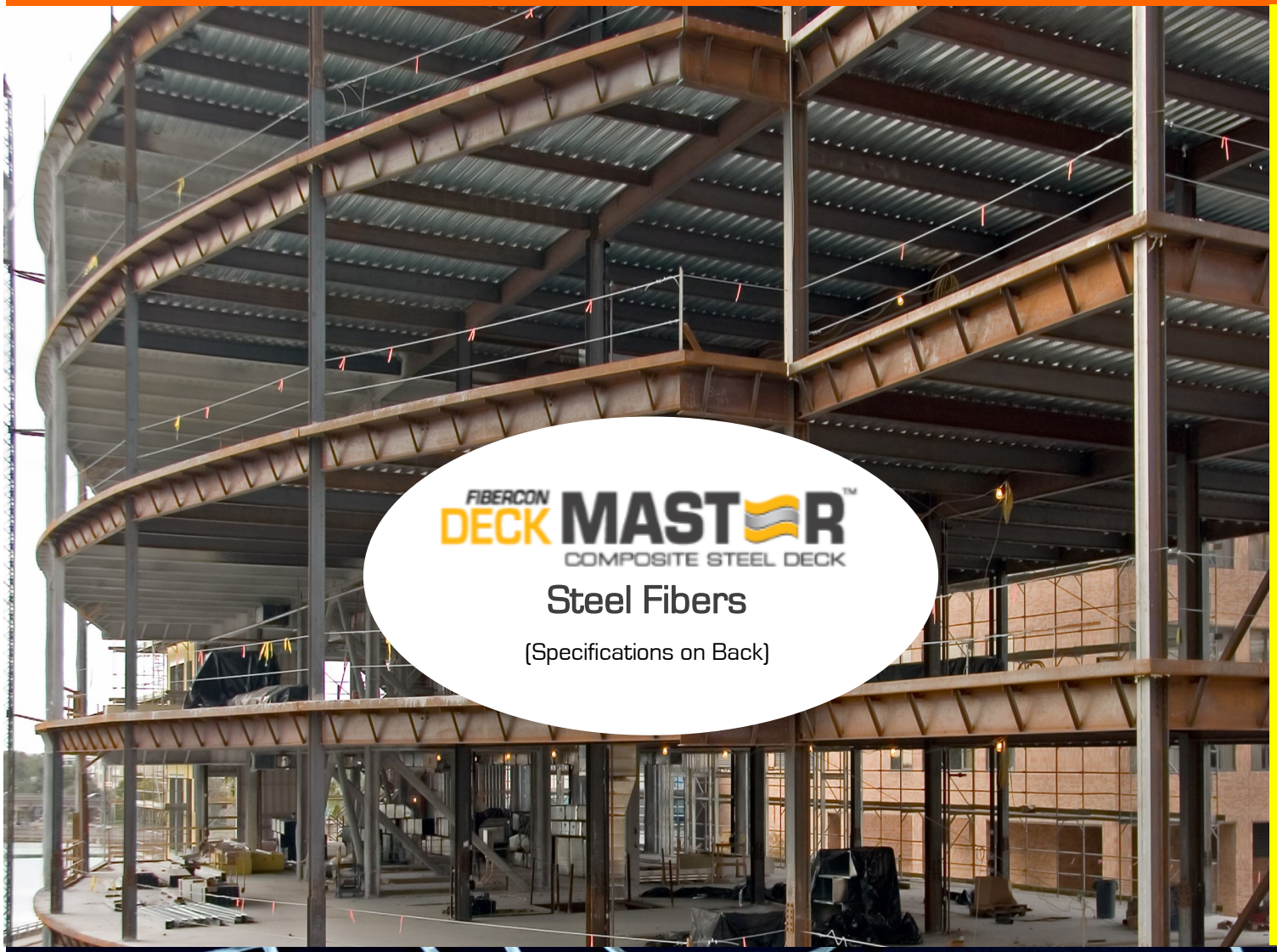
STEEL REINFORCING FIBERS – CONCRETE

FOR COMPOSITE STEEL DECKS

world leader in steel fiber reinforcing technologies since 1972



FIBERCON DECK MASTER™
COMPOSITE STEEL DECK

Steel Fibers

(Specifications on Back)

VS.

"Just Mix & Pump"

- **Eliminate wire mesh and chairs**
  - No placing costs
  - No moving/storage of mesh
- **Safety**
  - No workman's comp due to tripping
- **No Bolsters**

FIRST IN FIBER

The new IBC and ACI 318 reference ANSI/SDIC1.0 specification from the Steel Deck Institute for the design of composite steel decks. This specification allows the use of steel fibers at a minimum dosage of 25 pounds per cubic yard. More fibers may be added for specific applications per manufacturers recommendation. DeckMaster can be changed to meet any fiber dosage requirement from 25 pounds to 50 pounds per cubic yard of concrete.

Excerpts

AMERICAN NATIONAL STANDARDS INSTITUTE/ STEEL DECK INSTITUTE

C-2011 Standard for **Composite Steel Floor Deck - Slabs**

(2.1 Material)

Page 5, Section D **Concrete Reinforcement**

5. Discontinuous fiber reinforcement shall conform to the following:
   a. Steel fibers: ASTM A820.

(2.4 Design)

Page 16-17 **Reinforcement for Temperature and Shrinkage**

A13.a Reinforcement for crack control purposes other than to resist stresses from quantifiable structural loadings shall be permitted to be provided by one of the following methods:

A13.a.2 Concrete specified in accordance with ASTM C1116, Type I, containing steel fibers meeting the criteria of ASTM A820, Type I, Type II, or Type V, at a dosage rate determined by the fiber manufacturer for the application, but not less than 25 lb/cu yd (14.8 kg/cu meter).

Fibercon note: Fibercon is a USA manufacturer of Type II (slit sheet fibers) "As of December 2013, Fibercon is the only fiber manufacturer (steel or synthetic) to perform full scale testing to verify that 25 lbs. per cubic yard of its CAR25CDM steel fiber with an aspect ratio of 43 meets or exceeds the ability of the minimum specified conventional reinforcement (0.0075 percent) specified by SDI to provide shrinkage and temperature crack control."

Page 17 Commentary

Although cracking is inevitable, properly placed reinforcement used in adequate amounts will reduce the width of individual cracks. By distributing the shrinkage strains, the cracks are distributed so that a larger number of narrow cracks occur instead of a few wide cracks. Additional consideration by the designer may be required to further limit the size and frequency of cracks. Additional provisions for crack control are frequently required where concrete is intended to be exposed, floors that will be subjected to wheel traffic, and floors which will receive an inflexible floor covering material (such as tile).

Modifications to fiber dosages will vary depending upon the specific fiber manufacturers' recommendations. As a general rule, reduced crack widths can be achieved by increasing the amount of steel reinforcement, or by increasing the fiber dosage and/or minimizing the shrinkage potential of the concrete.