TYTRO® HC 250

Hydration stabilizing admixture for shotcrete

Product Description

TYTRO® HC 250 is a ready-to-use, liquid, non chloride solution specifically designed to control and stabilize the cement hydration of shotcrete for long periods (up to 72 hours) without negatively influencing the quality of shotcrete. The ingredients are factory pre-mixed in exact proportions under strict quality control to provide uniform results.

When added to the shotcrete mixes at the batching plant, TYTRO® HC 250 stabilizes cement hydration process and fully prevents it from reaching initial set by forming a protective barrier around the cement particles. The stabilized shotcrete resumes normal hydration process when it is activated by the addition of TYTRO®SA series of alkali-free set accelerators at the nozzle.

TYTRO® HC 250 is formulated to comply with the requirements of ASTM C494, Specification for Chemical Admixtures for Concrete, as Type D water reducing and retarding.

Uses

TYTRO® HC 250 is used in all shotcrete applications where a controlled set time extension is required, and especially in the following applications:

- Temporary and permanent rock support in tunnels
- Underground rock support in mining
- Slope stabilization

Product Advantages

- Total operational flexibility – Full control over set time
- Minimum material waste – Complete use of loads. No need for waste disposal
- Consistent quality shotcrete
- Robust and easy to formulate

Addition Rates

The dosage of TYTRO® HC 250 can vary based on the mix design, cement type and content, water-to-cementitious materials ratio, concrete temperature, ambient temperature, and required set time extension.

The dosage of TYTRO® HC 250 normally ranges between 0.6% and 2% by the total weight of cementitious materials for applications requiring set time extensions in excess of 3 hours. GCP Applied Technologies recommends that trials be performed with cement and aggregates under local conditions before use to assess and optimize dosage rates and performance.

Mixing & Dispensing

In general, it is recommended that TYTRO®HC 250 be added to the mix near the end of the batch sequence for optimum performance. It is recommended that TYTRO® HC 250 be introduced into the mixer by means of automatic dispensing equipment. A range of equipment is available, and advice on supply and fitting is available from GCP Applied Technologies on request.

Packaging

TYTRO® HC 250 is available in bulk, delivered by metered tank trucks, 1,000 litre totes, and 210 litre drums.

Storage

Temperature

TYTRO® HC 250 should be stored at a temperature range of 2 °C to 35 °C. If TYTRO® HC 250 freezes, it will return to full effectiveness after thawing and thorough mechanical agitation. It is recommended that your local sales representative be consulted prior to the use of any products that may have been frozen. Performance tests should always be carried out prior to use. The maximum storage temperature for TYTRO® HC 250 is +60 °C. Performance tests should always be carried out prior to use.

Conditions

TYTRO® HC 250 must be kept in closed plastic containers or closed tanks.

Shelf life

If stored in tightly closed original containers and under the above mentioned conditions, TYTRO® HC 250 has a shelf life of at least 12 months. Please contact your local GCP Applied Technologies sales representative regarding the suitability for use if the shelf life of TYTRO® HC 250 has been exceeded.

Health and Safety

Avoid eye and skin contact and wear rubber gloves and safety glasses when handling this product. If contact occurs, rinse with plenty of water and seek medical advice. For further information, refer to the Material Safety Data Sheet or contact your local GCP Applied Technologies representative.

Compatibility

TYTRO® HC 250 is compatible with all TYTRO®shotcrete admixtures. GCP Applied Technologies recommends that a suitable alkali-free set accelerator be incorporated into the shotcrete mix to reactivate the cement hydration process. TYTRO® SA series of high performance set accelerator is recommended for this purpose. Pretesting of the shotcrete mix should be performed before use and as conditions and materials change in order to ensure compatibility with other admixtures. For use with other shotcrete admixtures systems, we recommend you to contact GCP Applied Technologies for further advice.

Properties

Form	Liquid
Color	Red
Density (g/cm^3)	1.15 ± 0.02
pH (25 °C / 77 °F)	< 2
Chloride Content	<0.1%
Thermal Stability	>1 °C

GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 450, Alpharetta, GA 30009, USA

GCP Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

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ca.gcpat.com/solutions/products/tytro-shotcrete-system/tytro-hc-250