

FB-TUF_-VAR

GLASS FIBER BOWS

48 g/m, 75 g/m, 105 g/m

FB-TUF_-VAR Glass fiber bow with external elastic sleeve. The use of this product allows the existing structure to be mechanically anchored to the FRP reinforcement made from fabrics, plates or meshes. Suitable for masonry, reinforced concrete, and steel structures reinforcement.

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TECHNICAL DATA

	Description			Ref.
	FB-TUF08-VAR	FB-TUF10-VAR	FB-TUF12-VAR	
Commercial name	FB-TUF08-VAR	FB-TUF10-VAR	FB-TUF12-VAR	-
Manufacturer	Fibre Net SpA			
Impregnated section nominal diameter (mm) ⁽¹⁾	8	10	12	CNR-DT 200/2004, CNR-DT 203/2006

GEOMETRICAL AND MECHANICAL CHARACTERISTICS OF THE NON-IMPREGNATED BOW

Property	UoM	Value			Ref.
		18	28	40	
Overall cross-section of glass fibers	mm ²	18	28	40	ISO 1889 In-house method
Linear density of the non-impregnated bow	g/m	48	75	105	
Theoretical tensile breaking load of the bow	kN	≥ 22	≥ 33	≥ 44	In-house method

GEOMETRICAL AND MECHANICAL CHARACTERISTICS OF FIBERS

Property	UoM	Value			Ref.
		17	2,65	1215	
Fiber type	-	Continuous glass fiber, amorphous structure			-
Diameter of the fiber filament	μm	17			ISO 1889
Fiber density	g/cm ³	2,65			ASTM D1505
Tensile strength of the fiber	MPa	1215			ISO 3341
Tensile elastic modulus of the fiber	GPa	68,5			
Elongation at break	%	1,8			

CHEMICAL AND PHYSICAL CHARACTERISTICS OF THE NON-IMPREGNATED BOW

Property	UoM	Value			Ref.
		12,0	18,7	26,7	
Tensile strength (tension, average value)	MPa	290			ISO 10406-1:2015 CNR DT 203/2006
Tensile stress (tension, characteristic value)	MPa	100			
Average tensile axial rigidity of EA bar	kN	1.450			
Connector tensile strength (average value)	kN	12,0	18,7	26,7	
Connector tensile strength (characteristic value)	kN	5,1	8,0	11,4	

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CHEMICAL AND PHYSICAL CHARACTERISTICS OF THE IMPREGNATED BOW

Property	UoM	Value			Ref.
Type of impregnation resin	-	Betontex RC01 - Thermosetting epoxy resin			-
Consumption of cured resin	g/m	37	57	81	ISO 1183-1
Minimum and maximum temperature limits of use ⁽²⁾	°C	-15 / +48			CIT 286 18/07/2017
Recyclability	-	recyclable			CSI 003/13
Combustion heat	MJ/kg	8,0			EN ISO 1716:2010
Fiber content by weight (average)	%	50			ISO 1172 In-house method

CHARACTERISTICS

- High mechanical strength
- Extreme lightness
- High resistance to corrosion
- Compatibility with lime-based mortars
- Ease of application

ADVANTAGES

- Durability and effectiveness of the intervention
- Timely and targeted interventions
- Sizing according to project requirements
- Does not require temporary mechanical fastening systems for installation

LAYING INSTRUCTIONS

Before proceeding with the installation of the carbon fiber bows, it is necessary, where appropriate, to remediate the deteriorated parts by applying a mortar of suitable mechanical properties. Drill a hole 1.5 times the diameter of the bow. After the drilling, remove dust and loose material. Insert the previously impregnated bow inside the hole and fill it with epoxy/vinyl-ester resin, avoiding air gaps. Fan out the fibers of the bow. Subsequently, apply a layer of adhesive resin and impregnating agent and roll with bubble break rollers. Finally, lay down any reinforcing fabric or plate.

PACKAGING

Packaging: coils.
Available lengths: 10 m, 25 m, and 50 m.

HANDLING AND STORAGE CONDITIONS

The bows should be stored in a covered dry place, protected from rain and direct sunlight. The user should refer to the latest Material Safety Data Sheet. Prior to its use the material must be protected from deposits of dust, grease, oil, and any other material capable of reducing adhesion between the rope and/or mortar and/or resin. Particular attention must be paid during transport, handling, and storage to avoid wire breakage due to excessive bending stresses (bumps, bends, etc.).

RECYCLABILITY

Fibre Net has the "CSI RECYCLABLE COMPOSITES" certification for its FRP products. FB-TUF_CHM bows are among the products certified by CSICERT and are fully recyclable.

SAFETY INSTRUCTIONS

Wear protective clothing and gloves, goggles and dust masks during handling and application. In case of skin contact, wash with soap and water. In case of eye contact, wash with water and seek medical attention if the irritation persists. For safety information, product use, and storage, the user should refer to the most recent Material Safety Data Sheet.



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ITEM SPECIFICATION

FB-TUF_-VAR Fibre Net bow, or equivalent, with glass fiber core and an outer elastic sleeve, for mechanical anchoring of FRP reinforcements made from fabrics, plates, or meshes to the existing structure according to BETONTEX-EPOXY System and C-MATRIX System. Nominal diameter of the impregnated section _____ mm, glass fibers cross-section _____ mm², theoretical tensile strength of the bow \geq _____ kN. Made of glass fibers, characterized by a 4,700 MPa fiber tensile strength, a 390 GPa fiber elastic modulus, and a 1.2% elongation at break.

Note 1: Values corresponding to a resin content of 65% in the impregnated bow.

Note 2: Value associated with the use of Betontex RC01 resin for impregnation and Betontex RC30/3 resin for grouting. The value may be affected using other materials and/or limitations imposed by the substrate and/or any plaster.

The purchaser is responsible for verifying the suitability of the products described in this document for their intended use and purposes. Fibre Net srl assumes no responsibility for improper use of the material. It is the customer's responsibility to verify that this sheet and the data contained herein are valid for the batch of product of interest to him and are not superseded as replaced by subsequent editions and/or new product formulations or certifications. The customer is encouraged to contact our Technical Department in advance. This edition invalidates and overrides all previous ones.