



Virginia Ready-Mixed Concrete Association

Non-Structural Fibers

This section details the benefits and applications for **NON-STRUCTURAL** reinforcement using synthetic fibers. The fibers arrive on the jobsite with the concrete so that they are thoroughly mixed within the matrix of the concrete. Welded-Wire Fabric has been used for years in the Washington, DC area, however unless it is positioned in the middle of the slab (by using chairs or other means to suspend the welded-wire fabric) it *does not* provide adequate support.

The millions of synthetic fibers that are positioned throughout the slab do not need any extra work on the part of the contractor to ensure the fibers are where they should be.

Fibers Information

Primary applications for fiber reinforced concrete:

- Basement floors
- Slab-on-grade
- Driveways
- Lead walks
- Area subject to heavy traffic and abrasion

What is fiber reinforced concrete?

- Inhibits the formation of plastic shrinkage and plastic settlement cracking: Synthetic fiber reinforcement inhibits the formation of plastic shrinkage and plastic settlement cracking by providing an internal support system for concrete. Synthetic fiber reinforcement helps concrete through the period when it is most vulnerable to cracking. That is, when the concrete is beginning to harden and shrink due to volume changes from loss of water. Synthetic fiber reinforcement discourages plastic cracking before it starts.
- Provides reinforcement throughout the entire concrete section: As a result of adding millions of synthetic fibers to the concrete mix, the concrete is then reinforced with an internal material that becomes a uniform, integral part of the concrete composite. Fibers provide reinforcement throughout the entire concrete section.
- Increases the speed of residential concrete projects: Because fiber reinforcement is simply added to the concrete mix, there is no labor or time cost associated with its installation.

What are the benefits to the customer to use fibers?

- Increased concrete durability
- Saves money and time – there is no need to purchase; cut; and place the unwieldy wire mesh. The concrete comes to the jobsite with the fiber mixed into the concrete
- Fibers prevent cracks from occurring versus holding cracks together
- Fibers are mixed throughout the concrete – where they should be rather than at the bottom of the flatwork which can happen with wire mesh
- Fibers do not rust
- Fibers are approved for use as secondary reinforcement in the Northern Virginia area
- Doubles impact resistance which makes for a tougher surface
- The finish looks great because the fibers “lay down” during the finishing process

Fibers CANNOT be used for:

- Does NOT replace primary reinforcement (rebar)
- Does NOT allow for increased joint spacing
- Does NOT allow for a reduced concrete thickness