

Technical Datasheet

X-Mix HPR

Set Retarding / High Range Water-Reducing / Super plasticizing Admixture.

Product Description

X-Mix HPR is a high effective super plasticizer with a set retarding effect for producing fluid concrete with high slump free of bleeding and segregation in hot climates, manufactured from blend of high grade synthetic polymers.

X-Mix HPR is suitable for use with all types of ordinary Portland cements, sulfate resisting Portland cement and pozzolanic materials such as PFA and cement replacement.

Advantages

- Increased workability retention.
- Improves compressive strength at all ages.
- Improves workability.
- Reduces cement content.
- Enhances durability.
- Improves cohesion of mixes with poorly graded sands.
- Improves permeability.
- Improves compaction.
- Improves surface finish.
- Minimizes bleed and segregation.
- Non-toxic.
- Chloride free.

Uses

X-Mix HPR is suitable for use in the following condition:

- Pumped concrete.
- High workability concrete.
- Mass concrete pours.
- Ready-mixed concrete.
- Moderate distance transport by moderate w/c ratio.
- Decrease permeability.
- High quality and watertight concrete.
- Retain workability during hot weather and in delays of transportation.

Packaging

20 liter jenkins, 210 liter drums, 1000 liters Bulk Tanks.

Shelf Life

X-Mix HPR has a minimum shelf life of 12 months under shaded area. Must be protected from direct sunlight and frost.

Product Properties

| | |
|---|---|
| Consistency | Liquid |
| Color | Dark brown |
| Specific Gravity according to ASTM D 2111 (g/cm³) @ 25° C | 1.200±0.01 |
| p^H | >6 |
| Main action | Water reduction & Retarding of initial hydration; retention of workability. |
| Collateral action | Retarding of initial setting time, workability retention |
| Classification according to EN 934-2 | Set retarding/high range water reducing/ super plasticizing admixtures, T 11.1 / 11.2 |
| Classification according to ASTM C494 | Type G |
| Classification according to ASTM C1017 | Type II |
| Water reduction | ≥12 % according to EN 934-2 to almost 18% |
| Chlorides soluble in water according to EN 480-10 (%) | ≤ 0.1 (absent according to EN 934-1) |
| Alkali content (Na₂O equivalent) according to EN 480-12 (%) | < 55 g |
| Nitrate content | Nil |

Specification Compliance

- EN 934-2 T 11.1 / 11.2.
- ASTM C 494: Type G.
- EN 480-10.
- EN 480-12.
- ASTM D 2111.

Dosage

Dosage is 0.7 – 2.5 liter/100kg of cement @ 25° C, including any pozzolanic materials and cement replacements.

The actual dosage rates and water reduction rate are dependent on the :

- 1- Cement rate in mix design.
- 2- Quality of cement & aggregates.
- 3- Water/Cement-ratio.
- 4- Ambient temperature (Weather).

Therefore, it is advisable to carry out trial mixes.

Dosages outside this range can be used to produce particular mix requirements, provided that extensive trial mixes and laboratory have been conducted.

Dispensing

X-Mix HPR should be added to the concrete while being mixed using a suitable dispenser. Add to the concrete with the mixing water to obtain best results.

Overdosing

When accidental overdosing occurs will result in:

- Increase in workability.
- Initial and final set retarding.
- Increase in air-entrainment.

APPLICATION PROCEDURE

add X-Mix HPR into the mixer after the other ingredients (water, cement, aggregates). X-Mix HPR is most effective if added when cement and aggregate granules are already wet, and least effective when the admixture is mixed with dry solids which partially absorb it (especially if porous). It is advisable to begin adding the admixture with an automatic dispenser after adding at least, half of the batching water required.

Compatibility

X-Mix HPR is compatible with a wide range of admixtures used in the same concrete mix. All admixtures should be added to the concrete separately and must not be mixed together prior to addition. The resultant properties of concrete containing more than one admixture should be assessed by trial mixes.

Clean Up

Clean up spillages of by absorbing onto sand and transferring to suitable containers. Any residue should be washed down with large quantities of water. The disposal of excess or waste material should be carried out in accordance with local regulations.

Health and Safety

This product is for industrial use only by trained operatives. It is potentially hazardous if not used correctly. Please refer to the Material Safety Data Sheet (MSDS) prior to the purchase and use of this product. The MSDS can be obtained via our website www.ncc.com.eg.

Authorized Technical Specialist

Please note that only NCC X-Calibur Authorized Technical Specialists (ATSs) are permitted to change any of the information in this data sheet or to provide written recommendations concerning the use of this product. Visit www.ncc.com.eg for a full list of NCC X-Calibur ATSs.

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