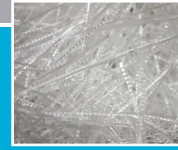


Macro Synthetic Fiber Selection

- Hard Trowel Finish – MasterFiber MAC 330 Macro Fiber
- Broom Finish – MasterFiber MAC Matrix Macro Fiber
- Dosage – Unless specified, consult Cemstone Engineering Services for dosage recommendations



MAC Matrix



MAC 330

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.
- When pumping fiber reinforced concrete, a 3" diameter hose is required.



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

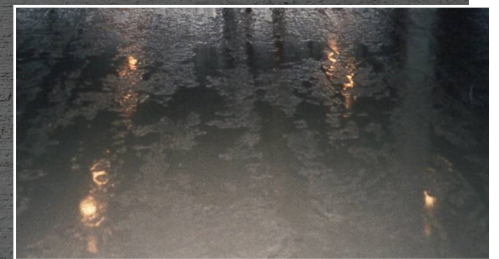
- Place the concrete as close to the final position.
- If raking is required, use a "concrete come along" style rake.
- Avoid using tined rakes as they will pull fibers from the plastic concrete.



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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