



# UltraFiber 500®

## - Alkali Resistant Cellulose

Solomon UltraFiber 500 is made from virgin cellulose fibers with a patented alkaline resistance coating specifically engineered and manufactured for use as fibrous secondary reinforcement for concrete. UltraFiber 500 is a natural polymer made from the longest and thickest cellulose fiber in North America. Being derived from a renewable natural resource, UltraFiber 500 supports green building strategies. UltraFiber 500 high tensile strength and high surface area delivers superior performance in a broad range of concrete applications.

| <b>Fiber Attributes, units</b>      | <b>UltraFiber 500</b> | <b>Poly Fibers</b>   |
|-------------------------------------|-----------------------|----------------------|
| Average Length, mm                  | 2.1                   | 16                   |
| Average Denier, g/9,000m            | 2.5                   | 6                    |
| Projected Diameter, um              | 18                    | 30                   |
| Apparent Density, g/cm <sup>3</sup> | 1.10                  | 0.91                 |
| Average Fiber Tensile, KSI          | 90 - 130              | 30 - 70              |
| Surface Area, cm <sup>2</sup> /g    | 25,000                | 1,500                |
| Fiber Count, fibers/lb              | 720 x 10 <sup>6</sup> | 44 x 10 <sup>6</sup> |
| Hydrophilic                         | yes                   | No                   |

UltraFiber 500 meets the material specification described in **ASTM C-1116-08, Section 4.1.4 Type IV Natural Fibers** and **ASTM D-7357-07 Cellulose Fibers**.

### **ASTM C-1116 – 08 Standard Specification for Fiber-Reinforced Concrete**

To satisfy the requirements for being classified as a Type IV Natural Fiber, the fiber must:

1. Have documentary evidence confirming their long-term resistance to deterioration when in contact with the moisture and alkalis present in cement paste and substrates present in admixtures.
2. Conform to the specification of ASTM 7357 (Standard Specification for Cellulose Fibers for Fiber-Reinforced Concrete).
3. Satisfy the requirement of ASTM 6942 (Test Method for Stability of Cellulose Fibers in Alkaline Environments).

To ensure high fiber performance and the satisfaction of the requirements of ASTM C-1116-08 users and specifiers of natural (cellulose) fibers should ask for documentation from an independent code review body such as the International Code Council (ICC).

UltraFiber 500 has shown that it meets the requirements of ICC-ES AC-217 as noted in the ESR-1032 report issued by the ICC Evaluation Service, Inc. ([www.icc-es.org](http://www.icc-es.org)). Not all fibers (natural or synthetic) meet the high standards demonstrated by UltraFiber 500, so users and specifiers should insist on the best.

**Does Solomon UltraFiber 500 rot or decay like wood? ABSOLUTELY NOT!!!**

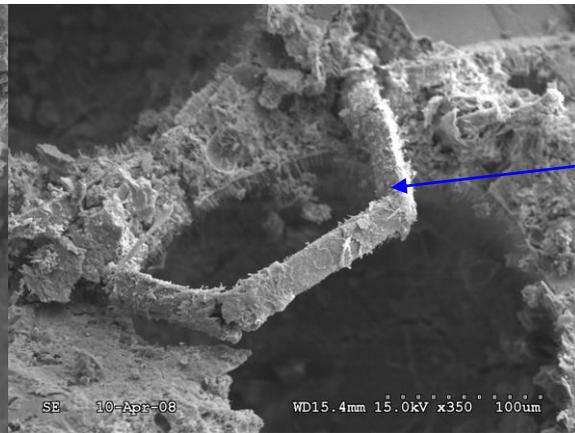
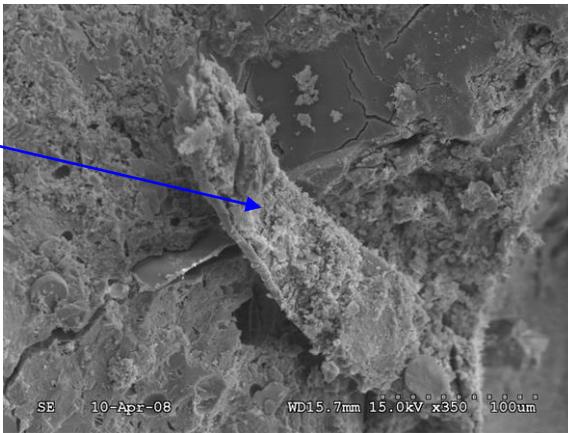
- ❑ UltraFiber 500 is **NOT** wood – it is a purified, lignin-free, high strength, cellulose fiber that is treated with an alkali resistant patented coating.
- ❑ UltraFiber 500 is manufactured from a single source plantation softwood tree that has one of the highest strength cellulose fibers found in nature.
- ❑ Microorganisms that cause rot and decay cannot live in concrete - the pH is too high (alkaline), moisture and air quantity is severely limited, and sunlight does not penetrate the concrete.
- ❑ In concrete, UltraFiber 500 is encased with the cured cement paste that readily bonds to the surface of the fiber. There are no open spaces between the fiber and the cured cement.
- ❑ With the highly stable fiber, the alkali resistant coating, the encasement of cured cement around the fiber, and the high pH environment of concrete, it is impossible for microorganisms to grow and attack UltraFiber 500 in concrete.

**UltraFiber 500 WILL NOT ROT OR DECAY IN CONCRETE!**

Below are pictures of **concrete** containing UltraFiber 500 that are 6 years old:

**350X**

**350X**



**UF-500  
Fibers**

**UF-500  
Fiber**

Below are pictures of hardened cement composite made in 1990 containing the base cellulose fiber for UltraFiber 500. It has been kept on the roof of a building in Memphis, TN for the past 18 years exposed to all the elements. Notice the flourishing, healthy, cellulose fibers that show no signs of decay or deterioration.

**Healthy Cellulose Fibers Everywhere**

