PNE® ES-6660

Crimped-end Steel Fibers for Concrete Reinforcement

Product Description

PIONEER® PNE® ES-6660 steel fibers are made from high-strength steel wire and are specifically designed for reinforcing concrete structures. Its unique hooked-end design ensures excellent dispersion within the concrete and strong bonding with the concrete matrix, creating a three-dimensional reinforcement system. PIONEER® PNE® ES-6660 steel fibers enhance concrete's crack resistance, bending toughness, impact resistance, and fatigue durability, thereby improving the overall performance of the concrete.

Uses

PIONEER® PNE® ES-6660 can serve as a safe and straightforward alternative to wire mesh and rebar for various ready-mix and precast concrete applications. It is recommended for use in the following concrete structures:

- Industrial flooring, commercial flooring
- Residential foundations, basement walls
- Sidewalks, sub-base layers
- Tunnel precast segments, tunnel final linings
- Massive concrete structures
- Surface layers, footings/foundations
- Precast elements
- Shotcrete

Product Advantages

PIONEER® PNE® ES-6660 is a structural reinforcement material for concrete and shotcrete, with the following key features:

- Provides a three-dimensional reinforcement system for concrete.
- Eliminates the need for welded wire reinforcement (WWR) and small-diameter rebar as secondary reinforcement.
- Replaces or partially replaces traditional reinforcement in concrete.
- Enhances concrete's crack resistance, ductility, energy absorption, and toughness.
- Improves impact resistance, fatigue resistance, and shear strength of concrete.
- Reduces shrinkage and settlement cracking in concrete.
- Shortens construction time for floor slabs by eliminating the need to place, cut, and position traditional rebar.
- Supports sustainable construction practices.Ideal for use in pumped or shotcrete applications.

Compliance and Certification

- Meets ASTM A820/A820M, Type II chopped fibers
- Meets ASTM C1116/C1116M, Type I fiber-reinforced concrete

Physical Properties

- Material: Steel
- Density: 7.85
- Fiber Type: Crimped-end Steel Fiber
- Length: 2.36 inch (60mm)
- Equivalent Diameter: 0.036 inch (0.9mm)
- Aspect Ratio: 66
- Tensile Strength: 200 ksi (1360 MPa)

Addition Rates

The dosage of PIONEER® PNE® ES-6660 will vary depending on the application type and project performance requirements. The standard recommended dosage for PIONEER® PNE® ES-6660 is 25 to 75 pounds per cubic yard (15 to 45 kilograms per cubic meter) of concrete. For specific dosage recommendations based on your application and project needs, please contact your PIONEER® representative for technical support.

Packaging and Storage

PIONEER® PNE® ES-6660 is packaged in 55-pound (25-kilogram) polyethylene-lined paper bags, making it easy to handle and use.

Shelf Life and Storage Conditions

The product has a shelf life of 5 years when stored in dry conditions.
Pallets should be protected from rain and snow. Do not stack pallets on top of each other.

Technical Support

PIONEER® PNE® ES-6660 complies with ACI 544.4R-18 - Guide to Design with Fiber-Reinforced Concrete and ACI 506.1R-08 - Guide to Fiber-Reinforced Shotcrete. These guides provide detailed information on design methods, material selection, construction practices, and performance evaluation for fiber-reinforced concrete, including steel fiber-reinforced concrete.

PIONEER®'s fiber experts will assist you in developing a technical plan using steel fibers. Fill out the form below to receive a detailed report that will help address your project design and fiber selection needs. We guarantee that all your information will be kept confidential.