



TECHNICAL BULLETIN FC-9

FAQ'S ON SECONDARY REINFORCEMENT AND COMPOSITE STEEL DECK SYSTEMS

Q: What is the actual definition of 'Secondary Reinforcement'?

A: Secondary Reinforcement is usually described as the reinforcing steel in concrete that is in place to do more than resist plastic shrinkage cracking but will not offer any additional structural capacity to concrete. This reinforcement is used to hold any cracks from opening that are caused by stresses developed by thermal changes and drying stresses in concrete after initial set has occurred. Short length monofilament fibers at dosages below 1 lb/yd³ (0.6 kg/m³) of concrete typically do not offer any value to resisting these stresses and therefore caution should be exercised when specifying micro-fibers for secondary reinforcement. Longer length micro-fibers, such as fibrillated fibers at 1.5 lbs/yd³ (0.9 kg/m³) can provide some secondary reinforcement control but again, these products have limitations. Micro-fibers will provide better plastic shrinkage cracking protection than wire mesh. Macro-fibers, at prescribed dosages, can be used to provide equivalent tensile capacities to steel for secondary reinforcement and limited structural applications.

Q: Can TUF-STRAND SF or other fibers be used on metal deck assemblies?

A: TUF-STRAND SF is part of the macro-synthetic family of fibers that is recognized as a suitable alternative in the IBC 2015 and Steel Deck Institute SDI/ANSI-C1.0 Document for use as secondary reinforcement when compared to welded wire reinforcing and steel fibers at a minimum dosage rate of 4 lbs/yd³ (2.4 kg/m³). Macro-fibers (steel and/or synthetic) can provide equivalent tensile and secondary reinforcement strength and have also been proven to provide for faster and more efficient construction schedules when building composite metal deck assemblies. TUF-STRAND SF is also UL/ULC certified for D700, D800 and D900 Series Deck Designs for a two hour fire rating meaning that Euclid Chemical's macro-synthetic fiber can be specified as the sole reinforcement element in these deck systems with approval from Underwriters Laboratories.

For additional questions, comments or further explanations, please feel free to contact The Euclid Chemical Company at your convenience.