FORTA®

Reinforcing the Future - Worldwide

Synthetic Fibers... Understanding the Differences

As the pioneer of synthetic fiber technology, FORTA® developed a complete family of fibers by altering several important characteristics – shape, length, chemistry, and dosage – to achieve varying levels of crack control in many concrete applications.

Understanding fiber differences allows you, the concrete user, to best determine the *right* fiber to attain your desired results. Read more about our simple 3-Level approach to concrete-toughening products, and please contact us if you have any questions.

FORTA®

Level 1

Very fine monofilament fibers are generally used at a low dosage such as 1.0 lb. per cubic yard of concrete to reduce plastic shrinkage cracking prior to initial set. Made in short lengths of polypropylene or nylon, this group of FORTA products are easy to add and mix, and result in a near-invisible surface finish.

LEVEL 1 PRODUCTS
- FORTA® **Econo-Mono®**
- FORTA® **Nylo-Mono®**
- FORTA® **Mighty-Mono®**

Level 2

LEVEL 2 PRODUCTS
- FORTA® **Econo-Net®**
- FORTA® **Super-Net®**
- FORTA® **Ultra-Net®**
- FORTA® **Green-Net®**

Fibrillated, or net-shaped fibers are generally used in concentrations of 1.5 to 3.0 lbs./cubic yard to reduce plastic and hardened concrete shrinkage cracking, and act as a viable alternative to conventional temperature steel, such as wire mesh, in many applications. Made of polypropylene in short to medium lengths, these fibers may be natural white or colored to better blend with cured concrete, and may consist of 100% virgin materials, or 100% recycled resin where green construction practices are required.

Level 3

Heavy-duty macro-synthetic fibers represent the next generation of synthetic fiber technology, capable of a much higher replacement level of conventional steel reinforcement. The FORTA-FERRO® macro fiber maximizes each of the critical fiber characteristics that contribute to long-term durability and crack-control performance.

Using advanced co-polymer chemistry and a blend of fiber shapes, along with twisted bundles and special gray color to assure uniform mixing and an excellent surface finish, this unique best-of-its-kind macrosynthetic may be used at much higher dosages (3.0, 5.0, 7.5 lbs./cu. yd. or more) without losing its user-friendly reputation. FORTA-FERRO® has the highest slab curling reduction and best post-crack performance values of any synthetic fiber in its class, and continues its storied history on performance projects throughout the world.

LEVEL 3 PRODUCTS
- **FORTA-FERRO®**

Fiber Performance Guidelines

Level 1

- Reduce plastic shrinkage cracking
- Used in conjunction with steel
- Fine monofilament fiber
- Polypropylene or nylon
- 1.0 lb./cubic yard
- 1/2" – 3/4" length

Level 2

- Reduce plastic shrinkage and temperature-related cracking
- Some light steel replacement
- Fibrillated-net fiber
- Polypropylene
- 1.5 to 3.0 lb./cubic yard
- 3/4" – 1-1/2" length

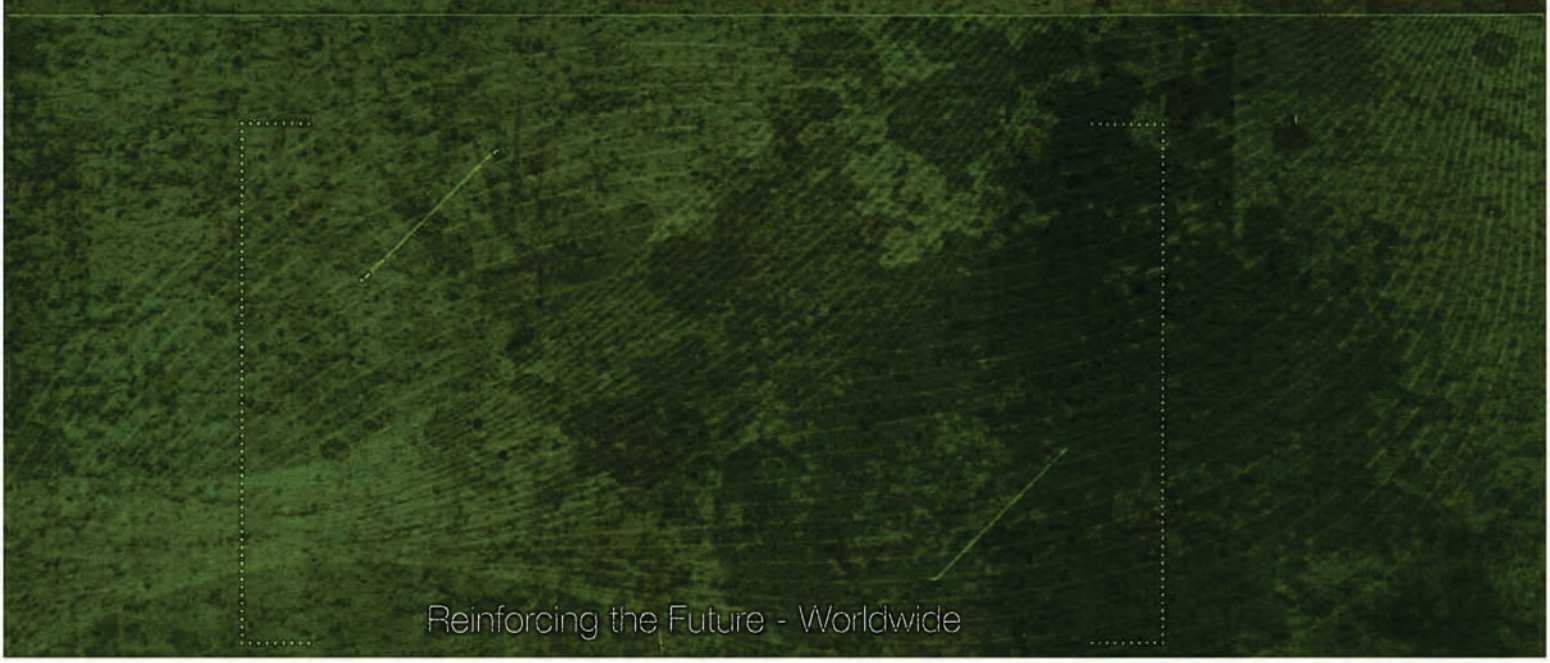
Level 3

- Reduce plastic and hardened concrete shrinkage, and temperature-related cracking
- Add toughness and increase post-crack behavior
- Higher level of steel replacement
- Heavy-duty macrofilament and fibrillated blend
- Polypropylene/co-polymer blend
- 3.0, 5.0, 7.5 lbs./cubic yard and higher
- 1-1/2" – 2-1/4" length

Research Leaders

For over 30 years, FORTA® has been the industry leader for a wide variety of fiber-reinforced concrete testing, from early-life shrinkage to long-term durability. Determining a specific fiber's ability to affect concrete properties such as impact, toughness, ductility, or fire-resistance, has allowed FORTA® to attain a collection of building code evaluations, approvals, and in some cases, fire ratings.

This fiber-specific research has enabled FORTA® to create general performance guidelines to help direct specifiers, contractors, and owners towards the proper fiber level that will achieve their project goals.



FORTA®

FORTA Corporation
100 Forta Drive
Grove City, PA 16127-6399
USA

1.800.245.0306
724.458.5221

fax 724.458.8331

www.forta-ferro.com
info@forta-ferro.com

Pioneers of the Industry

Founded in 1978, FORTA® was first to introduce synthetic fiber reinforcements to the U.S. construction market. In the years since, FORTA® has continued to test, develop, and produce various fiber types, grades, and chemistries to control cracking and enhance the long-term properties of concrete. FORTA® continues to lead the fiber reinforcement industry with the introduction of a high-performance macrosynthetic fiber – FORTA-FERRO® – which represents the next generation of synthetic fibers, allowing for a higher replacement level of conventional steel reinforcement.

FORTA's® three-dimensional reinforcing fibers have been used in a wide variety of applications, including precast vaults, tanks, and building panels, site-cast driveways, pavements, and parking lots, and air-placed slope-linings and tunnel walls. FORTA® products have played an important role by improving the performance and durability of concrete, creating a history of "Reinforcing the Future – Worldwide."

Mission Statement

We will pay close attention to our customers, and lead them into the future of fiber technology. We will strive to serve our customers so well that they will brag about our products and service. We will not be satisfied simply to be in the fiber business, but will partner with our customers to maintain the FORTA® goal of "Reinforcing the Future."