

# PNE® CS-4025

## Wave-shaped Steel Fibers for Concrete Reinforcement

### Product Description

PIONEER® PNE® CS-4025 steel fibers are designed for reinforcing concrete structures. Their unique wave-like design ensures good dispersion within the concrete and strong bonding with the concrete matrix, creating a three-dimensional reinforcement system. PIONEER® PNE® CS-4025 steel fibers enhance the crack resistance, bending toughness, impact resistance, and fatigue durability of concrete, leading to improved overall performance.

### Uses

PIONEER® PNE® CS-4025 can serve as a safe and simple alternative to metal mesh and rebar in various ready-mix and precast applications. It is recommended for use in the following concrete structures:

- Industrial and warehouse floors
- Commercial slab construction
- Concrete pavements
- White topping and overlays
- Thin-walled precast concrete
- Shotcrete
- Composite metal decking

## Product Advantages

PIONEER® PNE® CS-4025 is a structural reinforcement material for concrete and shotcrete. Its main features include:

- Provides a three-dimensional reinforcement system for concrete.
- Replaces or partially replaces traditional rebar in concrete.
- Enhances crack resistance, ductility, energy absorption, and toughness of the concrete.
- Improves impact resistance, fatigue durability, and shear strength.
- Reduces shrinkage and settlement cracking in concrete.
- Shortens flooring installation time—eliminates the need for placement, cutting, and handling of traditional rebar.
- Easy to finish.

## 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: Wave-shaped Steel Fiber
- Length: 1.0 inch (25mm)
- Equivalent Diameter: 0.02 inch (0.5mm)
- Aspect Ratio: 40
- Tensile Strength: 50-100 ksi (340 - 685 MPa)

## Addition Rates

The amount of PIONEER® PNE® CS-4025 will vary depending on the application type and project performance requirements. The standard recommended dosage is 25-75 pounds per cubic yard (15-45 kilograms per cubic meter) of concrete. For specific dosage based on application type and project needs, please contact your PIONEER® representative for technical support.

## Packaging and Storage

PIONEER® PNE® CS-4025 is packaged in 55-pound (25-kilogram) polyethylene-lined paper bags for easy handling 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® CS-4025 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.