

DONCRETE-MIX-I

(Anti Shora Treatment)

ABOUT

It is polymeric additive for cement and it is called DONCRETE-MIX-I because, it maximizes the cement surface area and It makes use of each and every particle of cement for the purpose of its use., The effect of salt in water/concrete/mortar reduces to 90% by using it. Once the polymer, Le it is added, each and every grain is loosened and the same cement occupies more area and this can be shown very easily in an experiment, taking two glasses of water, wherein same quantity of cement is added. In one glass, and DONCRETE-MIX-I as recommended, stir it and see the results for yourself.

The addition of DONCRETE-MIX-I (@2% of Cement Bag), causes the fine grains of cement to get coagulated. The sliding action of particles increases the surface area and also enhances smoothness of cement particles.

PRODUCT COMPOSITION:

Phenolic Acrylate with Mineral Loading (consisting of Micro Silica, Iron Oxide, Chromium Oxide & Nano Alumina & Magnesia)

WHAT DONCRETE-MIX-I CAN DO...

1. By adding DONCRETE-MIX-I (@2% Of Cement Bag), water demand in the cement is reduced and the cement colloids travel to fill up all the voids and produce a compact and dense concrete mass and effect of salt in water/concrete/mortar reduces to 90%
2. DONCRETE-MIX-I will help in faster construction, as the de-shuttering can be done between 15-16 days (5 days less than what is required without DONCRETE-MIX-I), instead of minimum 21 days in normal condition and for the spans below 10 ft to 11 ft., de-shuttering can be down within 7-8 days.
3. Increases Cement workability, which results in 10% to 15% of additional coverage.
4. Additional coverage area tantamount to reduction in cement usage, ie direct cost saving If you add DONCRETE-MIX-I, then the cement surface area increases & penetrates in to all these pores and absorption is reduced up to 90% or say permeability of Block is reduced.

Summary

DONCRETE-MIX-I is an absolute Use it & Forget All Problems kind of product in the area of water-proofing and provides total freedom from water seepage/salt etc. At the same time, it is an excellent concrete strengthening material at an affordable price.

TECHNICAL DETAILS OF DONCRETE-MIX-I

DONCRETE-MIX-I is a solution of micro-fines mineral particles as well as some Nano ceramics in Phenolic Acrylates. These Nano ceramics and micro fine materials give additional strength, water proofing and anti efflorescence treatment to the concrete Blocks and wall surfaces.

- Excess quantity of water used during construction period leads to defect in the concrete. If more water is added, it will evaporate and will lead to voids in the concrete, thereby making the concrete weaker.
- By adding DONCRETE-MIX-1, water demand in the cement is reduced and the cement colloids travel to fill up all the voids and produce a compact and dense concrete mass.
- Cement is basically a chemical, having various proportions of Di-Calcium Silicate (DCS) and Tri-Calcium Silicate (TCS). Grade-33 type of cement contains 33% TCS and Grade-43 type of cement is used more in construction of dams etc, because, they are basically high heat generation cement and they work better and give more strength in under water condition or in high humid conditions. In Indian condition, where temperature variation is extreme, it is always better to use moderate heat generating type of cement, like Grade-33 Type. Grade-33 type does not mean that, strength in the structure will be less. But, it will ease the use and will not generate more heat during use. So, less water is required and so, you also save on the cost of the material, which cement manufacturers charge for Grade-52 type. It is very interesting to know that, the chemical composition of the cement irrespective of their grades, world-over remains the same. The general chemistry is as under:

(CaO: 64% ± 4%, SiO₂: 22% ± 1% Al₂O₃, 6% ± 1%; Fe₂O₃: 0.5% ± 2%)

- This is one of the best water proofing agents. Due to this binding capability.
- DONCRETE-MIX-I will help in faster construction, as the de-shuttering can be done between 4-8 days instead of minimum 21 days in normal condition and for the spans below 10 ft to 11ft, de-shuttering can be done within 4-5 days.
- In all the cement, strengths are contributed by TCS and DCS. TCS will give initial setting strength and DCS gives the final setting strength. Before the cement takes in the form of structure or concrete, it goes through the following process
 - a) Hydration
 - b) Hardening
- The complete chemical reaction is as under-
 - (a) Hydrolysis of Tri-Calcium Silicate (3CaO.SiO₂)
Hydrolysis 3CaO.SiO₂.H₂O → 3Ca(OH)₂.SiO₂ (When water is less)
Hydrolysis 2(3CaO.SiO₂).H₂O → 3CaO.2SiO₂.3Ca(OH)₂ (When water is more)
 - (b) Hydrolysis of Di Calcium Silicate. (2 CaO.SiO₂)
Hydrolysis 2CaO.SiO₂.H₂O → CaO.SiO₂.Ca(OH)₂
 - (c) Hydrated Molecules of Calcium Silicates
 - (i) 3CaO.5H₂O (Quadrate)
 - (ii) CaO.SiO₂.2H₂O (Dehydrate)

Process of Hydration

DCS & TCS convert in to Hydrated Silicate molecules in contact with water. The process of gel formation takes place, which produces crystalline structure and thus, setting of cement starts. All polymers get final strength after complete chain reaction of any polymer structure and the same thing happens in cement, which hardens due to formation of crystalline structure, due to chain reaction. The complete chemical reaction is as under.

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Hydrolysis 3CaO.SiO₂.H₂O → 3Ca(OH)₂.SiO₂ (When water is less)
Hydrolysis 2(3CaO.SiO₂).H₂O → 3CaO.2SiO₂.3Ca(OH)₂ (When water is more)}
- (b) Hydrolysis of DI Calcium Silicate (2CaO.SiO₂)
Hydrolysis 2CaO.SiO₂.H₂O → CaO.SiO₂.Ca(OH)₂
- (c) Hydrated Molecules of Calcium Silicates

- (i) $3\text{CaO} \cdot \text{SiO}_2 \cdot 6\text{H}_2\text{O}$ (Hexahydrate)
- (ii) $2\text{CaO} \cdot \text{SiO}_2 \cdot 4\text{H}_2\text{O}$ (Quadrahydrate)
- (iii) $\text{CaO} \cdot \text{SiO}_2 \cdot 2\text{H}_2\text{O}$ (Dihydrate)

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Packing Size: 10,20,50, Ltrs.Pack



TECHNICAL COLLABORATION WITH



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