CONSTRUCTION CHEMICALS

X-Crete C70

A non-shrink C Class cement based grout

Packaging

Mixing

Application

Uses

Substrates

Concrete
Brick, Block
Cement render

Description

A non-shrink cement based grout with a unique shrinkage compensation mechanism. It is non-corrosive, non-gaseous, has high density, flexural and compressive strength. It is blended with shrinkage reducers, water reducers and plasticising agents that work in the plastic and hardened state.

Uses

A precision grout for use where high strengths are required, i.e. interior and exterior applications, machinery bases, grouting under precast and steel columns, precast beams and panels etc. Anchoring of quad rails, posts, anchor bolts, dowels and bridge bearing pads etc.

Features

- Use in interior and exterior applications
- Has high flexural and compressive strength
- Ideal anchoring and patching grout
- Easily mixed and placed by pouring or pumping
- Resists most oils, gasoline, water, solvent and alkalis
- Extendable for thicker application
- Non-metallic and will not rust
- Good impact and thermal resistance

Coverage (Approximate)

For each cubic metre of grout required allow approximately 100 x 20kg bags.

Performance Data

X-Crete C70 is mixed with clean, potable water as required for ease of placement.

Pot Life		(hrs:mins) @ 25°C
Flowable	3.7L	1:30
Plastic	2.7L	0:30

Pot life will increase at lower temperature and decrease at higher temperature.

Compression Strength

(50.8mm cube restrained) (ASTM C109) @ 25°C

	MPa	**MPa**
1 day	35	47
7 days	54	64
28 days	63	78

Expansion

Tested in accordance to ASTM C1090-10. Strengths are average values in laboratory conditions. Site conditions may vary due to the environment and curing and test conditions.

Specification

The non-shrink grout will be a non-metallic grout and shall have a minimum compression strength of 70MPa such as **X-Crete C70** manufactured by **Construction Chemicals** and shall be applied in accordance with the manufacturer's instructions.

Surface Preparation

All surface laitance and unsound concrete must be mechanically roughened or chipped away so that a reasonably rough, but strong, sound surface is provided. All surfaces must be free from oil, grease, dust, solvent and any other contaminants, this particularly applies to the underside of bed plates, bolts, pipes or other materials which may have surface contact with the grout. After cleaning, saturate the concrete surface with clean water for several hours prior to grouting and ensure that no freestanding water is present on the surface or in bolt holes before grouting.

Mixing

X-Crete C70 must be mechanically mixed using a grout mixer or suitable drum mixer.

Do not mix by hand.

Add 20kg of powder to 75% of the water required while mixing to achieve a uniform, thick mix then add the remaining water. Mix for 3-5 minutes to a uniform, homogeneous consistency. Allow to stand to enable trapped air to escape.

Use as little water as possible for ease of placement, i.e:

A **flowable grout** mix 3.7L of water with 20kg
A **plastic grout** mix 2.7L of water with 20kg

Job conditions, including temperatures, may require adjustments as may be essential for practical purposes. A small trial batch to ascertain the best working consistency for the operation is recommended.

Application

The grout should be placed within 30 minutes of mixing. During that time, keep the mix well agitated and discard grout that shows signs of stiffening.

Formwork to contain grout must not leak and be designed so that it is above the underside of the base plate. Coat formwork with release agent. Ensure that air holes are provided.

Flowable grout can be placed with low pressure grout equipment by experienced, trained technicians or may be hand rodded into restrained sections. High points must be adequately vented to allow entrapped air to escape.

Plastic grout may be rodded into place or trowelled where freedom of movement permits. Consistency can range from a thick paste to a smooth plastic mix.

Pumping - Ensure the pump is suitable for the grout consistency and the height and distance to be pumped. A positive displacement pump is recommended.

Aggregate - Add aggregate to increase the grout application thickness and to increase the compression strength. Aggregate 10mm is recommended or not more than 20% of the section to be formed for thicknesses over 50mm. Smooth, rounded aggregate is recommended to achieve the best flow. A 20kg aggregate to 20kg bag is the maximum recommended addition.

Placement - The grout must be placed in a continuous mix and to achieve this there must be sufficient labour, grout and mixing equipment to complete the pour. Pour the grout over a short distance to avoid entrapped air. Maintain the grout head to ensure a continuous flow. Rod or tamp the grout into position. Do not vibrate as it will cause segregation.

Placement thickness

- Minimum thickness 10mm
- Maximum thickness 100mm
- Recommended application thickness in one pour 20mm - 50mm
- Thickness over 100mm should be done in 100mm stages and have aggregate added to reduce heat generation in the grout.

Curing

Curing must commence immediately after placement and continue for 7 days. Curing is vital to achieve maximum strength and can be done by plastic sheet or wet hessian. Protect the grout from the drying effects of the sun and wind.

Application temperatures

10°C - 30°C
Beneath 10°C set time increases
Above 30°C set time reduces

In high temperature use cool water for mixing, shelter from heat and conduct work in the cool of the morning. In low temperatures do the reverse i.e. use warm water and work in the warmth of the day.

Cleaning

Clean mixing and placing equipment with water immediately after use. Hardened material can only be removed mechanically.

Precautions

- Minimum application thickness 10mm
- Do not add too much water or apply in high temperatures
- Prevent rapid loss of water from the grout by curing for the first 48 hours
- Never apply to a dry substrate
- Discard unworkable grout

Storage

Store in dry conditions, off the ground, in unopened, original packaging.

Handling Precautions

- Avoid contact with skin and eyes
- Wear protective clothing and eye protection
- Wash skin thoroughly if contact occurs

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