



# Strux<sup>®</sup> & Sinta<sup>®</sup> Synthetic Fibers

Typical applications and benefits  
for fiber reinforced concrete



# MACRO VS. MICRO SYNTHETIC FIBERS

Macro synthetic fibers are typically used to provide temperature and drying shrinkage crack control as an alternative to welded wire reinforcement (WWR). Like WWR, their purpose is not to prevent cracks, but to minimize crack width opening. They are typically greater than 1.25 inches (32 mm) long with addition rates between 3 and 15 lb/yd<sup>3</sup> (1.8 to 6.0 kg/m<sup>3</sup>) depending on specific design parameters.

Micro synthetic fibers are used to control plastic shrinkage cracks that occur prior to an initial set of concrete. Micro fibers are typically less than 1.5 inches (38 mm) long, with addition rates between 0.5 and 1.5 lb/yd<sup>3</sup> (0.3 to 0.9 kg/m<sup>3</sup>).

**STRUX<sup>®</sup>**  
**MACRO**  
**FIBERS**

TEMPERATURE &  
 SHRINKAGE CONTROL

STRUX<sup>®</sup> 90/40  
 STRUX<sup>®</sup> 75/32  
 STRUX<sup>®</sup> BT50

**SINTA<sup>®</sup>**  
**MICRO**  
**FIBERS**

PLASTIC SHRINKAGE  
 CONTROL

SINTA<sup>®</sup> M2219  
 SINTA<sup>®</sup> M3019  
 SINTA<sup>®</sup> F19  
 SINTA<sup>®</sup> F38

## COMPARISON CHARTS

### Typical Applications and Benefits of Synthetic Fibers

	Macro Fibers			Micro Fibers				Welded Wire Reinforcement
	Temperature and Drying Shrinkage Control and Plastic Shrinkage Control			Plastic Shrinkage Control				Temperature and Shrinkage Control
	STRUX <sup>®</sup> 90/40	STRUX <sup>®</sup> 75/32	STRUX <sup>®</sup> BT 50	SINTA <sup>®</sup> M2219	SINTA <sup>®</sup> M3019	SINTA <sup>®</sup> F19	SINTA <sup>®</sup> F38	WWR 6x6 - W1.4 x 1.4
Product Visual								
Material	Polyolefin	Polyolefin	Polyolefin	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Steel
Configuration	Monofilament Tape-Style	Monofilament Tape-Style	Monofilament Bi-Tapered	Monofilament	Monofilament	Fibrillated	Fibrillated	Rolled or Sheet
Length	1.55 in (40 mm)	1.25 in (32 mm)	2 in (50 mm)	.75 in (19 mm)	.75 in (19 mm)	.75 in (19 mm)	1.5 in (38 mm)	n/a
Elastic Modulus	1390 ksi (9.5 GPa)	1390 ksi (9.5 GPa)	1000 ksi (7.0 GPa)	500 ksi (3.45 GPa)	500 ksi (3.45 GPa)	725 ksi (5.0 GPa)	725 ksi (5.0 GPa)	29000 ksi (200 GPa)
Tensile Strength	90 ksi (620 MPa)	90 ksi (620 MPa)	80 ksi (550 MPa)	42 ksi (290 MPa)	42 ksi (290 MPa)	44 ksi (300 MPa)	44 ksi (300 MPa)	65 ksi (450 MPa)
Specific Gravity	0.92	0.92	0.92	0.905	0.905	0.905	0.905	7.8
Number of Fibers Per Pound (Nominal)	85,000	106,000	27,000	70 Million	30 Million	20 - 30 Million	10-15 Million	n/a
Typical Dosage / Placement	3-10 lb/yd <sup>3</sup> 1.8-5.9 kg/m <sup>3</sup>	3-7.5 lb/yd <sup>3</sup> 1.8-4.4 kg/m <sup>3</sup>	7-15 lb/yd <sup>3</sup> 4.2-8.9 kg/m <sup>3</sup>	0.5-1.0 lb/yd <sup>3</sup> 0.3-0.6 kg/m <sup>3</sup>	0.75-1.5 lb/yd <sup>3</sup> 0.4-0.9 kg/m <sup>3</sup>	1-3 lb/yd <sup>3</sup> 0.6-1.8 kg/m <sup>3</sup>	1-3 lb/yd <sup>3</sup> 0.6-1.8 kg/m <sup>3</sup>	Single layer (Middle to Upper Third)





**SAINT-GOBAIN**  
**CONSTRUCTION CHEMICALS**  
CHRYSO • 3958 Ruger Drive •  
Royse City • TX 75189 • USA  
Tel: +1 972 772 6010  
[www.chrysoinc.com](http://www.chrysoinc.com)

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