Conplast RP264

constructive solutions

Retarding and water reducing plasticising admixture

Uses

The unique dual function of Conplast RP264 improves both mixing water efficiency and delays initial set of concrete mixes. This improvement can be utilised to provide increased strength, density and workability without increase in cement, whilst retardation of setting times enables avoidance of 'cold joints' where delays in transporting and placing concrete occur.

Towers, chimneys, high buildings, slipform structures, tunnel/ shaft lining, offshore construction and in-situ piles.

Advantages

- **Easy pumping** - improves workability, cohesion and extends setting time. Provides protection against delays and stoppages.
- **In-situ Piling** - Avoidance of 'cold joints', helps easy casing removal.
- **Ready mixed concrete** - Increased workability and extended setting times minimises risks associated with long distance deliveries in hot weather.
- **Slipforming** - Facilitates keeping a workable concrete 'face' under difficult conditions.
- **Larger pours** - Possible with extended placing and compaction times and avoidance of 'cold joint'.
- **Increased ultimate strength** - Higher strengths without increase in cement content or reduction in workability.
- **Cement savings** - Can be obtained by maintaining original strength and workability
- **Improved cohesion** - Reduces bleeding and segregation where poor sand gradings are unavoidable.

Standards compliance

Conplast RP264 conforms to IS:9103-1999 as a retarding admixture. Also complies with ASTM C494 Type B and D.

Description

Conplast RP264 is a dark brown liquid based on selected lignosulphonates. When added to concrete mixes the admixture is absorbed onto the cement particles. It then acts as a dispersing agent which breaks down agglomerates of cement particles and enables the water in the mix to perform more efficiently.

Conplast RP264 delays the initial hydration of the cement which results in retardation of the setting time. However, once the concrete has undergone initial set, the hardening process continues normally.

Technical Support

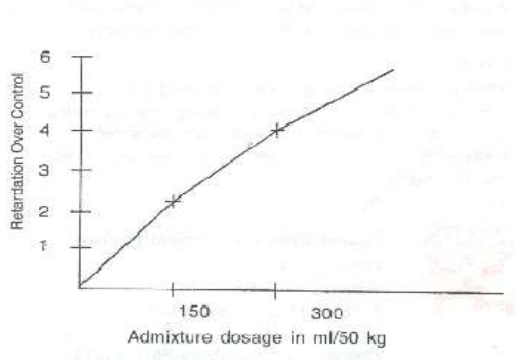
Fosroc's advice can be sought on mix design aspects especially to produce high workability concrete without segregation. Fosroc provides advisory service for 'on-site assistance and guidance on evaluation of trials and usage.

Properties

Chloride content	:	Nil to IS456
Specific gravity	:	1.18 at 27 ^{0}C
Compatibility	:	Compatible with all types of cements.

Conplast RP264 is generally compatible with other Conplast admixtures, which should be added to the mix separately and site trials should generally be carried out.

Setting times : Initial and final set times will be related to cement type and ambient temperature. Graph below illustrates the approximate degree of retardation over any control concrete within the temperature range 10^{0}C to 40^{0}C regardless of mix or cement type.



Conplast RP264 retardation Vs. Dosage at constant water content

Cohesion / Segregation : Improved dispersion of cement particles increases cohesion properties and reduces the probability of segregation and sand runs.

Permeability : Improved workability facilitates placing and compaction. Reduced water cement ratio increases density and makes the concrete more waterproof.

Compressive strength : Table 1 shows typical results where increased workability is obtained at original W/C and increase in strength where workability is maintained and W/C reduced.

Conplast RP264

Table 1 Test Results

Mix : Sand Zone 2 (I.S.383) 35%, Aggregate 20-5mm (I.S.383) 65%, Cement OPC (I.S.269)

Test	Dosage of Conplast RP264 Litre / 50 kg cement	W/C Ratio	Slump (mm)	Compressive strength N/mm^2 3days	7days	28days	Density kg/m^3
1. Control	None	0.65	60	10.2	13.1	16.7	2368
2. Workability increased	0.15	0.65	130	10.5	13.5	17.1	2348
3. Strength increase	0.15	0.572	65	16.1	19.3	25.7	2378

Retardation Observed : With no water reduction = 3 hours over control
With water reduction = 2 hours over control

Application instructions

Dosage

Conplast RP264 will normally be added at a rate between 0.1 and 0.30 litres /50 kg cement depending on the slump and retardation required. Site trials should be carried out to determine optimum dosage. If used for cement reduction without loss in strength the dosage is normally 0.15 litres / 50 kg cement.

Dispensing

The correct quantity of Conplast RP264 should be measured by means of an accurate and recommended dispenser. The measured quantity of the admixture should be added directly to the mixer at the same time as the mixing water. Under no circumstances should Conplast RP264 be added to the dry mix. If mixing water is added in more than one stage, add Conplast RP264 in the last stage.

Curing

Efficient concrete curing is essential and is best achieved by use of Concure WB spray applied curing compound. If traditional methods such as water spray or wet hessian are used, they must be carried out thoroughly.

Overdosing

An overdose of double the recommended measure of Conplast RP264 will result in increased retardation but the ultimate strength of the concrete will not be reduced and could be increased if advantage is taken of the increased workability.

Estimating

Packaging

Conplast RP264 is supplied in 5, 20 and 200 litre containers.

Storage

Minimum shelf life of 12 months provided the temperature has not exceeded 2^{0}C to 50^{0}C. If this range is exceeded in any respect, advice should be sought from the supplier.

Precautions

Health & Safety

Conplast RP264 is non-toxic, non-inflammable, any splashes should be washed well with water. If contact with eyes occur it shall be washed immediately with water and medical advice sought immediately.

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