



MACRO SYNTHETIC

Description

FORTA-FERRO[®] is an easy to finish, color-blended macro synthetic fiber made of 100% virgin copolymer/polypropylene. Its twisted-bundle monofilament and fibrillated fibers yield a high-performance concrete reinforcement. This heavy-duty macro synthetic fiber offers maximum long-term durability, structural enhancements, and effective temperature/shrinkage crack control. FORTA-FERRO is non-corrosive, non-magnetic, and 100% acid and alkali proof.

Reinforcement Objective

To inhibit plastic and settlement shrinkage cracking prior to the initial set, and to reduce hardened concrete shrinkage cracking, improve impact resistance, and enhance concrete toughness and durability as an alternate temperature/shrinkage reinforcement.

Physical Properties

Specific Gravity	0.91
Tensile Strength	83-96 ksi (570-660 MPa)
Length	2.25 in (54 mm), 1.5 in (38 mm)
Melting Point	319°F (160°C)
Material	Virgin Copolymer / Polypropylene
Form	Monofilament / Fibrillated
Color	Gray
Acid / Alkali Resistance	Excellent
Absorption	Nil

Compliance & Certification

- ASTM C1116 / C1116M-10a, Standard Specification for Fiber-Reinforced Concrete, "Type III Synthetic Fiber-Reinforced Concrete"
- ASTM D7508 / D7508M-10(2015), Standard Specification for Polyolefin Chopped Strands for Use in Concrete
- SDI C-2017, Composite Steel Floor Deck-Slabs (Section 2.4.B.15.a.3)
- Certified UL / ULC: CBXQ.R18552
- DUNS: 094214129
- CAGE Code: 0AFN8
- NAICS: 325220
- CE 0749-CPD EN 14889-2

Applications

FORTA-FERRO is mainly used in concrete applications such as slabs-on-ground, composite steel decks, overlays, pavements, bridge decks, shotcrete, and precast products – anywhere that steel reinforcement reduction or replacement is the objective. Contact FORTA Corporation for design assistance and dosage recommendations.

Performance Benefits

- Enhance durability
- Reduce plastic shrinkage cracking
- Reduce crack width opening
- Improve flexural toughness and fatigue resistance
- Increase impact and shear resistance
- Increase post-cracking residual strength

Reinforcement Dosage

This product is typically used at a dosage of 3.0 lb/cu yd of concrete, and higher, depending on application and desired performance. Contact FORTA Corporation for design assistance and dosage recommendations.

Dosage by Volume (%)	Dosage by Weight	
	Imperial (lb/cu yd)	Metric (kg/cu m)
0.20	3.0	1.8
0.27	4.0	2.4
0.33	5.0	3.0
0.40	6.0	3.6
0.50	7.5	4.5
1.00	15.0	8.9

FD.1.01.07.18

Packaging

FORTA-FERRO is available in convenient degradable mixer-ready bags in 1.0 to 5.0 lb increments (1.0 and 2.0 kg).

Recommendations

Addition: FORTA-FERRO is packaged in mixer-ready bags that can be added directly into the concrete mixing system. The fiber should be added during or after batching of the other ingredients – not as the first mix ingredient.

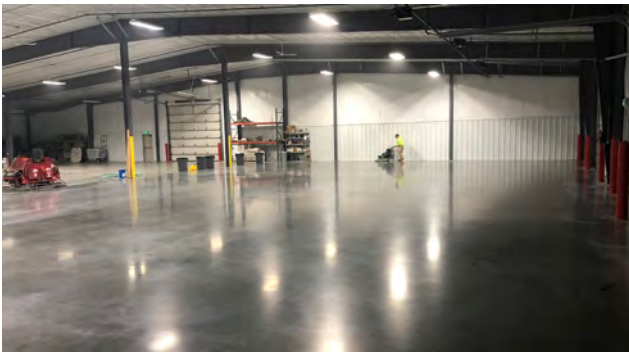
Mixing: When possible, add fibers to a rotating drum. Once all fibers have been added to the batch, mix four to five minutes at standard mixing speed. Road-revolution speed should not be counted as part of the required fiber mixing time.

Slump: Fibers will reduce the visual slump measured by the slump-cone test, but has a lesser effect on flow-ability and workability. To regain any loss of workability or slump, the use of appropriate admixtures is recommended – avoid the addition of water.

Pumping: If the fiber reinforced concrete is to be pumped, it is HIGHLY recommended that the grate on the hopper of the pump truck be a round-bar grate. The use of a vibrator attached directly to the grate is also recommended to aid in movement of the concrete through the grate.

Additional Information

Additional information such as the Safety Data Sheet, Certifications, videos and other literature can be found on the forta-ferro.com website. The website also features Project Profiles that show the many applications and benefits of FORTA-FERRO first-hand.



Slab-on-Ground



Composite Steel Deck

Warranty

FORTA® products are warranted to be free of defects in material and meet all quality control standards set by the manufacturer. FORTA Corporation specifically disclaims all other warranties, express or implied. The exclusive remedy for defective product shall be to replace the product or refund the purchase price. No agent or employee of this company is authorized to vary the terms of this warranty notice. FORTA Corporation has no control over the design, production, placement, or testing of the concrete products in which FORTA® products are incorporated, and therefore FORTA Corporation disclaims liability for the end product.

FORTA reserves the right to change the features and specifications of its products without prior notice.

FORTA-FERRO® can be purchased from FORTA Corporation or an authorized FORTA® products distributor, dealer or representative.

U.S. Patent Nos. 6,753,081 and 7,168,232. Additional patents pending.

FORTA®, FORTA-FERRO®, and "Circles of Strength" mark are registered trademarks of FORTA Corporation

© 2018 FORTA Corporation



FD.1.01.07.18



STRONGER LASTING™

100 FORTA Drive | Grove City | PA | 16127-6399 | U.S.A.
Phone: 724-458-5221 | Toll Free: 800-245-0306 | Fax: 724-458-8331
Email: info@fortacorp.com | forta-ferro.com |    

Certification

SYNTHETIC FIBER REINFORCEMENT

MATERIAL CERTIFICATION

FORTA hereby certifies that each grade of our fiber reinforcement is manufactured of 100% virgin synthetic materials containing no reprocessed materials. In addition, The FORTA® product grades are fully-oriented fibers, and are designed and manufactured specifically for use in concrete.

SPECIFICATION AND CODE COMPLIANCE

The FORTA® grades of fiber reinforcement comply with the material specifications of ASTM C1116 "Standard Specification of Fiber Reinforced Concrete and Shotcrete", Section 4.1.3. and ASTM D7508 "Standard Specification for Polyolefin Chopped Strands for Use in Concrete." The FORTA® products also comply with the national building codes, including the International Building Code, and Uniform Building Code (ICC-ES Reports ESR-2720 and ESR-2522). FORTA® products are also listed to applicable standards and requirements by UL (R18552).

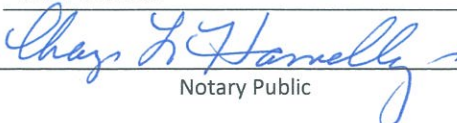


JOHN B. LINDH
President, CEO

Commonwealth of Pennsylvania
County of Mercer

Signed (or attested) before me on February 25, 2023

by John B. Lindh



Notary Public

