

TYTRO[®] FR 850 Macro Fibers

Fiber Reinforcement for Shotcrete

Product Description

TYTRO[®]FR 850 macro fibers are GCP Applied Technologies' latest generation synthetic-based macro-fiber, featuring a patented high strength, high modulus design providing superior flexural toughness and post-crack performance in underground shotcrete applications. Its advanced packaging condenses the fibers in an aligned format, improving their dispersion in the shotcrete mix compared to traditional loose fiber packaging.

The improved dispersion resulting from the aligned fibers reduces balling, and the alignment of the fibers prevents individual fibers from curling and becoming tangled prior to use, thereby enhancing placement.

Product Advantages

- TYTRO[®] FR 850 fibers vs. Competing Macro Fibers
- Low cost per Joule
- High post-crack energy absorption
- Superior dispersion properties
- Reduced balling
- Lower impact on slump

TYTRO[®] FR 850 fibers vs. Steel Fibers

- Easier to pump
- More dosage-efficient – Low dosage rate to meet 450 Joule Q-Chart specification
- Long term durability – Corrosion free
- Reduced cycle times
- Superior dispersion
- Safer and lighter to handle
- Reduced fire damage – Lower spalling risk
- Reduced wear on concrete pumps and hoses

TYTRO[®] FR 850 fibers vs. Steel Mesh

- Reduced cycle times
- Lower labor and installed material cost
- Long term durability – Corrosion free
- Enhanced safety

Uses

TYTRO®FR 850 fiber is used to replace steel fibers and mesh in all shotcrete applications requiring reinforcement, especially in the following applications:

- Temporary and permanent rock support in tunnels.
- Underground rock support in mining.
- Slope stabilization.
- Structures that are subject to corrosion.

Addition Rates

The dosage of TYTRO®FR 850 fiber is dependent on the specific toughness requirements and will vary between 4 and 9 kg/m³ (7 to 15 lb/yd³). Please consult your GCP Applied Technologies representative for assistance with dosage levels and recommended admixtures.

GCP Applied Technologies recommends that trials should be performed under local conditions before use to assess and optimize dosage rates and performance.

Compatibility with Other Admixtures and Batch Sequencing

TYTRO®FR 850 fiber is fully compatible with the complete line of TYTRO® admixtures. TYTRO®FR 850 action in concrete is mechanical and will not affect the cement hydration process.

In general, it is recommended that TYTRO®FR 850 fiber be added to the mixer at the beginning of the batch sequence prior to the aggregates and cementitious materials

TYTRO®FR 850 PROPERTIES	
Specific gravity	0.91
Length	50 mm (1.97")
Absorption	None
Modulus of elasticity	7 GPa (1,015 ksi)
Tensile strength	550 MPa (80 ksi)
Melting point	160°C (320°F)
Ignition point	570°C (1,058°F)
Alkali, acid & salt resistance	High

Packaging

TYTRO®FR 850 fiber is available in 4.5 kg (10 LB) condensed fiber bags.

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