

PCE BASED SUPER-PLASTICIZER FOR PRECAST CONCRETE BRICKS AND BLOCKS

Description

NIROCAST BLOCKTECH is a superplasticisers based on new generation polycarboxylic ether polymers, developed using special polymer-technology. which is the ultimate solution to produce high early age strength precast concrete **bricks and small blocks**.

It makes concrete more impermeable and durable, as it has high water reduction power.

Uses

- ✓ NIROCAST BLOCKTECH is suitable for making precast concrete bricks and blocks like Hollow core slabs Block, building blocks, paver blocks, bricks etc. It can also be used for making Cement Tiles, Kerb stones, Edgings, other items for garden, landscape design etc.
- ✓ Concrete requiring high early strength without steam curing
- ✓ Concreting in cold weather
- ✓ Mixes requiring >12% water reductions

Advantages

- ✓ Achieve high early strengths
- ✓ Early de-shuttering will result in increased productivity/ reduction in cycle time - save on energy costs
- ✓ Optimize curing cycles by reducing curing time or curing temperatures
- ✓ Improve surface appearance
- ✓ Reduces the risk of segregation, thus making the Concrete more cohesive, pumpable and flowable.
- ✓ Minimizes damage due to early handling
- ✓ Better resistance to carbonation / efflorescence
- ✓ Lower permeability
- ✓ Reduced shrinkage and creep
- ✓ Increased durability

Reaction Mechanisms

NIROCAST BLOCKTECH has a different chemical structure from the traditional superplasticisers. It is a unique combination of the latest generation superplasticisers, based on a polycarboxylic ether polymer with long lateral chains. This greatly improves cement dispersion. At the beginning of the mixing process, it initiates the same electrostatic dispersion mechanism as the traditional superplasticisers, but the side chains linked to the polymer backbone generates a steric hindrance

which greatly stabilizes the cement particles' ability to separate and disperse.

NIROCAST BLOCKTECH considerably reduces the water demand, as it having both the Electrostatic repulsion and Steric hindrance.

Characteristics

Form	: Liquid
Colour	: Brownish
Relative Density	: 1.05 ± 0.02 at 25°C
pH	: Min. 6
Chloride ion content	: Nil (As per BS 5075 Part I)

Standard Compliance

NIROCAST BLOCKTECH complies with BS:5075 and ASTM-C-494 Type 'F'.

Dosage

Optimum dosage of NIROCAST BLOCKTECH should be determined by site trials only using the materials and conditions that will be experienced in use.

However, as a guide, a dosage range of 0.2 to 2.5% on cementitious material is recommended.

Dosages outside of the recommended range may be required. In such cases, contact our local representative.

Effects of under and overdosing

Under dosages may cause lack of workability and over dosage may cause bleeding & segregation and increase in air entrainment.

Direction for use

NIROCAST BLOCKTECH is a ready-to-use liquid admixture. For maximum dispersion throughout the mix, measured quantity of NIROCAST BLOCKTECH should be added into the mixer at the same time as the mixing water. The plasticizing effect and water reduction will be higher when the admixture will be added to the damp concrete by adding 60 to 80% of the mixing water in it.

The addition of NIROCAST BLOCKTECH to dry aggregate or cement is not recommended.

To impart higher workability to concrete at site using ready mix trucks, it can be added to the concrete via the feed hopper at the rear of the truck. Mix before discharge for 5 minutes at 10 rpm to produce a fully homogenous mix.

Technical support

NIRMAN CHEMICALS provides technical advisory services for on-site assistance and guidance on mix design, optimum dosage evaluation of trials.

Compatibility

NIROCAST BLOCKTECH can be used with all types of cements except high alumina cement. It is compatible with ligno- sulphonates and carboxylic acid based plasticiser and retarders and also with most type of air entrainers, accelerators, viscosity modifying agent, extended set-control admixtures, corrosion inhibitors, and shrinkage reducers. Site trials should be carried out to optimize dosages.

It is not compatible with Melamine or Naphthalene based admixtures and should not be used in conjunction in the same mix

Durability

Reduction in W/C ratio enables increase in density and impermeability thus enhancing durability of concrete.

Corrosion

It neither initiates nor promotes corrosion as it does not content any harmful chemicals. Rather it reduces the risk of corrosion of reinforcement or other embedment, as it has high water reduction power to produce a dense impermeable concrete.

Packaging

NIROCAST BLOCKTECH is supplied in 20 kg, 225 kg drums or in bulk on request.

Storage and Shelf life

NIROCAST BLOCKTECH must be stored where temperatures do not drop below +5°C. If product has frozen, thaw at +5°C or above and completely reconstitute using mild mechanical agitation. Do not use pressurized air for agitation. Store under cover, out of direct sunlight and protect from extremes of temperature.

Shelf life is 12 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.

For specific storage advice consult our local NIRMAN CHEMICALS representative.

Safety precautions

NIROCAST BLOCKTECH does not fall into the hazard classifications. However, it should not be swallowed or allowed to come into contact with the skin and eyes. Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with the eyes it shall be rinsed immediately with plenty of water and medical advice sought immediately. If swallowed, medical attention shall be sought immediately - Vomiting should not be induced.

Fire

NIROCAST BLOCKTECH is water based and non-flammable.

Cleaning of Tools

Clean all tools and application equipment with water immediately

Note

All Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

Field services where provided, does not constitute supervisory responsibility, for additional information contact our local NIRMAN CHEMICALS representative.

Disclaimer

Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendations made by us, our representatives or distributors, as the conditions of use and the competence of any labor involved in the application are beyond our control.