

TYTRO[®] AE 220

Air-entraining admixture for shotcrete

Product Description

TYTRO[®]AE 220 is an air-entraining admixture which generates a highly stable air-void system for increased protection against damage from freezing and thawing, severe weathering, or de-icer chemicals. TYTRO[®]AE 220 is a complex mixture of organic acid salts in an aqueous solution specifically formulated for use as an air-entraining admixture for shotcrete and is manufactured under rigid control which provides uniform, predictable performance. TYTRO[®]AE 220 is supplied ready-to-use and does not require pre-mixing with water.

By agitation of concrete mixers, TYTRO[®]AE 220 disperses and generates millions of discrete semimicroscopic bubbles throughout the concrete composite. Once thoroughly mixed, the shotcrete contains a stable network of bubbles which act much like ball bearings increasing mobility, or plasticity, of the mix.

TYTRO[®]AE 220 complies with EN 934-2.

Product Advantages

- Increased durability to all exposures
- Improved workability
- Reduced water content – with no loss of slump
- Improved pumpability through high initial air content
- Improved placement
- Bleeding and segregation minimized

Uses

TYTRO[®]AE 220 is used in all shotcrete applications to improve air entrainment stability and durability, especially in the following applications:

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

TYTRO[®]AE 220 introduces a high amount of uniformly dispersed stable small air bubbles in all shotcrete applications which are desired for providing high initial air content to achieve superior pumpability characteristics.

Addition Rates

The dosage of TYTRO[®]AE 220 can vary based on the mix design, type and content of cementitious materials, water-to-cementitious materials ratio, concrete temperature, ambient temperature and required air for exposure conditions.

Entrained air results in increased yields with a consequent decrease in the cementitious materials content of the placed shotcrete. This condition calls for a mix adjustment, usually accomplished by reducing the fine aggregate content. This is in addition to the reduction in water content brought about by the increase in plasticity.

The dosage of TYTRO[®]AE 220 normally ranges between 30 and 320 mL per 100 kg of cement. GCP 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[®]AE 220 be added to the mix near the beginning of the batch sequence for optimum performance.

It is recommended that TYTRO[®]AE 220 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 on request.

Packaging & Storage

TYTRO[®]AE 220 is available in bulk and in drums.

Temperature

TYTRO[®]AE 220 should be stored at a temperature range of 2 °C to 35 °C.

If TYTRO[®]AE 220 freezes, it will return to full effectiveness after thawing and thorough mechanical agitation. It is recommended that your local GCP 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.

Conditions

TYTRO[®]AE 220 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[®]AE 220 has a shelf life of at least

12 months.

Please contact your local GCP sales representative regarding the suitability for use if the shelf life of TYTRO[®]AE 220 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 SDS (Safety Data Sheet) or contact your local GCP representative.

Compatibility

TYTRO®AE 220 is compatible with all GCP TYTRO®shotcrete admixtures.

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 contact GCP for further advice.

Properties

Form	Liquid
Colour	Brown
Specific Gravity	1.005

North America customer service: 1-877-4AD-MIX (1-877-423-6491)

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