FIBER PRODUCTS FOR CONCRETE REINFORCEMENT

PSI FIBERSTRAND MICRO-SYNTHETIC FIBERS

PSI Fiberstrand Fibers are used for plastic shrinkage crack control and are ideally suited to secondary reinforcing applications for slabs and pre-cast concrete. They are available in various sizes and lengths of monofilament and fibrillated polypropylene.

- **PSI FIBERSTRAND 150**
- **PSI FIBERSTRAND F**

TUF-STRAND MICRO-SYNTHETIC FIBERS

TUF-STRAND Fibers can be used where an equivalent reinforcing option to steel fibers, wire mesh and light gage reinforcing bars are required in pre-cast concrete, slabs on grade, composite steel decks and shotcrete applications. Appropriate dosages are calculated by determining the engineering requirements of the existing design and providing an equivalent residual strength.

TUF-STRAND SF is a patented macro-synthetic fiber that is UL certified for composite steel deck construction and is used for replacement of limited structural steel in pre-cast, slabs on ground, pavements and shotcrete applications. Design Assistance can also be provided for determining appropriate fiber dosages for slab on ground projects designed in accordance with ACI 360 using our proprietary TUF-STRAND SF Software Program and accompanying Manual.

TUF-STRAND SF

- **ENGINEERED FIBER REPLACEMENT**
- **SOFTWARE DESIGN ASSISTANCE**
- **UL CERTIFIED FOR STEEL DECK CONSTRUCTION**

TUF-STRAND MaxTen™

- **WIRE MESH REPLACEMENT**
- **LIGHT REBAR REPLACEMENT**

PSI STEEL AND BLENDED FIBERS

SI Steel Fibers are used primarily for temperature and shrinkage crack control and limited structural applications in pre-cast concrete, slabs on grade, elevated structures and shotcrete applications. They are available in crimped (blended with or without synthetic micro-fibers) and hooked-end configurations.

- **PSI CRIMPED STEEL FIBER**
- **PSI STEEL FIBER C6560**

A&A Associated READY MIXED CONCRETE, INC.

Family Owned - Proudly made in the USA

For Fiber Reinforcement call: **800-PRE-MIXX**

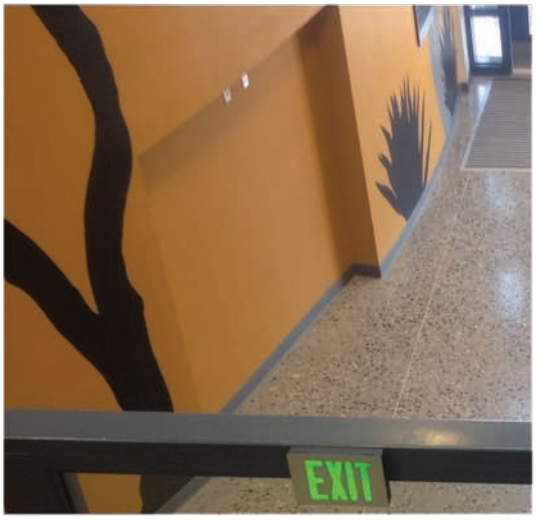
EUCLID Tuf-Strand SF®

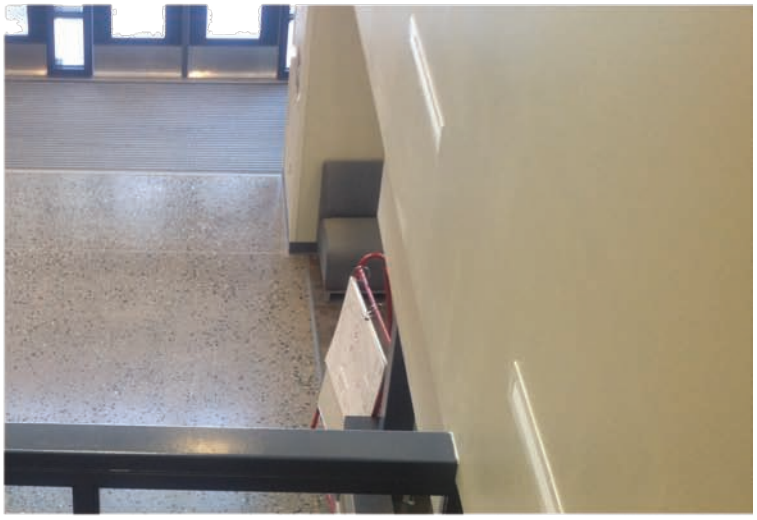
EUCLID CHEMICAL

DLR Group

DLR Group designed this two story school to be a near net-zero energy building. **Tuf-Strand SF®** was used to reinforce the architectural ground/polished interior floor system used on both the first and second floors. Whole Sale Floors worked with Euclid Chemical to utilize a sequence of specific grit diamond pads that achieved the desired surface look Fireside Elementary entryway and atrium has an added recycled glass aggregate component to give the floor an exceptionally vibrant appearance.

EUCLID FIBER SPOTLIGHT
Fireside Elementary School





PROJECT DATA:

LOCATION: Phoenix, AZ

APPLICATION: Slab on Grade & Elevated Deck

FIBER TYPE: **Tuf Strand SF®** @ 4 lbs./yd^3

ARCHITECT: DLR Group

CONCRETE CONTRACTOR: Sun Valley Masonry

CONCRETE PRODUCER: Rock Solid

TOTAL AREA: 88,660 square feet

- Non-corroding three-dimensional reinforcement.
- Increased flexural toughness, fatigue endurance and impact resistance.
- Potential time and cost savings when used as an alternate to conventional reinforcement.

Fireside Elementary School

EUCLIDCHEMICAL.COM -19218 Redwood Road, Cleveland, OH 44110 - Phone: **800/321-7628**

EUCLID FiberStrand F®

EUCLID CHEMICAL

EUCLID FIBER SPOTLIGHT
Hoover Dam Bypass Bridge

The Hoover Dam Bypass Bridge spans the Black Canyon and connects to the respective Arizona and Nevada approach highways nearly 900 feet above the Colorado River. Jobsite summer temperatures were extremely hot with dry winds.

FiberStrand F® fibers were used in the bridge deck concrete to reduce plastic shrinkage cracking.

PROJECT DATA:

LOCATION: Boulder City, Nevada

APPLICATION: Bridge Deck Paving.

FIBER TYPE: **FiberStrand F®** @ 1.5 lbs./yd³

GENERAL CONTRACTOR : **O**bayashi/PSM JV

DESIGN TEAM: T.Y. Lin International, HDR Engineering

MANAGEMENT TEAM: Federal HWY Administration
Arizona State DOT
Nevada State DOT

TOTAL AREA: 5,484 cubic yards.

- Controls and mitigates plastic shrinkage cracking.
- Reduces segregation and plastic settlement.
- Will not rust or corrode.

Hoover Dam Bypass Bridge

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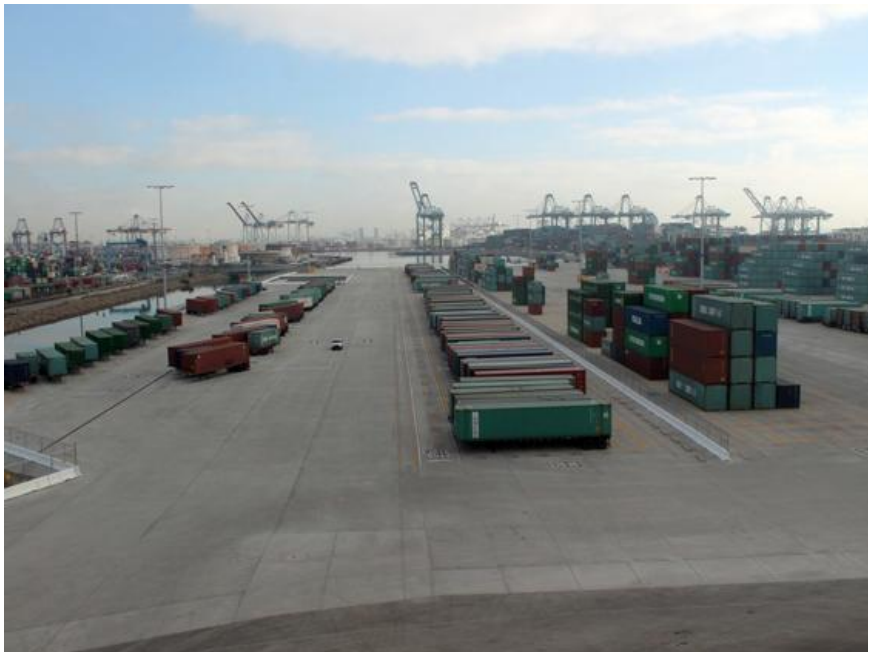
EUCLID Tuf-Strand MaxTen®



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EUCLID FIBER SPOTLIGHT
Port of Los Angeles Berth 102

Familiar shipping lines such as, Cosco, Hanjin, and Evergreen are serviced by the West Basin China Shipping Container at the Port of Los Angeles Berth 102. The goal was to ensure that the acres of concrete container wharf would endure and be sustainable for the years to come.

Tuf-Strand MaxTen® macro-synthetic fiber was used to increase the long term durability of the concrete.

Port of LA Berth 102

PROJECT DATA:

LOCATION: Port of Los Angeles

APPLICATION: Cargo Container Terminal Paving.

FIBER TYPE: **Tuf Strand MaxTen®**

CONTRACTOR: Sully-Miller Contracting Co.

ENGINEER: Port of Los Angeles Engineering Division

CONCRETE SUPPLIER: A & A Ready Mix

TOTAL AREA: 43,000 cubic yards.

- Three-dimensional reinforcement
- Increased flexural toughness, fatigue endurance & impact resistance
- Impact resistance improves joint durability

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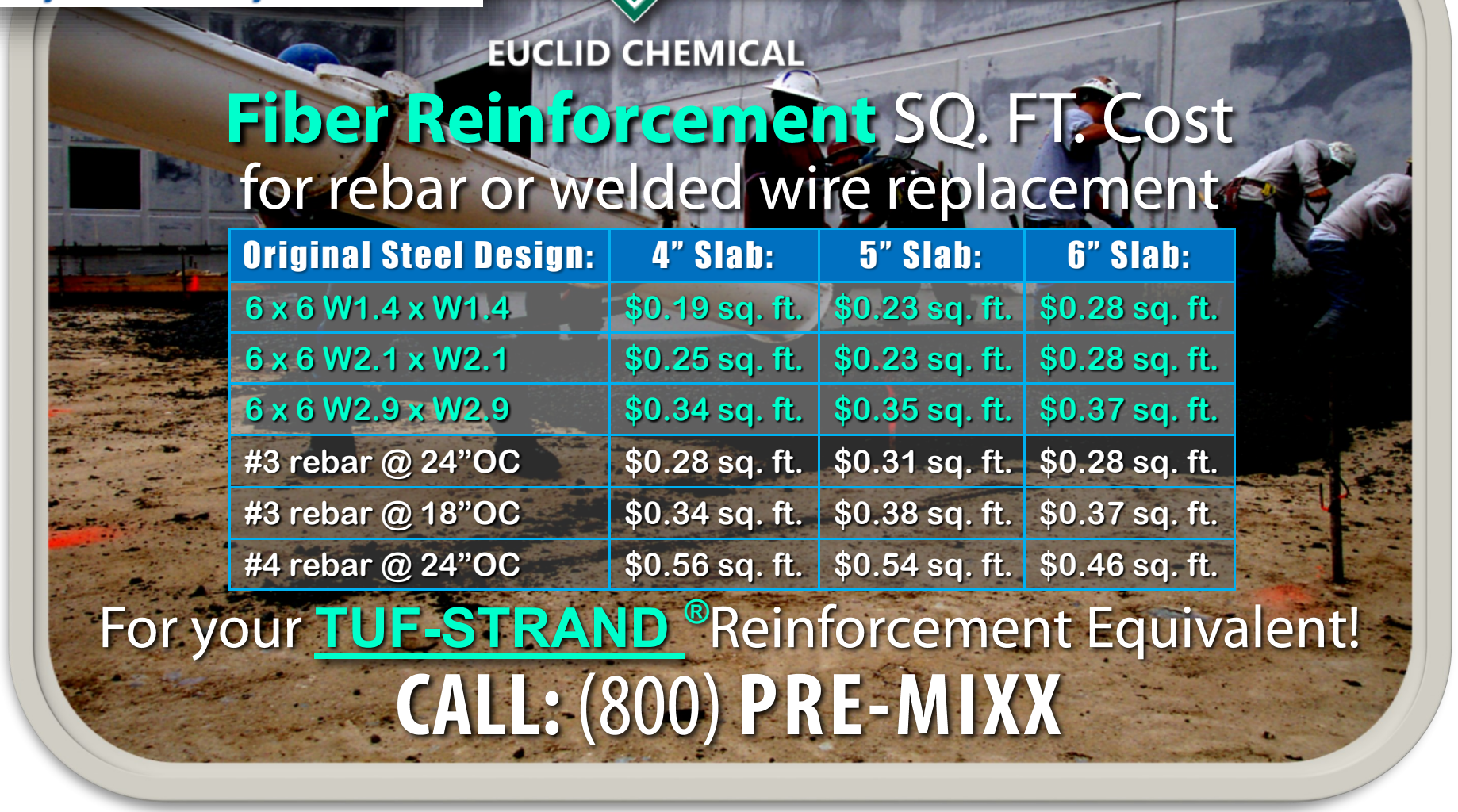
TUF-STRAND®

FIBER REINFORCEMENT BY EUCLID CHEMICAL



EUCLID CHEMICAL

Fiber Reinforcement SQ. FT. Cost for rebar or welded wire replacement

Original Steel Design:	4" Slab:	5" Slab:	6" Slab:
6 x 6 W1.4 x W1.4	$0.19 sq. ft.	$0.23 sq. ft.	$0.28 sq. ft.
6 x 6 W2.1 x W2.1	$0.25 sq. ft.	$0.23 sq. ft.	$0.28 sq. ft.
6 x 6 W2.9 x W2.9	$0.34 sq. ft.	$0.35 sq. ft.	$0.37 sq. ft.
#3 rebar @ 24"OC	$0.28 sq. ft.	$0.31 sq. ft.	$0.28 sq. ft.
#3 rebar @ 18"OC	$0.34 sq. ft.	$0.38 sq. ft.	$0.37 sq. ft.
#4 rebar @ 24"OC	$0.56 sq. ft.	$0.54 sq. ft.	$0.46 sq. ft.

For your TUF-STRAND ® Reinforcement Equivalent!

CALL: (800) PRE-MIXX

Note: The costs listed here are a general guideline for pricing. They were calculated assuming that specifications call for the steel wire mesh/rebar reinforcement be placed in the center of the slab. Specifications asking for the reinforcement to be placed in the top 1/3 of the slab would require a lower amount of fiber dosing, and thus the costs per square foot will be less than listed above. If you have questions regarding fiber placement/performance/further data sheets please contact your A&A Sales Representative. Our Fiber mixes for the reinforcement listed above can all be pumped, so whether you are tailgating or using a pump, A&A has you covered for increased savings. Lastly, remember that the above costs represent the total costs for concrete reinforcement. When placing wire mesh/rebar, you must take into account the costs of material and the costs of paying a crew to place the reinforcement, as well as the lost opportunity costs of being able to send that crew to prep another jobsite. Fiber is the better performing and cost saving alternative to concrete reinforcement.