CCI NEOGROUT ST

Free flow, High strength, Non-shrink, Cementitious Precision Grout

Description

CCI Neogrout ST 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 gap thicknesses up to 100 mm.

CCI Neogrout ST 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

CCI Neogrout ST is used for precision grouting where it is essential to withstand static and dynamic loads. Typical applications would be the grouting of base plates of turbines, compressors, boiler feed pumps, etc. It can also be used for anchoring a wide range of fixings. These include masts, anchor bolts and fence posts.

Advantages

- ✓ Gaseous expansion system compensates for shrinkage and settlement in the plastic state
- ✓ No metallic iron content to cause staining
- ✓ Pre-packed material overcomes onsite batching variations
- ✓ Develops high early strength without the use of chlorides
- ✓ High ultimate strength ensures the durability of the hardened grout
- ✓ Free flow ensures high level of contact with load bearing area

Technical support

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

Properties

Compressive strength: (BS 1881 - Part 116:1983)

	Compressive strength (N/mm²)	
Ages (days)	**Consistency**	
	Flowable (W/P 0.18)	**Pourable (W/P 0.165)**
1	24	27
3	45	54
7	55	66
28	65	78

Compressive strength with addition of aggregates

Age (days)	**Compressive strength (N/mm²) W/P 0.18% of aggregates (IS 516:1959)**
	50%
1	28
3	50
7	60
28	70

Flexural strength (BS 4551, 1998)

Age (days)	**Flexural strength (N/mm²) W/P 0.18**
1	2.5
3	7.0
7	9.0
28	10.0

Time for expansion	Start: 20 minutes
(After mixing)	Finish: 120 minutes
Fresh wet density	Approximately 2220 kg/m³ depending on actual consistency used
Young's modulus (ASTM D469-94)	28 kN/mm²
Dynamic load resistance	Specimens of **CCI Neogrout ST** remained undamaged even after subjecting them to alternate loads of 5 N/mm² and 25 N/mm² at the rate of 500 cycles per minute for two million cycles.
Unrestrained expansion	2% to 4% in the plastic state enables to overcome shrinkage

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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 Consistency	Gap width (mm)	Maximum flow distance (mm)		
		50 mm head	100 mm head	250 mm head
Flowable	30	350	1000	1500
	40	500	1500	2000
	50	900	2000	3000+

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

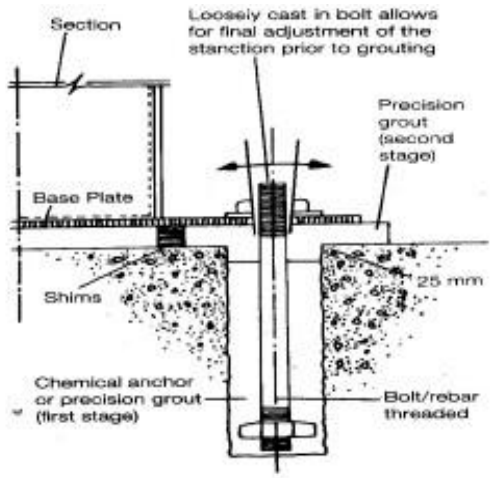
Specification clauses
Performance specification

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/mm^2 at 7 days and 60 N/mm^2 at 28 days.

The flexural strength of grout must exceed 9 N/mm^2 at 28 days. The fresh wet density of the mixed grout must exceed 2150 kg/m^3.

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

Application Instructions
Preparation

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 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 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.

Mixing and placing
Mixing

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

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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 to a 25 kg bag to achieve the desired consistency is given below:

Pourable	12.5 L
Flowable	13.3 L

The selected water content should be accurately measured in the mixer. The total content of the **CCI Neogrout ST** 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 30ºC, place the grout within 20 minutes of mixing to gain full benefit of the expansion process.

CCI Neogrout ST can be placed in thicknesses upto 100 mm in a single pour when used as an underplate grout.

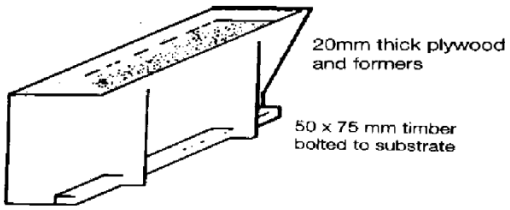
For thicker sections it is necessary to fill out **CCI Neogrout ST** with well graded slit free aggregate to minimise heat buildup. Typically, a 10 mm aggregate is suitable. 50% to 100% aggregate by weight of **CCI Neogrout ST** can be added.

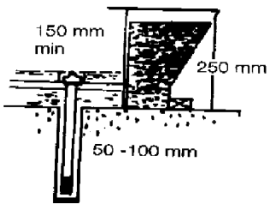
Any bolt pockets must be grouted prior to grouting between the substrate and the base plate.

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.

Typical 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 pre-soaked water becoming trapped under the base plate. It is advisable to pour the grout across the shortest distance of travel. The grout head must always be maintained so that a continuous grout front is achieved.

Where large volumes have to be placed, **CCI Neogrout ST** 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 using Novacure WB curing membrane, continuous application of water and/or wet hessian.

Limitations

Low temperature working

When the air or contact surface temperatures are 10˚C or below on a failing thermometer, warm water (30˚C to 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 40ºC, cool water (below 20ºC) should be used for mixing the grout to placement.

Estimating

Packing

CCI Neogrout ST is supplied in 25 kg moisture resistant bags.

Yield

Allowance should be made for wastage when estimating quantities required. The approximate yield per 25 kg bag for different consistency is as follows:

Consistency	Pourable	Flowable
Yield (L)	12.5	13.3

Storage & Shelf life

CCI Neogrout ST has a shelf life of 6 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.

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Precautions

Health & Safety Instructions

CCI Neogrout ST is alkaline and should not come into contact with skin and eyes. Inhalation of dust during mixing should be avoided.

Gloves, goggles, and dust masks 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.

Before use, refer to the Material Safety Data Sheet (MSDS). The MSDS is available on www.ccichemicals.in or contact us at info@ccichemcials.in.

Fire

CCI Neogrout ST is nonflammable.

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