



MATRIX 23/1 Hybrid Blend

PRODUCT DATA SHEET

MATRIX 23/1 Steel / Poly Blend

MATRIX Hybrid Fibers are a blend of low carbon, cut sheet fibers and polypropylene synthetic fibers. The combination of the two proven fiber types provides a reinforcement system that addresses plastic shrinkage as well as restrained shrinkage in concrete slabs. Blending both fiber types into one, pre-measured “water soluble bag” offers an engineered, cost efficient way to provide a highly effective alternate to welded wire fabric. The 23/1 Hybrid Blends are uniformly distributed throughout the concrete to assure the owner, contractor, and engineer of excellent crack control.

MIXING – PLACING – FINISHING

- ◆ **Mixing** - Because of the water soluble packaging, MATRIX Hybrid Blends can easily be introduced into the concrete during or after the batching process. In some instances Steel / Poly Blends can be added before the concrete is batched. Mixing should conform to ASTM C94 standard specification for ready-mixed concrete.
- ◆ **Placing** - MATRIX Hybrid fibers can be pumped and placed using conventional equipment. Hand screeds can be used, but vibratory and laser screeds are recommended to provide added compaction and bury surface fibers
- ◆ **Finishing** - Normal finishing equipment & techniques can be used when finishing MATRIX Blended fibers. Troweling blades should be kept at a flat angle for as long as possible to insure a fiber free surface.

TECHNICAL INFORMATION

<u>PROPERTY</u>	<u>MATRIX – CS</u>	<u>SYNTHETIC FIBRES</u>
ASTM Specification	ASTM A820 Type II	ASTM C1116 Type III
Material Type	Low Carbon, Cut Sheet Fibers	Virgin Polypropylene
Tensile Strength	414—828 Mpa (60—120 ksi)	N/A
Fiber Length	25.0 mm (1.0")	1/2"
Average Thickness	.33 – .60 mm (0.13 – .025")	N/A
Average Aspect Ratio	<60	N/A
Specific Gravity	7.85	0.91
Modulus of Elasticity	29.0 x 10 ⁸ @ 70° F (20° C)	500 ksi
Melting Point	2760° F (1516° C)	324° F
Absorption	Nil	Nil
Net Package Weight	24.0 lbs	

*Always follow ACI guidelines as to joint locations and details. Do not use MATRIX Hybrid Blends 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
- Composite Metal Decks



MATRIX 23/1 Hybrid Blended Fibers
Mini-Specification: Section 03452

MATRIX Hybrid Blended 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 a blend of 100% virgin polypropylene fibers conforming to ASTM C-1116 and drawn wire steel fibers conforming to ASTM A-820 Type II. The blend must be packaged in a water soluble bag as manufactured by FRC Industries.

B. MANUFACTURER:

Blended Fibers shall be *MATRIX 23/1 Hybrid Fibers* manufactured by FRC Industries, or approved equal. FRC Industries * P.O. Box 458 * Freeport, FL 32439 * 888-783-2517

C. APPLICATION RATE:

Minimum rate of application shall be one MATRIX Hybrid Blend water soluble bag per cubic yard of concrete

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 A820** * Standard Specification for Steel Fibers for Fiber-Reinforced Concrete.
- ASTM C94** * Standard Specification for Ready-Mixed Concrete.
- ASTM C1116** * Standard Specification for Fiber-Reinforced Concrete and Shot-

WARRANTY AND LIMITATION OF LIABILITY

MATRIX 23/1 Hybrid Fibers shall conform to FRC standards and specifications. FRC's sole liability for claim shall be limited to replacement of defective or nonconforming fibers. In no event shall FRC be liable for any incidental, consequential, or special damages.

FRC INDUSTRIES
FREEPORT, FL
(888) 783-2517
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- Effective alternate to welded wire fabric
- Provides Uniform reinforcement
- Excellent reinforcing for restrained shrinkage
- Provides superb crack control