

Concrete/Shotcrete Construction

Concrete Slabs-On-Ground

Concrete Slabs-On-Composite Steel Deck

Wet Method Shotcrete

Dry Method Shotcrete

Secondary Reinforcement

Section 3240: Steel Fiber As Secondary Reinforcement

Definition: Secondary Reinforcement The definition for secondary/temperature-shrinkage reinforcement per ACI 116 is: That reinforcement specified to hold the concrete together after it cracks. Said reinforcement is not used in the structural design of the cross-section of the concrete element.

For the purpose of this specification steel fibers used as secondary reinforcement in concrete are carbon steel fibers that are manufactured from either drawn wire or slit sheet steel.

The steel fibers specified shall conform to the requirements of ASTM A820 and C1116, Section 4.1.1, as well as ICBO ES Acceptance Criteria 208. These specifications apply to the use of steel fibers as secondary reinforcement in concrete. At the request of the project engineer the steel fiber vendor shall furnish a Letter of Certification stating compliance with these specifications and signed by a registered Professional Engineer.

Steel fibers shall be specified as either Type I (drawn wire) or Type II (slit sheet). The length of the steel fiber may be specified or left as an option based on the physical properties of the steel fiber reinforced concrete required. The configuration of the steel fiber (straight, continuously deformed, hooked end, etc) may be specified or left as an option based on the physical properties of the steel fiber reinforced concrete required.

Dosage rate shall be determined based on the specific application. The dosage rate shall be reported in pounds per cubic yard or kilograms per cubic meter. The use of the steel fiber shall be delineated as a secondary reinforcement or a contributor to the flexural strength of the concrete cross-section.

The determination of the dosage level for applications where the steel fibers will contribute to the flexural strength of the concrete cross-section can be furnished by the technical support group of the steel fiber marketing company.

It is recommended that the steel fibers be added and mixed at the concrete batch plant for optimum uniformity. The vendor shall furnish instructions relating proper procedures for adding and mixing the steel fibers. The concrete producer shall list the type and quantity of steel fiber added on each delivery ticket.

The ready-mix producer of record shall provide the project engineer, concrete contractor and project manager with a set of literature for the steel fiber to be furnished.

Actual Specification: (Type I and/or Type II) steel fiber meeting the requirements of (ASTM A820 and/or C1116 and/or ICBO ES AC 208) with a length of (inches and/or millimeters) and (show configuration) shall be introduced to the concrete at a dosage rate of (lbs/cy and/or kgs/cubic meter). Additional engineering property requirements are as follows...*here the engineer shall insert the test requirements such as flexural strength, average residual strength or toughness index or other engineering properties.*

A source complying with this specification:

Manufacturer: Nycon, Inc, 101 Cross Street, Westerly, RI 02891
Phone: 800 456 9266
Product Names: NyconSF
Website: www.nycon.com

Technical questions should be directed to Nycon, Inc.