

MIXING DIRECTIONS

Fibre guard should ideally be introduced before adding water. The concrete should be mixed for a minimum of 70 revolutions at full speed to ensure uniform fibre dispersion. In the case of site mixing, a minimum of 70 drum revolutions at full speed should take place.



Standard Dosage
0.91 kg/cubic meter of concrete

SPECIFICATIONS

Product conforms to the code (IRC 15-2017, IRC SP 46, and Ministry of Road Transport and Highway (MORTH) 5th Revision amendment dated 28th Dec 2017) Specification :

- | | |
|--|---|
| ■ Material : 100% Virgin Polypropylene | ■ Water Absorption: Nil |
| ■ Design: Fibrillated | ■ Melt Point: 160-165 °C |
| ■ Fibre Length: As per requirement | ■ Ignition Point: >450°C |
| ■ Equivalent Dia: 20-50 micron | ■ Thermal Conductivity: Low |
| ■ Sp Gravity: 0.91 | ■ Electrical Conductivity: Low |
| ■ Colour: Natural | ■ Acid and Alkali Resistance: Excellent |



REFERENCE DOCUMENTS

- ASTM C 1116 Standard Specification for fibre Reinforce Concrete
- IS: 456-2000 Guideline for concrete
- MORTH 5TH REVISION (SECTION 602.2.5 FIBRE, Amendment dated 28th December 2017)
- IRC 15-2017 STANDARD SPECIFICATION AND CODE OF PRACTISE FOR CONCRETE ROADS
- IRC 46-2013 GUIDELINE FOR CONSTRUCTION OF FIBRE REINFORCE PAVEMENT
- IS 16481 2016 TEXTILE SYNTHETIC MICRO FIBRE FOR USE IN CEMENT BASED MIX SPECIFICATION.



BAJAJ REINFORCEMENTS
PVT. LTD.

Head Office (Contact Details)
D-5/1, M.I.D.C. Hingna Industrial Estate,
Nagpur - 440 016.
Tel. No.07104-281000, 91300 14726
E-mail : fibreguard@brllp.in
Website : www.brllp.in



BAJAJ REINFORCEMENTS
PVT. LTD.

For crack-free concrete and plaster
Fibrillated Polypropylene Synthetic Fibres



MUSCLE TO
YOUR CONCRETE





ADVANTAGES

- Improves Resistance to plastic and drying shrinkage crack Makes the concrete durable
- Improves impact and abrasion resistance. Reduces segregation of mix.
- Significant improvement in freeze thaw cycle resistance.
- Reduces Water Permeability. Cohesive mix
- Significant improvement in fire resistance
- Compatible with food and drinking water standard, PP complies with FDA regulation: CFR title 21.177.1520, olefin polymer.

DIFFERENCE BETWEEN FIBRILLATED AND MONO FILAMENT FIBRE

Fibrillated

Fibrillated fibers are network of number of fibers which open up and offer better anchoring and bonding up characteristics in concrete as deformed rebar anchor better with concrete compare to smooth rebar.



Fibrillated Fibre

Monofilament

Monofilament fibers are single strand fibre similar in shape to a standard finishing nail or smooth rebar.



Monofilament Fibre



Fibrillated Fibre Like Screw and Deformed Rebar



Monofilament Fibre Like Smooth Nail and Rebar

BAJAJ FIBRE GUARD AS PER THE IRC: 15-2017, IRC: SP: 46-2013 and MORTH SPECIFICATIONS

S. No.	Property	IRC : 15-2017	IRC:SP:46-2013	MORTH Ministry of Road Transport and Highway	Bajaj Fibre Guard (Tested From VNIT Nagpur)
1	EFFECTIVE DIAMETER	8-300 micron	Less than 200 micron	10-100 micron	20-25 micron
2	Length	6-18mm	40mm	6-48mm	As per requirement
3	Sp. Gravity	0.90-1.36	0.91	>0.91	0.91
4	Dosage	0.6-2.5Kg/m3	0.91Kg/m3	0.6-2 Kg/m3	0.91Kg/m3
5	Water Absorption	Less than 0.45%	Not mention	Less than 0.45%	Nil
6	Melting Point	Should not be Less than	Not mention	Should not be less than 160°C	160-165 °C
7	Aspect Ratio	160°C	Not mention	200-2000	100-1000
8	Alkali and Acid Resistance	Good	Not mention	Good	Excellent

OUR OTHER PRODUCTS

Micro Synthetic Fibre



- G** **GUIDELINE**
Fibre guard should not be used to replace structural, load bearing reinforcements neither for increasing the joint. spacing suggested for unreinforced concrete. Its basic purpose is to arrest the cracks coming in concrete.
- C** **COMPATIBILITY**
Fibre guard is compatible with all concrete admixtures and performance enhancing chemicals.
- S** **SAFETY**
No special care is required while using fibre guard. Full material data safety sheet is available if asked for.

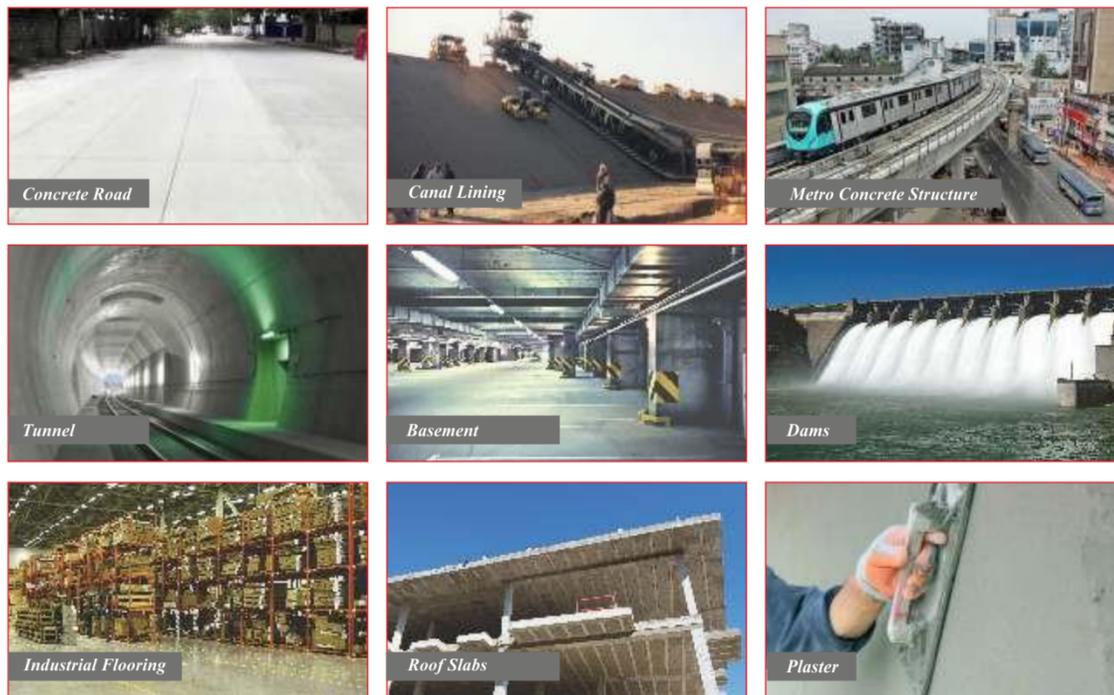
INTERNAL CRACKS WITHING THE CONCRETE

It is well known that Concrete is very strong in Compression but poor intension. As a result some cracks can be seen, but majority of cracks which cannot be seen and which are developed inside the concrete mass well below the surface. These cracks are mainly because of difference in outer and inner temperature of hydration. The temperature gradient is caused by hydration heat inside the concrete and is more towards the center as there is no escape for the heat because the concrete is a bad conductor of heat.

This results in tensile stresses which lead to cracks within the concrete. We can see the surface cracks, but cracks, but cracks at the interior are more dangerous as they are not visible and act in log term reduction in the strength. That is they are like termites to the structure, which need attention.

Fibre plays a major role in arresting these cracks, polypropylene fibrillated fibre uniformly hold the concrete and do not allow the cracks to develop. Therefor fibre ensure the concrete protection on both outside and inside. Bajaj Fibre Guard impart ductility and thus increase the life of the concrete on a long term basis. In other words the life of the structure increase many time.

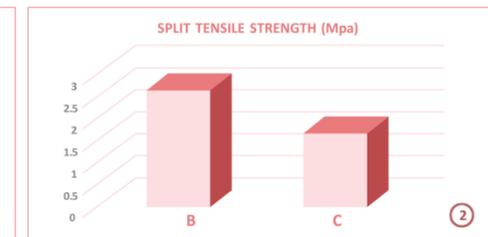
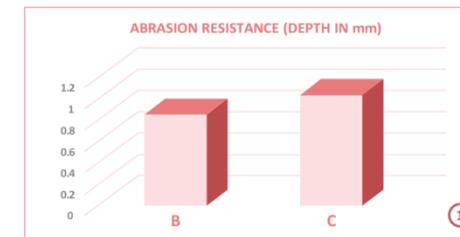
APPLICATIONS



These test results are of core cut from 24 month old Constructed road where Bajaj Fibre Guard was used. The tests were Carried out in Bureau Veritas Laboratory, Report for the same can be shared if asked for. The test Results proves the long term effect of fibre in concrete

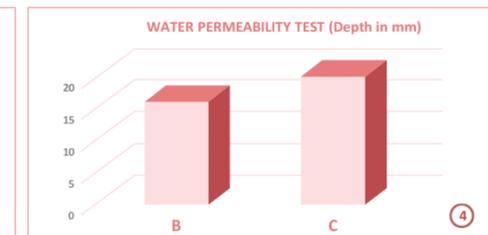
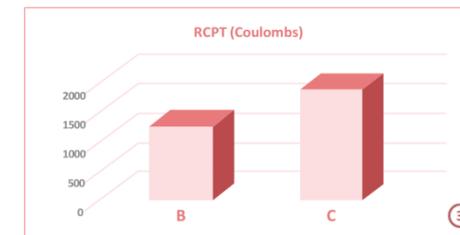
TEST RESULTS

S.NO	TEST	B	C
1	ABRASION RESISTANCE (DEPTH IN mm)	0.84	1.02
	PERCENTAGE DECREASE	-17.64	0



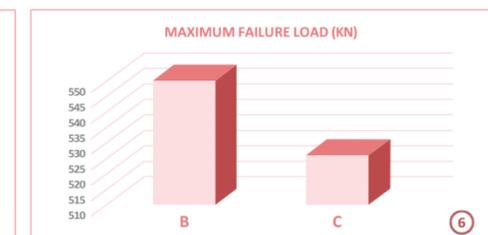
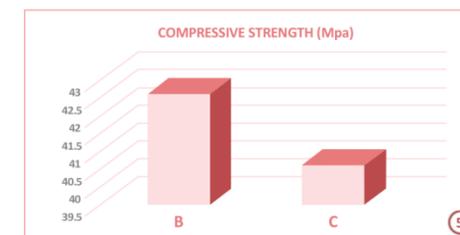
TEST	B	C
2 SPLIT TENSILE STRENGTH (Mpa)	2.65	1.67
PERCENTAGE INCREASE	58.68	0

S.NO	TEST	B	C
3	Resist Chloride Penetration Test (RCPT)	1236	1876
	PERCENTAGE DECREASE	-34.11	0



TEST (WATER PERMEABILITY)	B	C
4 PENETRATION TEST (DEPTH IN mm)	16	20
PERCENTAGE DECREASE	-20	0

S.NO	TEST	B	C
5	COMPRESSIVE STRENGTH (Mpa)	42.6	40.6
	PERCENTAGE INCREASE	5	0



S.NO	TEST	B	C
6	MAXIMUM FAILURE LOAD (KN)	550	526
	PERCENTAGE INCREASE	4.5	0