

# HD Fiber

## PRODUCT INFORMATION

*RICH Fiber™ HD (high dispersion) is an engineered alkali-resistant (AR) glass fiber designed to reduce plastic shrinkage cracking in concrete and mortar. RICH Fiber™ HD fiber is available either in bulk packaging, or in one-pound bags.*

*Water cement ratio, aggregates and sand size are some of the parameters which influence concrete shrinkage. RICH Fiber™ HD fibers help reduce and limit cracking due to the variations of above parameters.*

*RICH Fiber™ HD also improves durability and overall physical properties of concrete and mortar.*

*RICH Fiber™ HD fully disperses as individual filaments through out the mix. A one-pound dose of fiber provides a matrix of distributed reinforcing filaments, minimizing the distance between filaments, and resisting the formation of cracks.*

*Once distributed in the mix the fibers are virtually invisible. They will not protrude through the surface and require no additional finishing steps.*

### Applications

- ▶ Residential and commercial slabs, walkways, driveways, pavements
- ▶ Elevated slabs
- ▶ Structural concrete, mortars, stuccos, decorations...
- ▶ Precast
- ▶ Shotcrete
- ▶ Water projects

### Properties

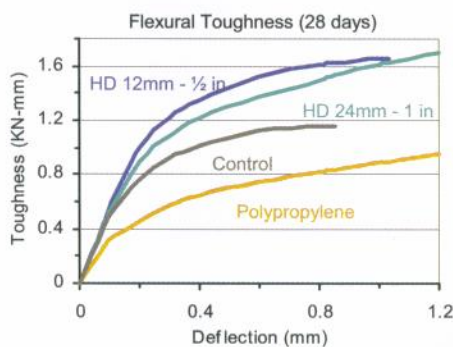
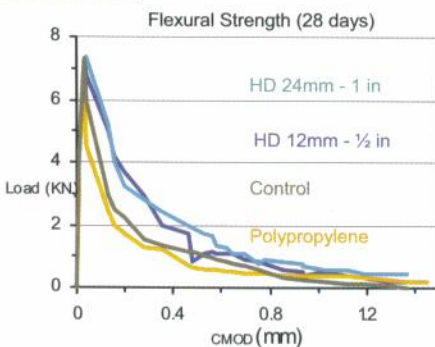
- ▶ Fast dispersion into mono-filaments
- ▶ Excellent compatibility with cement matrix
- ▶ Excellent workability
- ▶ Smooth finish
- ▶ Virtually invisible at surface
- ▶ Long term durability
- ▶ Fully effective from 1 lb/CY
- ▶ Safe and easy to handle
- ▶ Control cracking
- ▶ Proven technology

### Compliance

- ▶ RICH Fiber™ HD is rated by ICC-ES (ex ICBO) as an "admixture to reduce plastic shrinkage cracking in reinforced concrete and to reduce plastic and temperature cracking in structural plain concrete slabs on grade" (ICC-ES Report ESR-1226).
- ▶ City of Los Angeles Product Approved List
- ▶ State of Arizona Product Approved List
- ▶ Approved by University of British Columbia, Canada
- ▶ Affiliations to NRMCA, ACI, PCI, American General Contractors Association, Structural Engineer of America, Texas Society of Professional Engineers.

### Benefits

- ▶ Reduces Plastic Shrinkage Cracking
- ▶ Enhances Compressive Strength
- ▶ Enhances Flexural Strength
- ▶ Promotes uniform bleeding
- ▶ Decreases permeability
- ▶ Decreases freeze/thaw expansion
- ▶ Increases chemical resistance (e.g. deicing products)
- ▶ Extends serviceability of concrete
- ▶ Increases Abrasion Resistance



Tests performed at 1 lb/CY - 600 g/m<sup>3</sup> by:

- SGS, UK, 1995
- Arizona State University, USA, 2001

Test reports available on request.



▶ High Dispersion

▶ Proven technology

▶ Anti-cracking

▶ Overall improvement

▶ 1 lb/Cubic Yard  
600 g/m<sup>3</sup>

  
**RICH Fiber™**  
& Systems

Manufactured by:

**Material Properties**



**OCV™ Reinforcements**

Material Design	Alkali Resistant Glass Monofilament Fiber
Elementary Filament Diameter	14 microns
Specific Gravity	2.68
Color	Clear / white
Moisture Content	< 0.6% (ISO 3344)
Sizing	1.8 % for dispersion & bond with cement matrix (ISO 1887)
Softening point	860 °C • 1580 °F
Electrical Conductivity	Very low
Resistance to chemical aggressions	Very high – Non-corrosive
Modulus of elasticity	72 GPa • 10,000 KSI
Tenacity of a strand	1,700 Mpa • 250 KSI
Tenacity of a single filament	3,500 Mpa • 510 KSI

Distributed by:



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According to producers' data & American Concrete Institute

Material	Modulus of Elasticity of fiber	Tensile Strength of fiber	Specific gravity
RICH Fiber™ AR Glass Fibers	72 MPa • 10,000 KSI	1,700 MPa • 250 KSI	2.68
Polypropylene	3.5 MPa • 500 KSI	350 MPa • 50 KSI	0.91
High Modulus Polypropylene	7 MPa • 1,000 KSI	550 MPa • 80 KSI	0.91
PVA	29 MPa • 4,200 KSI	910 MPa • 130 KSI	1.3
Polyester	17 MPa • 2,500 KSI	1,000 MPa • 150 KSI	1.34
Nylon	5.2 MPa • 750 KSI	965 MPa • 140 KSI	1.14
Steel	200 MPa • 29,000 KSI	1,100 MPa • 160 KSI	7.2
Concrete	35 MPa • 5,000 KSI		2.4

Available lengths of RICH Fiber™ HD	6 mm ¼ in	12 mm ½ in	18 mm ¾ in
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**Dosage**

Abrasion resistance ◀	2 lb/CY	▶ Regular duty applications
Serviceability ◀	1.2 Kg/m <sup>3</sup>	
+		
Anti-cracking ◀	1 lb/CY	▶ Regular duty applications
Homogeneity ◀	600 g/m <sup>3</sup>	

**Recommendations**

- ▶ Add fibers at any time prior to pouring at the plant or on site
- ▶ Mix for 3 to 5 min on mixing speed after fiber is added
- ▶ Do not add water
- ▶ Do not increase joint spacing. Follow ACI guidelines
- ▶ Do not substitute RICH Fiber™ products for any structural reinforcement required by building codes.

**Packaging**

Packaging	Pallets per 20' ctr.	Levels per pallet	Box per pallet	Bags per box	Pallet Length	Pallet Width	Pallet Height	Pallet Net Weight
Bulk Cartons	20	3	48	N/A	45 in	45 in	43 in	1,920lb – 864 Kg
1 lb – 600g Bags				30	114 cm	114 cm	109 cm	1,440lb – 648 Kg

**Storage**

- ▶ RICH Fiber™ products should be stored in a dry place in its original packaging.

**Mini Specification**

RICH Fiber™ HD engineered Alkali Resistant fibers are specifically designed for reducing cracking in concrete and mortar. The addition rate is a minimum of 1.0 pound per cubic yard or 600 grams per cubic meter of concrete. The fibers control cracking caused by plastic shrinkage, plastic settlement, and thermal expansion and contraction in concrete. The fibers will also decrease permeability to moisture and increase resistance to impacts, abrasion, moisture, and shattering. The fiber manufacturer must document evidence of compliance with building codes in accordance with ICC-ES AC308 (see ESR 1226) and ASTM C1116, Type II, 4.1.2. Fibrous concrete reinforcement is manufactured by Owens Corning Vetrotex Reinforcements in an ISO 9001 Quality Management System and in a plant approved ISO 14001 for environmental care.

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