

## OPTIMET® STEEL FIBRES

### The Most Advanced Steel Fibre Reinforcement for Concrete Pavements, Slabs on Grade, Precast...

#### Optimet® Steel Fibres define concrete's efficiency

Optimet® Steel Fibres have been engineered to meet the high demand for optimized Steel Fibres characteristics. The optimized fibre configuration, in combination with the tensile strength enhancement of the wire drawing operation, enable it to build up the necessary strength required to resist stresses induced by the concrete. The ultimate result is a fibre that meets your criteria;

- ▶ **Optimized Designs / Performances**
- ▶ **Cost Efficiency / User Friendly**

#### Optimet® Steel Fibre is fully optimized

Engineered by some of the most prestigious researchers in the concrete industry, Optimet® patented design with high Pull Out resistance will meet the highest performance requirements in the industry.

#### Optimet® Fibres meet ASTM A-820 Type 1

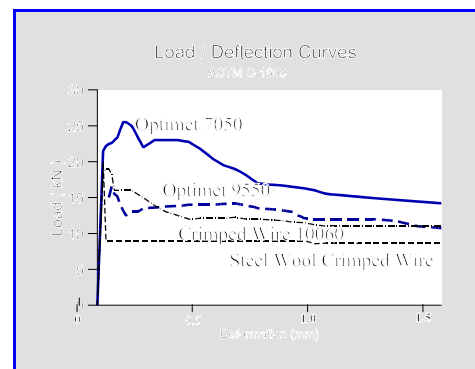
Optimet® Fibres are made from high tensile cold drawn steel wire with a minimum Ultimate Tensile Strength 1,100 to 1,500 MPa and are available in the following configurations.

Fibre Denomination	Length mm	Diameter mm	Aspect Ratio
Optimet® 9550	50	0.92	55
Optimet® 11050	50	1.08	45
Optimet® 7050**	50	0.75	65
Optimet® 7030**	30	0.70	45

\*\* Special Order

#### 3- D Reinforcement = Toughness

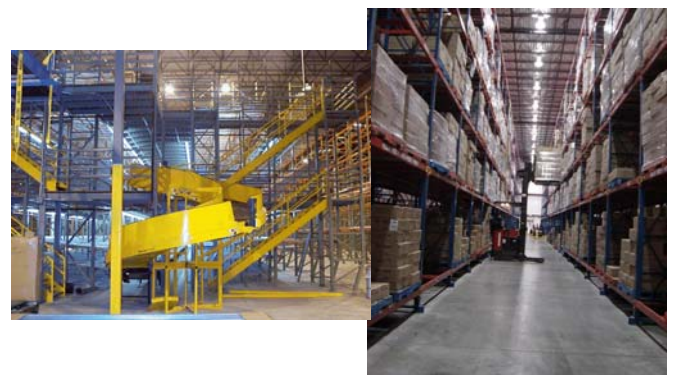
Steel fibres are used as a 3 dimensional concrete reinforcement because of their ability to increase the energy absorption capability of an already brittle concrete matrix. Optimet has undergone a thorough optimization program enabling end users to benefit from a true cost / performance ratio and a user friendly product resulting in ultimate strength, ductility and performance.



#### Toughness

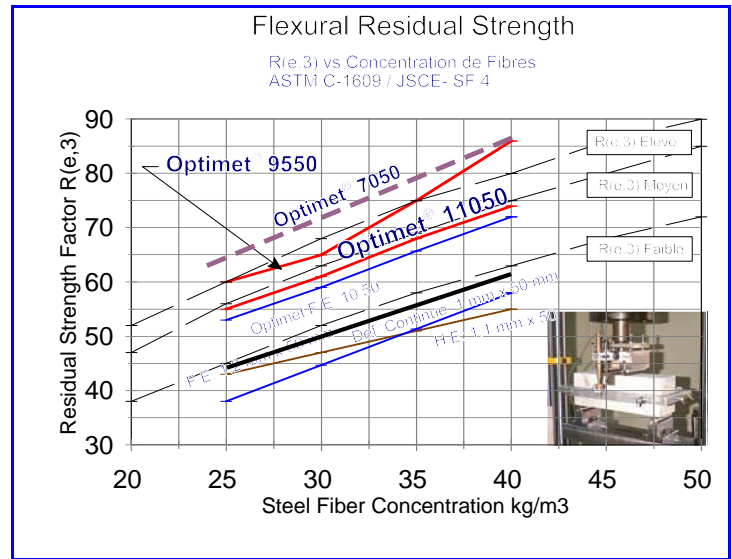
Flexural Toughness is the most commonly used property while designing SFRC Slabs on Grade, Highway Pavements, Shotcrete and etc. It is measured by testing concrete beams using ASTM C-1609 and C1399. The above figure represents the true 3-D dispersion obtained with Optimet compared to a 2-D obtained with a conventional reinforcement.

In addition, Pull-Out and flexural toughness tests of **Optimet®** Steel Fibres clearly demonstrate their superiority in resisting tensile movement and therefore transferring to the concrete matrix maximum post crack tensile strength.



Load Deflection curves generated when testing SFRC with ASTM C-1609 demonstrate **Optimet**®'s superiority in flexural toughness performance with no finishing constraints compared to other steel fibres which were considered, up to this date as effective fibres.

Using load deflection data Residual Flexural Toughness R(e,3) values are calculated. Results presented on the chart (left) show that in equal concentration, **Optimet**® 7050 and 9550 have superior Flexural Toughness capacity compared to other fibres in its category. **Optimet**® 7050 and 9550 will provide a concrete composite with very high Toughness Strength, allowing designers to design with great confidence using higher Allowable Flexural Strength in their designs.



**Applications**

The usefulness of fibres in civil engineering construction is indisputable. For more than forty years, Fibre Reinforced Concrete has so far been successfully used in;



- Slabs on Grade - Extended Joint Slabs on Grade*
- Highway Pavements - Bridge Deck Overlays*
- Airport Pavements - Mining*
- Thin and Thick Overlays - Shotcrete*
- Precast - Offshore Structures*
- Footings - Hydraulic Structures - Seismic Structures*
- Crash Barriers - Machine, Equipment Foundations*



**Handling**

In order to obtain a uniform fibre distribution, fibres must be introduced gradually into the concrete mix. Furthermore it might be necessary to increase the concrete slump prior to adding fibres to the concrete. Using a conveyor of fibre dispenser or blower will facilitate the fibre introduction. Please consult **Optimet**’s document: Handling and Procedure:



**Specifications**

Concrete shall be reinforced with **Optimet**® Steel Fibres in the concentration indicated on Engineering drawings or specifications. Fibre shall comply to ASTM A-8220 Type1; Cold Drawn Wire, and made with steel wire of 1200 MPa Tensile strength.

**Standard Packaging**

Box or bags size: 25 kg

**Storage**

Steel fibres must be stored in a dry area.



*Whatever your needs or application  
contact us so that we can assist you*

**Optimet® Concrete Products**  
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