

ADFIBRE III

3D Polypropylene Fibre Reinforcement



the
construction
chemist...

Technical Collaboration with

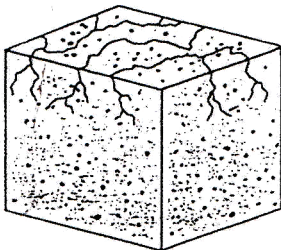


WHEN TECHNOLOGY MEETS STRENGTH

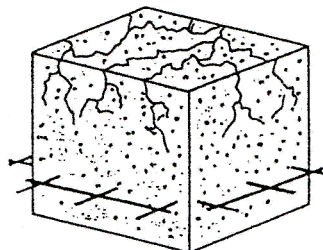
Adfibre' III

Adfibre' III is a fibre reinforcing materials which when admixed to concrete, shotcrete, mortar at the mixing stage millions of fibers are dispersed out and distributed homogenously throughout the batch. This makes the batch more denser, stronger, durable and crack free. Adfibre III is a new concept in which reinforcement is 3D. This process also dominates the plastic concrete weakness which no steel can actuate.

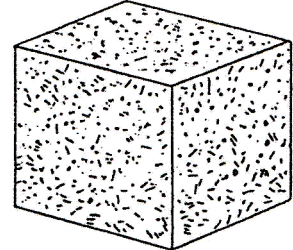
Plain Concrete Construction



Wire mesh Construction



AdFIBRE' III Construction



Effect of Adfibre' III

- Restricts shrinkage and drying cracks of concrete, shotcrete and mortar.
- Increase the resistance to shock, damage, corrosion, erosion etc.
- Increase the resistance to fatigue, repetitive load (increase toughness), permeability.
- Decrease the phenomenon of plastic settlement cavitation (during concrete placing).
- Easy handling reducing construction schedule, labour cost and injuries.
- Material saving and less rebound in shotcrete (tunnel lining works), invert surfaces, vertical structures etc
- Very high chemical resistance and hence maintains its characteristics even in strong alkali and acidic presence.

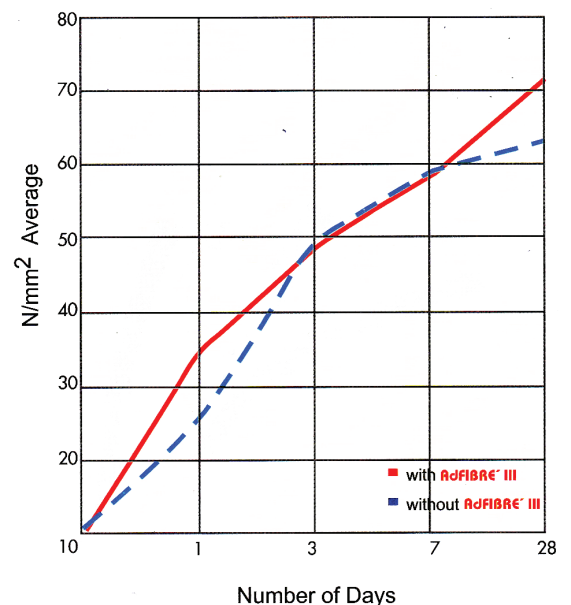
Technical Details

Material	Virgin Homopolymer Polypropylene
Shape of Fiber	Monofilament
Standard Length Fiber	21mm/19mm/12mm/6mm/3mm
Application (Concrete/Shotcrete/Mortar)	<p>Apartments, Villas, Factories, Warehouse Floors.</p> <p>Parking Space, Fences, Runways, Drainage & Power Structures.</p> <p>Pre-cast Structures, Refractories, Tunnels.</p> <p>Light Weight Concrete floor & panel structures, pressed mortars, shotcrete.</p> <p>Sea & Costal Defense works, Marine & Bridge Structures.</p> <p>Military applications, Water & Soil Retaining Structures, Mining.</p>
Fiber Distribution	Over 6.5 Million/m ³
Standard Dosage	0.6 Kg to 0.9 Kg / m ³ (Administered @ 1bag/m ³ or, pro rata insitu mixer requirement.
Diameter	18 micron nominal
Standard Compliance	ASTM C-1116
Packing	In 0.6Kg and 0.9 Kg concrete hygiene paper bags/ custom bags.
Mix Design	The reinforcing function of Adfibre III is NOT a chemical process- but physical. Since the volumetric ration is below 0.1%, there is no effect on mic design.
Mixing Method	Put the applicable amount to the batching plant or site mixer and full revolution of the mixing drum for 5 minutes is recommended.
Casting & Finishing	Same as normal mix.

Physical Properties of Adfibre' III

Specific Data	: 0.91
Melting Point	: 162°C, above
Absorption	: Nil
Acid Resistance	: 99% Strength Retained (95% HCL solution at 21°C FOR 1,000hrs)
Alkali Resistance	: 99% Strength Retained (40% NaOH solution at 21°C FOR 1,000hrs)
Tensile Strength	: 3,500 - 7,700 kg/cm ² , above
Young Modulus	: 35 X 10 ³ kg/cm ² , above

EXTRACT from Independent Laboratory cube results
EQUIVALENT cube method BS 1881 : Part 119 : 1983
STANDARD **AdFIBRE' III** dosage rate 0.6 Kg/M³



Comparison between Adfibre' III and Wire Mesh

Item	Adfibre III	Wire Mesh
Reinforcement	3D	2D
Chemical Resistance	Excellent in Acid and Alkali Resistance	Poor in Acid and Alkali Resistance
Water Resistance	Excellent	Poor
Effects	Restrains drying cracks & crack spreading Increase the resistance to shock, damage and fatigue load. Increase the resistance to freeze-thawing, erosion. Increase the flexural strength, toughness	Does not prevent the cracks spreading
Construction	Easy to handle, absolutely free from handling injuries. No damage to adjacent materials. Simple process of adding- no cumbersome re-baring. Saves labour cost and wastage.	Difficult in handling, possibilities of injury. Wastage. Trouble with cutting the wire mesh in construction joint.
Finishing	Finished with almost no bleed water	Always finished with bleed water
Reft. Distribution	Fiber coated with antistatic lubricants for uniform distribution (homogeneous distribution, avoiding 'balling').	Mill fabricated and hence no much control on this feature.
Wastage	Rebound minimum and hence very suitable shotcrete tunnel, invert and vertical surfaces.	Difficult for shotcreting etc.

COMPARE THE COSTS		
EXPENSIVE & MINIMAL GAIN		
ECONOMICAL & BETTER PERFORMANCE	Plus	handling and injury
	Plus	labour intensive
	Plus	off-cut wastage
	Plus	over lap doubts
	Plus	inconsistent placement
	Plus	cash flow restriction
	Plus	onsite storage
	Plus	forward order supplies
Adfibre' III	Wire Mesh	
Concrete	Concrete	

COMPARE THE BENEFITS		
MAXIMUM BENEFITS		
blended easily	Plus	
arrives entrained	Plus	
handles better	Plus	
improves surface finish	Plus	
wear resistant	Plus	
impact resistant	Plus	
assists curing	Plus	
less permeable	Plus	
resists plastic settlement	Plus	
resists plastic cracking	Plus	
Adfibre' III	Wire Mesh	
Concrete	Concrete	



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