TYTRO® FR 850 Macro Fibers Data Sheet

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.

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate, and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations, and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right.

TYTRO is a trademark, which may be registered in the United States and/or other countries, of GCP Applied Technologies Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2019 GCP Applied Technologies Inc. All rights reserved.

GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 400, Alpharetta, GA 30009, USA

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

This document is only current as of the last updated date stated below and is valid only for use in the United States. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on www.gcpat.com. Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

Last Updated: 2023-06-28