

TECHNICAL DATA GUIDE- CONCRETE ADMIXTURE

CFLOW™ 251

High Range Retarding Superplasticizer for Concrete

DESCRIPTION

CFLOW™ 251 is a PCE (Poly Carboxylic Ether) based high range super plasticizer (Retarding Type), formulated to offer water reduction up to 35% in concrete mixes while maintaining a constant workability.

The resultant effect of the reduced water content is increased strength & enhanced durability of concrete. This makes concrete economical & environment friendly, as less cement is consumed.

CFLOW™ 251 confirms to performance requirements of BIS 9103, Type 'A', 'F' & 'G' of ASTM C 494 & EN934 part2.

TYPICAL APPLICATIONS

- For use in ready-mix, PQC, pumped concrete, mass concrete pours.
- For grades up to M 70, semi-flowing concrete & congested / complex reinforced sections.
- Combinations of OPC/double/triple/ternary blend mixes with GGBS/ fly ash/ silica fume/ metakaolin & other performance enhancers.
- For use in river sand/ manufactured sand/ CRF combinations.
- Concretes with long hauls.

FEATURES & BENEFITS

- Aids cohesion, enhances concrete rheology & eases pumping of concrete.
- Offers excellent water reduction in mixes, coupled with good slump retention to aid placement.
- Reduced Shrinkage cracks in hot climates
- Reduced water permeability, improved durability, higher ultimate strength due to low w/c ratio & increased compressive strength.
- Works effectively in high ambient temperature & arid climate conditions.

PERFORMANCE TEST DATA

Appearance	Brown free flowing liquid
Relative density	1.11 ± 0.02 @25°C
Chloride ion content	<0.2%
pH	≥6

MECHANISM OF ACTION

CFLOW™ 251 works as a dispersant by preventing the flocculation of fine particles of cement. These dispersants are basically surface-active chemicals consisting of molecules having hydrophilic group attached to a hydrophobic organic chain.

The polar group in the chain gets adsorbed on the surface of the cement grains. The hydrophilic tip can reduce the surface tension of water and the adsorbed polymer keeps the cement particles apart by electrostatic repulsion. The lateral side chains linked to the polymer backbone generates steric hindrance enhancing slump retention.

With the progress of hydration, the electrostatic charge diminishes and flocculation of hydrating product occurs. This intrinsic behaviour of PCE admixtures offers no delayed retardation even with prolonged slump life when compared to SNF products.

DOSAGE & DIRECTIONS FOR USE

Optimum dosage rates of CFLOW™ 251 vary between 0.2% - 1.2 % by weight of cementitious materials. Exact dosage rate depends on

- Quality & quantity of binders & W/C ratio
- Gradation of fine aggregates
- Ambient temperature

The correct quantity of CFLOW™ 251 should be measured by means of a recommended dispenser and should preferably dispensed after pre-wetting of aggregates





RE-DOSING OF ADMIXTURE

Considering the challenges at sites CBS has formulated a high dispersing admixture which is compatible and can be used for re-dosing on unavoidable circumstances. These carefully selected imported components disperse well on low slump concrete and enhance the slump to workable condition. This polymer will not delay concrete retardation and ultimate strength and offers ON-TIME setting and similar strengths.

Depending on the slump required and time elapsed for concrete premixed with CFLOW™ 251, an additional dose of 0.1 to 0.4% by W/C may be added to regain workability loss and compensate for water loss in mixes. The mix shall be thoroughly mixed/agitated at a speed of 12 rpm for at least 5 minutes before unloading.

EFFECTS OF OVERDOSING

Marginal overdosing of CFLOW™ 251 (Say up to 0.4% W/C) may not adversely affect the ultimate strength of concrete and may also achieve higher strengths than normal concrete. Severe overdosing of CFLOW™ 251 (>0.4%) can lead to high workability mixes with segregation & bleeding, prolonged duration of initial and final set, increased air entrainment and plastic shrinkage cracks.

Noticeable delayed retardation occurs when sulphate resisting cements/supplementary cementitious materials are used and ambient temperatures are low. Please consult technical department of CBS Chemicals for recommendation before placing concrete overdosed with admixtures.

COMPATIBILITY

CFLOW™ 251 is compatible to be used in combination with Ligno sulphonate admixtures, air entrainers, accelerators, retarders, corrosion inhibitors and shrinkage reducing admixtures but should be dispensed separately.

PACKAGING

CFLOW™ 251 is supplied in 210 Litre HDPE drums; alternatively 1000 Litre IBC's and bulk deliveries can be arranged.

STORAGE & SHELF LIFE

CFLOW™ 251 should be stored in a shaded cool and dry place. Shelf life of CFLOW™ 251 is 12months from the date of manufactured if kept in unopened, undamaged, original sealed packaging and kept within the range of 10°C to 50°C. If the product is frozen, thaw at +5°C or above and remix with mild agitation. Failure to comply with recommended storage may deteriorate the product or packing.

HEALTH & SAFETY

CFLOW™ 251 is water based, non-flammable and non-hazardous. However it should not be swallowed or allowed to come into contact with 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 eyes rinse immediately with plenty of water and seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting. For further information refer to the material safety data sheet.

DISCLAIMER

The information given is based on data and knowledge considered to be true and accurate and is offered for the user's consideration, investigation and verification. Since the conditions of use are beyond our control we do not warrant the results to be obtained. Please read all statements, recommendations or suggestions in conjunction with our conditions of sale including those limiting warranties and remedies which apply to all goods supplied by us. No statement, recommendation or suggestion is intended for any use which would violate or infringe statutory obligations or any rights belonging to a third party.

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