

SINTA™ M3106

Micro-synthetic fiber for concrete

Product Description

SINTA™ M3106 is a micro-synthetic polypropylene fiber that can be used in many concrete applications. It helps to prevent the propagation of cracks during plastic shrinkage, and crack reduction during plastic settlement. SINTA M3106 is produced on a state-of-the-art production line which is specifically designed to yield an ultra-thin concrete fiber. Engineered specifically for use in concrete, it is 100% alkali-resistant, and completely non-corrosive. It provides secondary reinforcement and protects concrete from stresses which cause cracking while the concrete is most vulnerable — during the first 24 hours after placement. It therefore enables the concrete to be more durable over the entire service life. It can be directly mixed into concrete, and this helps reduce both time and effort in transporting and installing traditional steel mesh for shrinkage/ temperature crack control.

SINTA M3106 is available in 6mm lengths, 30–32 microns diameter.

Applications

SINTA M3106 may be used in any application where the following benefits are desired:

- Decreased plastic shrinkage and cracking
- Improved concrete durability and service life of concrete.
- Increased fire resistance to explosive spalling
- As secondary reinforcement for crack protection and control
- Where extended finishing operations are required
- Where reduced use or non-use of welded wire fabric is needed
- Reduces rebound significantly and save material when used in shotcrete applications

Specific applications include, but are not limited to, slabs on grade, industrial floors, elevated slabs, pavements, screed overlays and toppings, sloped walls, pools, shotcrete, railway track sleepers, stucco, precast and prestressed concrete products.

SINTA M3106 is not recommended to increase joint spacing or as a substitute for any reinforcement required by the Model Building Codes and Standards.



Advantages

SINTA M3106 uniformly distributes multi-dimensionally throughout the concrete mixture. The extremely high number of fibers in the fresh concrete matrix provides a high degree of secondary reinforcement. This reinforcement reduces the formation of all types of early cracking, protecting the concrete when its tensile strength is lowest. This cracking caused by plastic shrinkage, settlement, and other internal stresses would otherwise permanently weaken the resulting concrete. The concrete permeability is decreased, while surface characteristics, impact, and toughness properties are improved. Instead of installing steel mesh on jobsite, applying SINTA M3106 reduces both time and direct labour expenses significantly; potential hazards and risks related to handling steel mesh are eliminated. SINTA M3106 does not corrode, and this increases concrete service life and also minimizes any maintenance costs; at the same time, SINTA M3106 can be stored for a long-term without risk of becoming not useable due to corrosion.

Typical Properties

100% alkali-resistant, non-corrosive and does not have any chemical reaction.

Technically advanced production techniques make SINTA M3106 a highly durable fiber that is virtually invisible in fresh and hardened concrete. This minimizes fiber-reinforced concrete finishing concerns while providing the highest level of crack protection available.

Formulated to address early age cracking problems, SINTA M3106 helps prevent the propagation of cracks in the plastic state – precisely when most cracks occur. During the plastic settlement phase, the fibers create a three-dimensional support network that resists the downward pull of gravity, thus keeping aggregates in suspension and promoting uniform bleeding. This fiber network increases the tensile strain capacity of concrete during the plastic shrinkage phase as well. It also helps to mitigate shrinkage/ temperature cracks. It further reduces freeze/ thaw damage and mitigate permeability of water and chemicals into concrete due to three-dimensional effect of the fibers within the concrete mix.

Mixing Requirements and Addition Rates

SINTA M3106 may be added to concrete at any point during the batching or mixing process. It may be added to the aggregate during weighing or charging, or to the central mixer or truck before, during, or after charging. The concrete must be mixed at high speed for at least 5 minutes in the field (or minimum 70 revolutions), after the addition of SINTA M3106 to ensure uniform distribution. Depending on the project requirements, SINTA M3106 recommended dosages vary between 0.3 kg/m³ and 2.0 kg/m³ of concrete; when applying a higher dose, it is recommended to use plasticizer admixtures.

Compatibility with Other Admixtures

SINTA M3106 is compatible with all GCP admixtures. Its action in concrete is purely mechanical and will not affect the hydration process. Each admixture should be added separately.

Packaging

SINTA M3106 is packaged in :

1kg water-soluble bag.

Per box contains 18 bags (18kg).

Per pallet contains 25 boxes (450kg)

Health and Safety

See SINTA M3106 Material Safety Data Sheet or consult GCP Applied Technologies.

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