ARIT奥莱特

PRODUCT DATA SHEET

ART- PYH

Internal Curing Agents

Description

Internal curing agents for concrete are admixtures added during the mixing process, containing water-absorbing and retaining components. They supply the water needed for hydration, enhancing concrete's strength and durability. These agents incorporate superabsorbent polymers that release moisture at appropriate times, maintaining adequate internal humidity. By compensating for internal water loss and increasing humidity, they effectively reduce autogenous shrinkage. This technology has proven effective in controlling cracking and improving structural durability.

Main benefits/Characteristics

- These agents contain superabsorbent polymers that, unlike conventional water-absorbing materials, exhibit exceptional water-retention capacity; even under high pressure the absorbed water is scarcely released naturally. However, once swollen, the polymers will liberate moisture when exposed to elevated pH or high ionic strength. In cement hydration, the dissolution of Ca^{2+} and other cations from the clinker raises the pore-solution pH and ion concentration, triggering the polymers to continuously release water and supply the additional moisture required for further hydration.
- By internally supplying water, the agents raise the internal moisture content and flatten the relative-humidity gradient within the concrete, thereby providing self-curing.
- High-performance concrete incorporating internal curing admixtures shows substantially improved freeze–thaw and impermeability resistance; under hot, dry conditions the benefit to long-term durability is even more pronounced.

Applications

- Mass concrete
- Low water-to-cement ratio concrete
- Concrete with a demand for shrinkage reduction
- Concrete with a need for enhanced crack resistance

Physical and chemical indicators

Items	Performance
Appearance	Gray powder
Chloride content	≤ 0.06
Alkali content / %	≤ 0.8
Setting-time difference / min	− 90 to +120
Compressive-strength ratio / %	3 d ≥ 80; 28 d ≥ 90
Plastic-shrinkage ratio / %	12 h ≤ 60
Drying-shrinkage ratio / %	28 d ≤ 80
Crack resistance	No cracking at 28 d

Recommended Dosage

1.0% to 10.0% weight of binder

Pre-testing must be performed to determine the exact dosage

Packaging

Packed in 25 kg bags.

Storage

Store in undamaged, original sealed packaging in dry conditions.

Protect product from direct sunlight

A minimum shelf life of 6 months under normal storage conditions. Shelf life may be greater than stated depends on storage conditions.

LEGAL NOTES