

TRYSTA[®]

Freeze/Thaw Durability-Enhancing Admixture

Product Description

TRYSTA[®] freeze/thaw durability-enhancing admixture is based on patented technology. It is for zero slump concrete applications such as segmental retaining wall units and concrete pavers, which are exposed to environments of repeated freezing and thawing.

Product Function

When water freezes, it undergoes an approximate nine percent volume expansion. In low slump manufactured concrete products this expansion occurs in the cement paste and induces significant stresses that cause the cement paste microstructure to rupture and fail.

TRYSTA admixture improves the freeze/thaw durability of manufactured concrete products in two important ways. First, it improves cement utilization, enhancing cement dispersion in low-slump concrete mixtures. This improves the overall quality, uniformity and strength of the cement paste. Second, it entrains micron-sized air bubbles which act as escape boundaries for the expanding ice front. These air bubbles act as relief valves in a similar fashion as the entrained air in freeze/thaw durable readymix concrete

Product Uses

TRYSTA admixture provides dramatically improved freeze/thaw durability to manufactured concrete products and is formulated to help these products meet freeze/thaw durability standards when tested in both tap water and saline.

Application Information

TRYSTA admixture is compatible with most concrete additives, but when multiple additives are used they must be added separately to the concrete mixture.

Addition Rates:

TRYSTA admixture is typically used at a rate of 5-15 oz/cwt (325-975 mL/100 kg) of cementitious material. The rate will vary depending on the level of freeze/thaw durability required.

TRYSTA admixture produces little change to the appearance of the concrete units at the lower addition rates, but may provide a swipe at the higher addition rates.

Advantages

- Enhances freeze/thaw durability
- Reduces feed and finish times
- Reduces culls

Packaging

TRYSTA admixture is available in drums and returnable totes.

Health & Safety

All precautions defined on the SDS (Safety Data Sheet) for TRYSTA admixture must be followed

Storage

TRYSTA admixture will begin to freeze at approximately 32°F (0°C), but can be used after thawing and thorough mechanical agitation.

Application Considerations

The freeze/thaw durability of manufactured concrete products is generally a function of:

- Aggregate quality
- Aggregate gradation and proportioning
- Cement/aggregate ratio
- Use of hydrophobic producing admixtures
- Water absorption and density characteristics of the concrete

The use of TRYSTA admixture with proper mix design, increases the resistance of concrete to the destructive stresses of repeated freezing and thawing.

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GCP Applied Technologies Inc., 2325 Lakeview Parkway, Alpharetta, GA 30009, USA

GCP Italiana S.p.A. - Via Trento, 7 - 20017 Passirana di Rho, Milano, Italy

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