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**Product Description** FIBERSTRUCT 44 is a high performance synthetic structural macrofiber, engineered to reinforce concrete from its early ages to its life cycle. The roughness in the surface increases the bonding with the concrete paste, creating a composite material, that increases the concrete's mechanical properties, these new properties are known as toughness or residual strength and can be used for structural design purposes.

In the plastic stage of concrete, FIBERSTRUCT 44 can substitute microfibers, since the 3D reinforcement prevents sedimentation.

In the hardened stage of concrete, FIBERSTRUCT 44 can substitute steel mesh/fibers as a temperature and shrinkage reinforcement, since it increases the flexural and tensile residual strength of the concrete.

In the life cycle of the concrete structure, FIBERSTRUCT 44 surpasses the steel mesh/fibers, since it is a durable non corrosive reinforcement, increases the fatigue and impact strength, its multiple fiber-reinforcement reduces the quantity and length of the cracks, providing load transfer between them.

FIBERSTRUCT 44 is the future for a sustainable world, it can reduce the CO<sub>2</sub> emissions of a traditional steel-reinforced slab in almost 10 times, since it is manufactured with a polymer that is almost 9 times less dense than steel.

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**Applications** FIBERSTRUCT 44 can be use in almost any type of concrete structure, particularly in pavements, flooring, steel decks, shotcrete and precast.

Paving, FIBERSTRUCT 44 applies for the ACPA's (American Concrete Pavement Association) software Street Pave 12, that uses the residual strength of concrete provided by macrofibers to design optimized pavements.

Flooring, FIBERSTRUCT 44 applies for the minimum dosage recommended in ACI 544.4R-18 "Guide to design with fiber-reinforced concrete" in Chapter 5, and for the design's principles and tables in ACI 360-10 "Guide to design slabs-on-ground" in Chapter 11

Steel deck, FIBERSTRUCT 44 applies for the minimum dosage recommended in the ANSI/Steel Deck Institute C-2017 Section 2.4.B.15.a.3.

Shotcrete, FIBERSTRUCT 44 can comply with the different toughnesses needed in the ASTM C-1550 round-panel-40mm-deformation, to satisfy the different types of supports and deformations expected.

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**Packaging** FIBERSTRUCT 44 is packed in recycled paper bags, in different dosifications depending in the pounds per cubic yard needed per project, contact your FIBERSTRUCT COMPANY agent for exact bags per pallet.

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**Installation** FIBERSTRUCT 44 is and easy to mix reinforcement, applicable in the concrete plant or at the ready-mix truck. Normal dosages go from 2 to 8 Lb/yd<sup>3</sup> (1.2 to 4.8 Kg/m<sup>3</sup>), depending on the application. For example, 2 Lb/yd<sup>3</sup> (1.2 Kg/m<sup>3</sup>) applies for sidewalks with a steel ratio of 0.04% and 8 Lb/yd<sup>3</sup> (4.8 Kg/m<sup>3</sup>) will apply for a severe dynamic loading floor with a steel ratio of 0.18%.

Contact your FIBERSTRUCT COMPANY agent for structural designs and dosage recommendation.

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**Physical Properties** FIBERSTRUCT 44 is a 1.75 inches embossed-surface synthetic macrofiber.

Complies with ASTM C-1116 4.1.3 Type III Synthetic Fiber Reinforced Concrete, since its raw material is a polyolefin with a 0.905 g/cm<sup>3</sup> density and it is resistant to alkali presented in the cement paste and the substances presented in admixtures.

Surpasses with the minimums needed to be considered a structural synthetic fiber, detailed in ACI 544.4R-18 3.1.2, such as: equivalent diameter, tensile strength and Young's modulus, contact your FIBERSTRUCT COMPANY agent for detailed information.

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**Certifications** FIBERSTRUCT 44 has been tested in various residual strength and toughness methods for fiber reinforced concrete, such as: ASTM, ACI, EN, and NMX (ASTM C-1609, ASTM-C1550 and so). Contact your FIBERSTRUCT COMPANY agent for more values and designs.

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**Warranty** FIBERSTRUCT 44 is manufactured in accordance with the requirements of the standard ISO-9001:2015, in the "manufacture of concrete structural macrofiber" and therefore guarantees a consistently high quality.

FIBERSTRUCT COMPANY does not have any control over production processes using FIBERSTRUCT 44. Therefore, FIBERSTRUCT COMPANY declines any liability for the associated end products.

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