



# MATRIX HPS

## HIGH-PERFORMANCE SYNTHETICS

### PRODUCT DATA SHEET

#### MATRIX –HPS (High-Performance Synthetic Fiber)

MATRIX HPS are made of a high-performance polypropylene fibers. The high modulus, high strength fibers are distributed throughout the concrete to provide excellent crack control and add toughness, impact & fatigue resistance to the concrete matrix. These fibers are packaged in a pre-measured “water soluble bag” that offers owners, engineers, and contractors and easy way to provide a highly effective alternative to welded wire fabric.

#### MIXING – PLACING – FINISHING

- ◆ **Mixing** - Because of the water soluble packaging, MATRIX High-Performance Synthetics can easily be introduced into the concrete during or after the batching process. In most instances MATRIX HPS should be added before the concrete is batched. Mixing should conform to ASTM C94 standard specification for ready-mixed concrete.
- ◆ **Placing** - MATRIX HPS can be pumped and placed using conventional equipment. Hand screeds and vibratory laser screeds can be used, to place the concrete. At higher dosages, the use of a mid-range or high-range water reducer is recommended.
- ◆ **Finishing** - Normal finishing equipment & techniques can be used when finishing MATRIX HPS. Troweling blades should be kept at a flat angle for as long as possible to help to minimize the fibers on the surface.

#### TECHNICAL INFORMATION

##### PROPERTY

ASTM Specification

Material Type

Tensile Strength

Fiber Length

Average Aspect Ratio

Specific Gravity

Modulus of Elasticity

Melting Point

Absorption

Net Package Weight 1lb, 5 lbs

##### MATRIX – HPS

ASTM C-1116 Type III

100% Virgin Polypropylene

70 ksi minimum

1.25" to 1.5"

< 90

.92

minimum 1,250 ksi @ 70°

324° F

Nil

\*Always follow ACI guidelines as to joint locations and details. Do not use MATRIX HPS to exceed the recommendations of proven ACI methods. Please consult our sales or engineering department for more details or designs with MATRIX Hybrid Fibers

- Slabs-on-Ground
- Shopping Centers
- Hotels
- Schools
- Churches
- Light Composite Metal Decks



MATRIX HPS, High-Performance Synthetic Fibers  
**Mini-Specification: Section 03452**

MATRIX HPS Fibers will be used for as secondary reinforcement to provide for temperature and shrinkage reinforcement of the concrete.

1.01 **A. MATERIALS:**

Fibrous concrete shall be 100% virgin polypropylene fibers conforming to ASTM C-1116 Type III, With a minimum Length of 1.25" to 1.5". In addition, the fibers shall have a minimum tensile strength of 70 ksi. Material shall be packaged in water soluble bags as manufactured by FRC INDUSTRIES.

**B. MANUFACTURER:**

Fibers shall be *MATRIX HPS Fibers* manufactured by FRC Industries, or approved equal. FRC Industries \* P.O. Box 458 \* Freeport, FL 32439 \* 888-783-2517

**C. APPLICATION RATE:**

Application rate of HPS shall be determined by Engineer and placed on construction plans.

*REFERENCE DOCUMENTS*

- ACI 302.1R** \* Guide for Concrete Floor and Slab Construction.
- ACI 360R-92** \* Design of Slabs on Grade.
- ACI 544-1R** \* Fiber Reinforced Concrete
- ACI 544-3R** \* Guide for Specifying, Proportioning, Mixing, Placing, and Finishing Steel Fiber Reinforced Concrete.
- ASTM C94** \* Standard Specification for Ready-Mixed Concrete.
- ASTM C1116** \* Standard Specification for Fiber-Reinforced Concrete and Shotcrete.

**WARRANTY AND LIMITATION OF LIABILITY**

MATRIX HPS Fibres shall conform to FRC standards and specifications. FRC's sole liability for claim shall be limited to replacement of defective or nonconforming fibres. In no event shall FRC be liable for any incidental, consequential, or special damages.

**FRC Industries**  
Freeport, FL  
(888) 783-2517  
[www.frcindustries.com](http://www.frcindustries.com)

- Effective alternate to welded wire fabric
- Provides Uniform reinforcement
- Excellent reinforcing for restrained shrinkage
- Provides superb crack control