

TECHNICAL DATA SHEET (TDS)

FIBRE TUFF

Muscle to Your Concrete

PRODUCT DESCRIPTION:

Fibre Tuff is a macro synthetic fibre designed specifically for the reinforcement of shotcrete and other cementitious mixes. Fibre Tuff have an engineered contoured profile, which serves to effectively anchor the fibre into the shotcrete and concrete thus resisting matrix pull out and enhancing the shotcrete's and concrete performance even after it has developed stress cracks.

Major improvement in properties of concrete

- Redistribute load, increases ductility/toughness.
- Reduce of permeability.
- Improves shrinkage and temperature crack.
- Increases post crack load capacity.
- Increases of flexural strength.
- Increases of impact resistant.
- Increases of residual resistance.
- Reduces plastic settlement crack.
- Increases fatigue resistance.
- Increases tensile strength 40 to 45% as compare to normal concrete
- Reduces bleeding.
- Increases energy absorption
- Increases toughness

Major improvement in other properties

- Eliminate corrosion, long term durability
- Safer and lighter to handle than steel.
- 85% reduction in carbon footprint
- Strong bonding with shotcrete/concrete
- Speed up construction by eliminating steel mesh set up
- Reduces wear on concrete pump and hoses.
- Replacing rebar/wire mesh in concrete and shotcrete.
- Potential to increases in joint spacing up to 85%.



TECHNICAL SPECIFICATION

Characteristics	Fibre Tuff
Base Material	Modified Olefin
Specific Gravity	0.91
Diameter(mm)	0.84 (+ 5%)
Fibre Cut Length(mm)	36,40,50,54,65
Tensile Strength (MPa)	650 (+ 2.5%)MPa
Modulus of Elasticity	9 GPa ± 0.2 at 10% 7 GPa ± 0.2 at 30%
Elongation	10-12%
Ignition Point	>450 °C
Water Absorption	Nil
Melting Point	163 °C
Anchorage	Continuous Embossing
Acid & Alkali Resistance	Excellent
Shelf Life	2 years shelf life from the date of production if we keep it indoors

Conformity: Confirms to EN 14889 – 2, ASTM C1116 -III

- ❖ **Single fibre pull out strength**: - Crack Tip Opening Displacement (CTOD) and Crack Mouth Opening Displacement (CMOD) test are normally used to study the effect of fibre on the post-cracking behavior of concrete.

REFERENCE DOCUMENT:

- EN 14651 (CMOD Test)
- BSEN 14651:2005 (Residual Flexural Strength)
- ASTM C1609 M-12: (Flexural performance using Centre point Load)
- ASTM C1018 (Test Method for flexural toughness and first crack strength)
- ASTM C1550 (Standard test method for Flexural Toughness of FRC using Centrally loaded Round Panel Test)
- EFNARC/ EN 14488-5 (Square panel test)
- ASTM C1018 (Standard test method for first crack load of FRC)
- TR-34 (Concrete Industrial Ground Floor)
- Tensile Strength as per EN 10002-1
- ASTM E1290 (To check the post crack performance of fibre reinforced concrete)
- EN 14488-3 (Test method of Flexural strengths (first peak, ultimate and residual) of fibre reinforced beam specimens)
- IRC SP 46 (Guidelines for design and construction of fibre reinforced concrete pavements)

DOSAGE:

Fibre Tuff has regular dosage of 3 to 9 Kg per cubic Meter of Concrete. Dosage rate is decided as per Structural toughness. We suggest you to Contact Your Bajaj Reinforcement representative before Using so that we can discuss together the Application.

PUMPING:

Fibre Tuff can be pumped through 50mm rubber Hoses without difficulty. Hose life increases against Steel fibre, thus saving time and money.

MIXING:

The fibre is best dispersed when added to a Drum/ pan mixer. The Synthetic Fibers are added to concrete before or during the Mixing operation.

PACKAGING:-

Fibre Tuff packed in water soluble bag, Polypropylene bag and Low density Polyethylene (LDPE) bag which is easy to handling and mixing.

HANDLING AND STORAGE:

Fibre Tuff is packed as per requirement and Supplied on durable, wooden pallet. Bag must be stored in Cool indoor place.

ENVIRONMENTAL PROPERTIES:

No hazards resulting from material as supplied

ENVIRONMENTAL PRECAUTIONS:

Avoid release to environment. Do not allow to enter drains, sewers or watercourses