



**AKARSH SPECIALITIES**

HIGH PERFORMANCE CONSTRUCTION CHEMICALS

Proven UK Technology



ISO 9001: 2008 Reg. No: 661319

## VARAPLAST MC 547

### A HIGH PERFORMANCE SUPERPLASTICISER BASED ON MODIFIED POLYCARBOXYLIC ETHER

#### DESCRIPTION

**VARAPLAST MC 547** 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 MC 547** is different than conventional super plasticizers based on sulfonated melamine and naphthalene formaldehyde condensate, which create electrostatic repulsion of particles. **VARAPLAST MC 547** initially create the same electrostatic repulsion and further stabilizers the mixes due to static repulsion of long lateral chains linked to the polymer backbone.

#### USES

The excellent dispersion properties of **VARAPLAST MC 547** 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. The use of **VARAPLAST MC 547** gives a combination of excellent initial workability and workability retention.

#### 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 MC 547** is free from chlorides and complies with **ASTM C494 Type G**.

#### TYPICAL PROPERTIES

**Calcium chloride Content:** Nil

**Specific gravity:** 1.09 at 30 °C

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

**Chloride content:** Nil to **BS 5075**

## COMPATIBILITY

**VARAPLAST MC 547** is compatible with all Portland cements that meet recognized international standards.

**VARAPLAST MC 547** must not be used in conjunction with any other admixture unless prior approval is received from the **AKARSH** Technical Department.

**VARAPLAST MC 547** is suitable for mixes containing:

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

## INSTRUCTIONS FOR USE

**VARAPLAST MC 547** 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 MC 547** is added after the addition of 50 % to 70 % of the water.

**VARAPLAST MC 547** must not be added to the dry materials.

Thorough mixing is essential and a minimum mixing cycle, after the addition of the **VARAPLAST MC 547**, of 60 seconds for forced action mixers is recommended.

**Dosage:** The normal dosage for **VARAPLAST MC 547** is between 0.3 and 1.90 kg per 100 kg of cement (cementitious material) and should be optimised by trial mixes prior to use.

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 MC 547** can be removed with water.

## PACKAGING

**VARAPLAST MC 547** is available in 220 kg drums.

## STORAGE

**VARAPLAST MC 547** should be protected from extremes of temperature. Should the material become frozen, it must be completely thawed and thoroughly mixed before use. **VARAPLAST MC 547** has a minimum shelf life of 12 months provided temperature is kept within the range 5° C to 30° C.

## PRECAUTIONS

### HEALTH & SAFETY

**VARAPLAST MC 547** 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 MC 547** is non flammable.