



**AKARSH SPECIALITIES**

HIGH PERFORMANCE CONSTRUCTION CHEMICALS

Proven UK Technology



ISO 9001:2008 Reg. No: 861319



045

## VARAPLAST PC 432

### AN ULTRA HIGH PERFORMANCE SUPERPLASTICISER BASED ON MODIFIED POLYCARBOXYLIC ETHER

#### DESCRIPTION

VARAPLAST PC 432 has been primarily developed for applications in the ready mixed concrete industries where the highest durability and performance is required.

Super plasticizing action of VARAPLAST PC 432 is different than conventional super plasticizers based on sulfonated melamine and naphthalene formaldehyde condensate, which create electrostatic repulsion of particles. VARAPLAST PC 432 initially create the same electrostatic repulsion and further stabilizes the mixes due to static repulsion of long lateral chains linked to the polymer backbone.

#### USES

The excellent dispersion properties of VARAPLAST PC 432 make it the ideal admixture for ready mixed concrete where low water cement ratios are required. This property allows the production of very high ultimate strength concrete with minimal voids and therefore optimum density. VARAPLAST PC 432 is recommended for concrete grades M 40 and above. The use of VARAPLAST PC 432 gives a combination of excellent initial workability and workability retention over a long period in cementitious rich compositions like M-100 concrete.

#### ADVANTAGES

##### During mixing and placement

- ◆ High workability without segregation or bleeding
- ◆ Less vibration required

- ◆ Can be placed and compacted in congested reinforcement
- ◆ Reduced labour requirement
- ◆ Improved surface finish
- ◆ Chloride free

##### Effect on hardened concrete properties

- ◆ Increased ultimate compressive strengths
- ◆ Increased flexural strength
- ◆ Higher E modulus
- ◆ Improved adhesion to reinforcing and stressing steel
- ◆ Better resistance to carbonation
- ◆ Lower permeability
- ◆ Better resistance to aggressive atmospheric conditions
- ◆ Reduced shrinkage and creep
- ◆ Increased durability

#### STANDARDS

VARAPLAST PC 432 is free from chlorides and complies with ASTM C494 Type G.

#### TYPICAL PROPERTIES

Calcium chloride Content: Nil

Specific gravity: 1.08 at 30 °C

Air entrainment: Less than 1% additional air is Entrained.

Setting time: 1 - 4 hours retardation depending on dosage and climatic conditions.

Chloride content: Nil to BS 5075

## COMPATIBILITY

**VARAPLAST PC 432** is compatible with all Portland cements that meet recognized international standards.

**VARAPLAST PC 432** must not be used in conjunction with any other admixture unless prior approval is received from the **AKARSH** Technical Department.

**VARAPLAST PC 432** is suitable for mixes containing:

- Microsilica
- Pulverised fuel ash
- Ground granulated blast furnace slag cement

## INSTRUCTIONS FOR USE

**VARAPLAST PC 432** is a ready to use admixture that is added to the concrete at the time of batching.

The maximum effect is achieved when the **VARAPLAST PC 432** is added after the addition of 50 % to 70 % of the water.

**VARAPLAST PC 432** must not be added to the dry materials.

Thorough mixing is essential and a minimum mixing cycle, after the addition of the **VARAPLAST PC 432**, of 60 seconds for forced action mixers is recommended.

**Dosage:** The normal dosage for **VARAPLAST PC 432** is between 0.5 and 1.60 kg per 100 kg of cement (cementitious material).

Dosages outside this range are permissible subject to trial mixes.

## TECHNICAL SUPPORT

'**AKARSH**' provides technical support service on mix design, admixture selection, evaluation of trials, dispensing equipment etc. Please contact the Technical Department in these cases.

**Curing:** As with all structural concrete, normal curing methods apply.

**Cleaning:** Spillages of **VARAPLAST PC 432** can be removed with water.

## PACKAGING

**VARAPLAST PC 432** is available in 220 kg drums.

## STORAGE

**VARAPLAST PC 432** should be protected from extremes of temperature. Should the material become frozen, it must be completely thawed and thoroughly mixed before use. **VARAPLAST PC 432** has a minimum shelf life of 12 months provided temperature is kept within the range 5 ° C to 30 ° C.

## PRECAUTIONS

### HEALTH & SAFETY

**VARAPLAST PC 432** is non-toxic. Any splashes to the skin should be washed immediately with water. Splashes to the eyes should be washed immediately with water and medical advice should be sought.

**Fire:** **VARAPLAST PC 432** is non flammable.