

## Technical Data Sheet

### CASTECH 2020

Revision Date : 16/12/2020

### High performance polycarboxylic technology based superplasticizers

Type G Admixture (ASTM C494/C494M – 04 and BS5075:1)

#### 1.0 Description

CASTECH 2020 is a developed product based on PP-8000, specially designed for building materials in Sri Lanka which is differentiated from conventional superplasticizers. It is based on a unique carboxylic ether polymer with long lateral chains. This greatly improves cement dispersion. At the start of the mixing process, an electrostatic dispersion occurs but the presence of the lateral chains, linked to the polymer backbone, generate a steric hindrance which stabilizes the cement particle's capacity to separate and disperse. This mechanism considerably reduces the water demand in concrete.

CASTECH 2020 combines the properties of water reduction and workability retention. It allows the production of high performance concrete and/or concrete with high workability.

CASTECH 2020 is a particularly strong hyper-plasticizer allowing production of consistent concrete properties around the required dosage.

#### 2.0 Uses

- Ultra strength concrete
- Self compacting concrete
- High performance concrete
- Ready-mix concrete
- Concrete requiring long workability retention

#### 3.0 Advantages

- Significantly increased early and ultimate compressive strengths.
- Increased flexural strength.
- Improved adhesion to reinforcing and stressing steel.
- Improved resistance to carbonation.
- Lower permeability.
- Increased resistance to aggressive atmospheric conditions.
- Reduced shrinkage and creep.
- Increased durability.

#### 4.0 Properties

- |   |                             |
|---|-----------------------------|
| ● Appearance                            | Light Yellow viscous liquid |
| ● Specific gravity (g/cm <sup>3</sup> ) | 1.09 ± 0.02 at 25 °C        |
| ● pH value                              | 5.0 ± 1                     |
| ● Chloride/Alkali content (%)           | Free (As per BS EN 480-10)  |

#### 5.0 Typical dosage

The optimum dosage of CASTECH 2020 to meet specific requirements should always be determined by trials using the materials and conditions that will be experienced in use. The normal dosage range is between 0.5 to 2 liters/100 kg of cementitious material.

#### 6.0 Use at other dosages

Dosages outside the normal range quoted above can be used to meet particular mix requirements.

Please contact Castech Technical Service Department for advice in these cases.

## **7.0 Instructions for use**

### **7.1 Compatibility**

CASTECH 2020 should not be used in conjunction with any other admixture unless prior approval is obtained from local Castech office.

CASTECH 2020 is suitable for use with all types of Portland cements and cement replacement materials such as PFA, GGBFS, and SRC and micro-silica.

### **7.2 Mixing**

When used at the mixing plant, CASTECH 2020 should be added in the mixing water.

In some instances, e.g. addition to ready mix concrete on site, CASTECH 2020 can be added directly in the truck mixer and mixed at maximum speed for an extra 5 minutes.

### **7.3 Dispensing**

The correct quantity of CASTECH 2020 should be measured by means of a recommended dispenser. The admixture should then be added to the concrete with the mixing water to obtain the best results. Contact Castech office for advice regarding suitable equipment and its installation.

## **8.0 Packaging**

CASTECH 2020 is available in 200 liter drums and 1000 liter tanks.

## **9.0 Storage**

CASTECH 2020 has a minimum shelf life of 12 months provided the temperature is kept within the range of 2°C to 50°C. Please contact Castech office for advice if the temperature of the product falls outside this range.

## **10.0 Precautions**

### **10.1 Health and Safety**

- a) CASTECH 2020 does not fall into the hazard classifications of current regulations. However, it should not be swallowed or allowed to come into contact with skin and eyes.
- b) Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. If swallowed seek medical attention immediately - Do not induce vomiting.
- c) For further information consult the Material Safety Data sheet available for this product.

### **10.2 Fire**

CASTECH 2020 is water based and non-flammable.

### **10.3 Cleaning and disposal**

Spillages of CASTECH 2020 should be absorbed onto sand, earth or vermiculite and transferred to suitable containers. Remnants should be hosed down with large quantities of water.

The disposal of excess or waste material should be carried out in accordance with local legislation under the guidance of the local waste regulatory authority.

## **10.0 Technical support**

CasTech offers full technical support package to specifiers, contractors and end users, as well as technical assistance on site and after sales constructions.

CasTech provides detailed method statements on all its products for use in various applications. These must be referred prior to starting the work. The information above is summery intended for guidance only.

The information contained herein is to the best of our knowledge, belief and accuracy. However, hence the conditions of handling and usage are beyond our control. We make no warrantee of results and assume no responsibility or liability for any damages or consequential damage incurred by the use of the product. Our products are sold on the condition that the user shall evaluate them as well as our recommendations. To determine their suitability for a particular purpose the user is solely responsible for the selection of CasTech products.