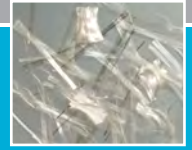


Macro Synthetic Fiber Selection

- Hard Trowel Finish – MasterFiber MAC 360FF Macro Fiber
- Broom Finish – MasterFiber MAC Matrix Macro Fiber
- Dosage – Unless specified, consult Cemstone Engineering Services for dosage recommendations



MAC Matrix



MAC 360 FF

Plastic Concrete Requirements

- Recommended maximum slump of 6".
- For fiber dosages greater than 4 lbs/yd³, utilize all available water to achieve the targeted slump during initial mixing. **DO NOT EXCEED THE WATER TO CEMENTITIOUS MATERIALS RATIO FOR THE MIXTURE.**
- Slumps greater than 6" could lead to segregation during consolidation and could result in an increased amount of visible fibers.
- When using fibers, an apparent slump loss can be expected.



Pumping Fiber-Reinforced Concrete

- Minimize the amount of flexible hose when possible.
- Mixer truck chutes should be approximately 12" or higher above the pump hopper grate when discharging concrete.
- To facilitate flow when pumping fiber-reinforced concrete, rounded hopper grates are preferred. If rounded grates are not available, place ½" PVC pipe or other suitable circular tubes over the pump grates.
- Contact your Cemstone representative when pumping fiber-reinforced concrete through a 2" reducer/hose.



Consolidation

- The use of laser and vibratory screeds have been shown to work well with fiber-reinforced concrete.
- Vibration will bring additional paste to the surface to aid in coating the fibers while also improving finishing characteristics.
- Vibration will reduce the likelihood of visible fiber on the surface.



Placement Practices

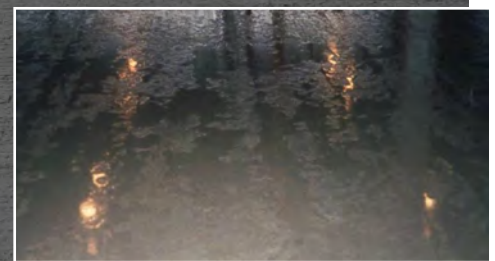
- Place the concrete as close to the final position.
- If raking is required, use a "concrete come along" style rake.
- Avoid using tined rakes as they will pull fibers from the plastic concrete.



Tips for Finishing Fiber-Reinforced Concrete

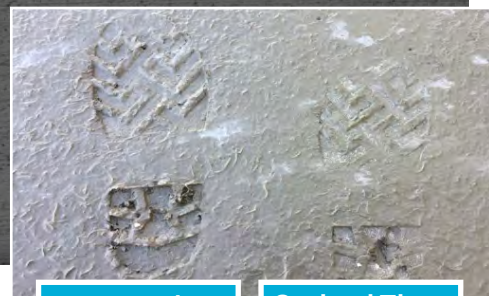
Bleeding Characteristics

- Fibers interrupt bleed water channels and can produce a more uniform water sheen on the slab surface compared to conventional concrete.
- Fibers may slow down the rate and amount of bleed water.
- Do not finish fiber-reinforced concrete when bleed water is still visible on the surface as this could result in a poor surface finish.



Finishing (Timing)

- Start finishing when the bleed water sheen is no longer present and concrete can support foot traffic, with a slight indentation of approximately 1/8" or less (see photograph).
- Premature finishing typically results in fibers being pulled to the surface, resulting in a poor final finish.



Too Early

Optimal Time

Tips for Finishing Fiber-Reinforced Concrete

Finishing - Bull Floating

- Don't overwork the surface during bull floating.
- Over working the surface will result in more visible fibers on the surface.
- If a laser or vibratory screed is used, bull-floating may not be necessary.



Finishing - Broom Finish

- Keep the broom head at a 45-degree angle.
- Broom with a single pass in one direction as it creates a more uniform appearance and will result in less fibers being pulled from the surface.
- Periodically clean broom bristles over time to reduce fiber build up which can cause surface irregularities.



Finishing - Hard Trowel Finish

- The use of float pans on ride-on or walk behind machines are highly recommended as they enhance the finishability of concrete surface.
- Float pans should be used until noticeable resistance is observed with the finishing machine.
- A final pass with finishing blades should occur after pan removal.
- Finishing blades should be kept as flat as possible before increasing the tilt angle of the blades.



Joint Installation - Saw Cutting

- Minimum saw cut depth based on fiber dosage.
 - Less than 4 lbs/yd³ - ¼ of the slab thickness.
 - 4 lbs/yd³ or greater - ⅓ of the slab thickness.



FIBER-REINFORCED MATRIX

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FIBER-REINFORCED CONCRETE

Resolve is Cemstone’s Concrete Fiber Reinforcement Matrix. Whether you’re trying to reduce the occurrence of plastic shrinkage cracking or looking to eliminate typical temperature and shrinkage reinforcement, Resolve offers versatility to improve the interior and exterior slabs on ground.

Micro fiber reinforcement inhibits plastic shrinkage crack formation, reduces plastic settlement cracking and improves the cohesion of the concrete mixture, all of which give you durable, low maintenance concrete.

Like the placement of steel rebar, macro and steel fibers can be placed in concrete to transfer stress, reduce crack widths, increase impact/abrasion resistance and generally improve the long term performance of the slab.

Cemstone’s Resolve fiber-reinforced concrete can be used to improve everything from driveways, patios and sidewalks to commercial parking lots and interior slabs.

SOME OF THE BENEFITS INCLUDE:

- Faster construction time
- Lower construction costs
- Reduced plastic settlement cracks
- Reduced plastic shrinkage cracks
- Lowered permeability
- Increased impact and abrasion resistance



MICRO SYNTHETIC FIBERS - FIBRILLATED BENEFITS

- Replacement for typical light gauge welded-wire reinforcement (6 x 6 W1.4 x W1.4), depending on the application
- Reduces plastic settlement and plastic shrinkage cracking

USES

- Residential and commercial slabs-on ground
- Whitetopping/overlays
- Concrete farm elements

MICRO SYNTHETIC FIBERS - MONOFILAMENT BENEFITS

- Excellent reduction in plastic shrinkage cracking
- Measurably reduces plastic settlement
- Performs as an excellent companion in blends with macrosynthetic fibers and steel fibers

USES

- Residential slabs-on ground
- Commercial slabs-on ground
- Pools and pool decks

MACRO SYNTHETIC FIBERS BENEFITS

- Eliminates the need for welded-wire reinforcement (WWR) and small diameter bars used as secondary reinforcement, depending on the application
- Effective tight crack control
- Provides excellent control of settlement cracking
- Reduces construction time and overall labor and material costs
- Reduces the effects of handling and transportation stresses
- Increases flexural toughness, impact and shatter resistance

USES

- Shotcrete
- Composite metal decks
- Industrial and warehouse floors
- Pavements
- Residential and commercial slabs-on-ground
- Whitetopping/overlays

STEEL FIBERS BENEFITS

- Increase Strength
- Increase concrete strain capacity
- Proactive reinforcement

- Decrease cracking width

USES

- Walls
- Foundations
- Shotcrete
- Paving

[Download Fiber Finishing Guide \(https://cemstone.com/wp-content/uploads/2021/07/Fiber-Finishing-Guide.pdf\)](https://cemstone.com/wp-content/uploads/2021/07/Fiber-Finishing-Guide.pdf)

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