

STRUX[®] 85/50

Fibre Reinforcement

Product Description

STRUX 85/50 Fibre Reinforcement is a unique form of high strength, high modulus synthetic reinforcement that is distributed throughout the concrete matrix. It consists of synthetic fibres 50 mm in length with an aspect ratio of 85 that have specifically been designed to ensure ease of use and rapid dispersion in concrete. STRUX 85/50 Fibre Reinforcement is used in concrete to improve the material properties including toughness (post crack energy absorption), impact and fatigue resistance.

Uses

STRUX 85/50 may be used in a variety of ready mix, precast and shotcrete applications including: slabs on grade, bridge decks, overlays, whitetopping, pipes, vaults, septic tanks, tunnel linings, slope stabilization, and swimming pools.

Benefits & Advantages

When added to shotcrete and concrete, the primary benefit of STRUX 85/50 is a significant improvement in flexural toughness as outlined in **Table 1**.

STRUX 85/50 has been designed to provide:

- Safety
- Ductility
- Durability
- Crack control
- Energy absorption
- Stain free concrete surfaces
- Quick, easy and safe application
- An efficient and cost effective reinforcement alternative

Addition Rates

STRUX 85/50 addition rates are dependent on the specific application and desired properties and will typically vary between 3.0 to 9.0 kg/m³.

Mix Design and Mixing Requirements

The utilization of fibres generally requires the use of a superplasticizer such as ADVA to restore the required workability to fibre reinforced concrete.

STRUX 85/50 may be added to concrete at any point during the batching or mixing process.

STRUX 85/50 should be added at a maximum rate of one bag every 30 seconds. After fibre addition the concrete should be mixed at the recommended mixing speed for a minimum of 70 revolutions to ensure adequate fibre dispersion.

Compatibility

STRUX 85/50 is compatible with all GCP admixtures. Their action in concrete is mechanical and will not affect the hydration process of the cement and therefore will not effect the compressive strength. Each liquid admixture should be added separately to the concrete mix.

Packaging and Dispensing

STRUX 85/50 is available in 4.5 kg bags.

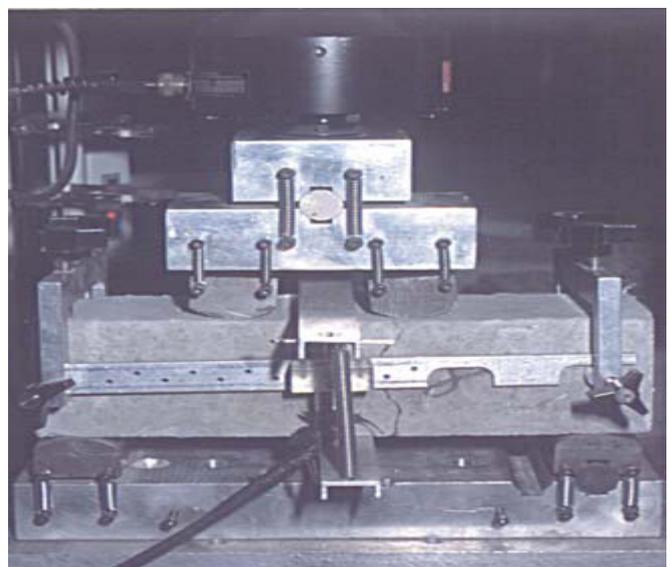


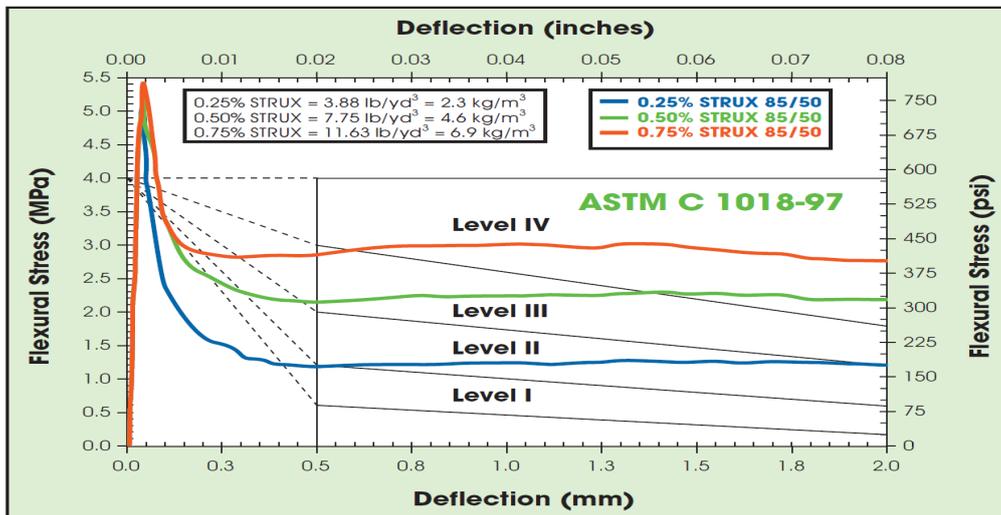
Table 1

Typical Flexural Strength and Toughness results that can be expected from a 28 MPa (4000 psi), air entrained, concrete at 28 days.

STRUX 85/50 Dosage Rate	Defl. @ 25 mil crack (mm)	Specimen Cross Section		Max. Load (kN)	Flexural Strength (MPa)	ASTM C 1018-97 Toughness Indices					ASTM C 1018-97 Residual Strength Factors					JSCE* (MPa)
		Base (mm)	Height (mm)			I ₅	I ₁₀	I ₂₀	I ₃₀	I ₆₀	R _{5,10}	R _{10,20}	R _{20,30}	R _{30,60}	R _{10,50}	
Control	0.038	102.1	102.0	19.20	5.50	2.88	3.94	4.89	5.30	5.73	21.3	9.5	4.1	1.4	4.3	0.35
0.25%	0.037	101.8	103.5	18.60	5.19	3.15	4.76	7.12	9.17	15.37	32.1	23.6	20.5	20.7	21.4	1.44
0.50%	0.038	102.0	103.8	19.30	5.37	3.51	5.63	9.24	12.60	23.07	42.4	36.1	33.6	34.9	34.7	2.42
0.75%	0.039	102.1	103.7	20.20	5.60	3.49	5.72	10.00	14.36	27.93	44.5	42.8	43.6	45.2	44.2	3.07

STRUX 85/50 Dosage Rate	Defl. @ crack (mil)	Specimen Cross Section		Max. Load (lbf)	Flexural Strength (psi)	ASTM C 1018-97 Toughness Indices					ASTM C 1018-97 Residual Strength Factors					JSCE* (psi)
		Base (in.)	Height (in.)			I ₅	I ₁₀	I ₂₀	I ₃₀	I ₆₀	R _{5,10}	R _{10,20}	R _{20,30}	R _{30,60}	R _{10,50}	
Control	1.50	3.98	3.98	4316	798	2.88	3.94	4.89	5.30	5.73	21.3	9.5	4.1	1.4	4.3	51
0.25%	1.46	3.97	4.04	4181	753	3.15	4.76	7.12	9.17	15.37	32.1	23.6	20.5	20.7	21.4	209
0.50%	1.50	3.98	4.05	4339	779	3.51	5.63	9.24	12.60	23.07	42.4	36.1	33.6	34.9	34.7	351
0.75%	1.54	3.98	4.04	4541	812	3.49	5.72	10.00	14.36	27.93	44.5	42.8	43.6	45.2	44.2	445

* Japanese Society for Civil Engineering



gcpat.com | Customer Service: Tel: 01925 855330 Fax: 01925 855350

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate, and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations, and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right.

STRUX is a trademark, which may be registered in the United States and/or other countries, of GCP Applied Technologies Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2016 GCP Applied Technologies Inc. All rights reserved.

GCP Applied Technologies Inc., 62 Whittemore Avenue, Cambridge, MA 02140 USA.

GCP Applied Technologies (UK) Ltd., 830 Birchwood Boulevard, Birchwood, Warrington, WA3 7QZ United Kingdom

GCP0082_STRUX-85-50_GB_UK_0817 al (mod)

