



NYCON-G-PP

TECHNICAL DATA SHEET

Fire Protection of Concrete Tunnel Linings, Proceedings of the Third International Conference on Tunnel Fires, Oct. 9-11, 2001, Washington, DC, Peter C. Tatnall*:

“It has been demonstrated that the use of fine, micro polypropylene monofilament fibers mitigates the effects of explosive spalling of concrete in hydrocarbon-fuelled fires. The quite different thermal characteristics of the polypropylene fibers and the concrete matrix cause small fissures to open at the fiber-matrix interface as the fibers expand at a different rate than the matrix when heated. The small openings allow the escape of the building vapor pressure. This very inexpensive insurance can protect the lives of those trying to escape the fire as well as those fighting the fire. Preventing catastrophic collapse of structures can help to significantly reduce repair costs, save lives, and reduce the severe disruption to commerce using these facilities.”

**Peter C. Tatnall is a Founding Member and Past President of ASA. He is a Fellow of ACI and is past Chair of ACI Committee 544, Fiber Reinforced Concrete, and a member of ACI Committee 506, Shotcrete. Tatnall serves as Chair of ASTM Subcommittee C09.46, Shotcrete, and is past Chair of Subcommittee C09.42, Fiber Reinforced Concrete*

Nycon-G-PP™ is a cost effective, green, performance-grade, synthetic fiber manufactured specifically for concrete crack control, improved impact resistance and mitigation of effects of concrete spalling in fires. Nycon's technology allows us to reclaim high-value PP fiber, and recycle it to produce performance-grade concrete reinforcement that costs less and equals the performance of virgin fiber. NYCON-G-PP fiber is resistant to degradation from alkalinity and is virtually unnoticeable in finished products. NYCON-G-PP fiber is a carefully controlled, well-graded blend of nylon, .75" to micro length fiber reinforcement.

Nycon-G-PP Features and benefits

- Cost effective, high-performance, synthetic reinforcing fiber
- Applications include fire control for site cast, precast, shotcrete
- Proven effective in countless projects in a variety of applications
- Environmentally friendly - made from 100% recycled material
- Reduces plastic shrinkage and drying shrinkage cracking
- Distributes reinforcement uniformly throughout concrete mix
- Contributes to fire control by allowing pathway for steam
- Will never corrode or fatigue

- Helps reduce product segregation
- Improves fatigue crack resistance
- Virtually unnoticeable in finished products
- Resists degradation from alkalinity
- Improves soundness

Nycon-G-PP reinforcing fiber isn't as 'pretty' as virgin reinforcement fibers that are made from virgin PP feedstock material. We realize this. But the 'beauty' of using Nycon-G-PP fiber in concrete is - once you add it to your mix you never see it again. For fire spall-control properties, Nycon-G-PP is in-place, ready and waiting for the time when it's needed. In this way, Nycon-G-PP is a green, sacrificial product that's made for the precise time when it is required for control of spalling during a fire.

The color of Nycon-G-PP fiber is generally light tan mixed and may vary slightly depending on our sources of available feedstock – but this will not affect performance or aesthetics of your finished products.

Nycon-G-PP Fiber Technical Properties

Property	Unit	Test Method	Nycon-G-PP Polypropylene Fiber
Density	g/cm	ASTM D792	0.900 - 0.910
Tensile Strength – Break	Psi	ASTM D638	4,500 – 6,000
Tensile Strength – Yield	Psi	ASTM D638	4,500 – 5,400
Flexural Strength	Psi	ASTM D747	5,000 – 8,000
Flexural Modulus	Psi	ASTM D790	130,000 – 200,000
Melt Point			324°F (162°C)
Absorption			0% - 1%
Fiber Length			Graded
Acid & Salt Resistance			High
Alkali Resistance			Alkali Proof

New Nycon, Inc.
 One Neshaminy Interplex #201
 Trevose, PA 19053
 Phone: 800-456-9266
www.nycon.com

