



6.03 XPERT GROUT

GENERAL PURPOSE NON-SHRINK CEMENTITIOUS GROUT

PRODUCT DESCRIPTION

XPERT Grout is supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a flowing no shrink grout for gap thicknesses up to 100mm. XPERT Grout is a blend of Portland cement, graded fillers and chemical additives which impart controlled expansion in the plastic state whilst minimizing water demand. The low water demand ensures high early strength. The graded filler is designed to assist uniform mixing and produce a consistent grout.

USES AND ADVANTAGES

- XPERT Grout is used for general purpose grouting where it is essential to eliminate shrinkage when completely filling the void between a base plate and a substrate. Such an application would be the grouting of a stanchion base plate.
- It can also be used for anchoring a wide range of fixings. These include masts, anchor bolts and fence posts.
- Gaseous expansion system compensates for shrinkage and settlement in the plastic state. No metallic iron content to cause staining.
- Prepackaged material overcomes potential on-site batching variations. Develops high early strength without the use of chlorides High ultimate strength and low permeability ensure the durability of the hardened grout.

Packaging: XPERT Grout is supplied in 25kg moisture resistant bags.

Storage: XPERT Grout has a shelf life of 12 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.

PROPERTIES

The following properties were obtained at water: powder ratio of 0.20 and temperature of 20C

PRECAUTIONS

XPERT Grout contain cement powders which, when mixed or become damp, release alkalis which can be harmful to the skin. During use, avoid inhalation of dust and contact with skin and eyes.

TYPICAL PROPERTIES

CATEGORY	PARAMETERS
Compressive strength	1 day @ 25MPa 7 days @ 45 MPa 28 days @ 66 MPa
Flexural Strength	1 day @ 2.5 MPa 7 days @ 10.0 MPa 28 days @ 11.0 MPa
Time for expansion	Start: 5 minutes Finish: 2 hours Density Approx. 2160 kg/m3 consistency used
Young's Modulus	25 GPa Expansion An expansion of up to characteristics 1% overcomes plastic settlement in plastic material.
Setting Times	Initial: 165 minutes Final: 270 minutes

APPLICATION INSTRUCTIONS

Surface Preparation: 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: Several hours prior to grouting, the area of cleaned foundation should be flooded 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 grease, oil or scale. Air 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 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 contain outlets for presoaking.

Unrestrained Surface Area: This must be kept to a minimum. Generally, the gap width between the formwork and the plate edge should not exceed 150mm on the pouring side and 50mm on the opposite side. It is advisable 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 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. 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.

Consistency of mixed grout: The quantity of clean water required to be added to a 25kg bag to achieve the desired consistency is given below.

- Trowel able 3.5 – 3.8 liters
- Flow able 4.0 – 4.5 liters

The selected water content should be accurately measured into the mixer. The total contents of the XPERT Grout 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 20oC, place the grout within 20 minutes of mixing to gain the full benefit of the expansion process. XPERT Grout can be placed in thicknesses up to 100mm in a single pour when used as an under-plate grout. For thicker sections it is necessary to fill out XPERT Grout with well graded silt free aggregate to minimize heat buildup.

Typically, a 10mm aggregate is suitable. 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 of grout must be regulated to the time to prepare the next one. Pouring should be from one side of the void to eliminate any air or presoaking water from being 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, XPERT Grout may be pumped.

Curing: On completion of the grouting operation, exposed areas should be thoroughly cured.

LIMITATIONS

Low temperature working: When the air or contact surface, temperatures are 5oC or below on a falling thermometer, warm water (30-40oC) is recommended to accelerate strength development. For ambient temperatures below 10oC the formwork should be kept in place for at least 36 hours.

High temperature working: At ambient temperatures above 35oC cool water (below 20oC) should be used for mixing the grout prior to placement. Store bags of XPERT Grout under cover and keep as cool as possible.