BCI-DynoGrout PG2 is supplied in 25 & 30kg moisture resistant bags

Yield : 13Litre in 25kg Bag @ 0.16 W/P ratio

Hopper System

Removable hopper: For large pours the grout may be hand placed or pumped into a removable hopper (trough) Pouring should be from one side of the void to eliminate any air or presoaked water becoming trapped under the base plate. It is advisable to pour 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 BCI-DynoGrout PG2 may be pumped. A heavy duty diaphragm pump is recommended for this purpose. Screw feed and piston pumps may also be suitable.

Restraint

The shoulder area of the base plate if exceeds 150mm, the surface area of the exposed grout shall be restrained with counterweight to restrain expansion and avoid cracks.

Curing

On completion of the grouting operation, exposed areas should be thoroughly cured. This should be done by the use of BCI-CureCrete WB curing membrane, continuous application of water and/or wet hessian. On the shoulders of the grouting, dry aggregates are spread on the hardened grout for restraint to avoid cracks.

Shelf Life

BCI-DynoGrout PG2 has a shelf life of 9 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity locations, the shelf life may be reduced.

Health & Safety

BCI-DynoGrout PG2 is alkaline and should not come into contact with skin and eyes. Inhalation of dust during mixing should be avoided. Gloves, goggles and dust mask should be worn. If contact with skin occurs, it shall be washed with water. Splashes to eyes should be washed immediately with plenty of clean water and medical advice sought.

Fire

BCI-DynoGrout PG2 is non flammable

BCI ADDITIVES INDIA LLP.

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