

V2 T-Biscuits

Custom carbon/glass fiber reinforced plastic laminates

Product Description

V2 T-Biscuits are custom carbon/glass fiber reinforced plastic laminates designed to repair failed flange-to-flange shear connectors of pre-cast concrete (single & double) Tee beams. A specially engineered tri-axial carbon fabric is used provide high strength, while a proprietary textured glass fabric is bonded on the exterior face to provide additional toughness as well as a rough bonding surface. The constituent resin matrix is a proprietary epoxy with proven ability to provide strength along with superior chemical resistance, especially to salt and gasoline. Using a proprietary aerospace composite manufacturing technique, the fabric and resin are combined to form a finished composite laminate.

Advantages

- Easy and fast installation
- Minimal disruption to operations
- Superior strength and toughness
- Chemical resistant

Typical Biscuit Properties Along X/Y Axis			
Thickness in. (cm.)	Tensile Capacity lbs. (kgs.)	Compressive Capacity lbs. (kgs.)	Shear Capacity lbs. (kgs.)
0.18 (0.45)	50,406 (25,585)	50,306 (22,818)	10,706 (4,856)
Laminate Properties			
Tensile Strength (along X/Y axis)		110,630 psi (762 MPa)	
Compressive Strength (along X/Y axis)		98,640 psi (680 MPa)	
Compress Strength (through thickness)		9,200 psi (63 MPa)	
In Plane Shear Strength (along the Z axis or through thickness)		20,992 psi (145 MPa)	
Inter Laminar Shear (along X/Y axis)		2,050 psi (14 Mpa)	
Bond Strength to Concrete (using V2 Biscuit Bond Epoxy)		2,760 psi (19 MPa)	
Design Values (5k psi concrete)			
		Ultimate Value lbs. (kgs.)	Design Value lbs. (kgs.)
	Vertical Shear	8,000 (3,629)	6,000 (2,722)
	Horizontal Shear	17,200 (7,802)	13,000 (5,897)
	Tension (Pull Out)	16,500 (7,484)	12,400 (5,625)



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Installation with V2 Biscuit Bond Paste

1. Make a cut .25" wide by 18" long at a 90° angle across the seam. The depth of the cut should be ½" from the bottom of the flange of the double T. Typically, the cut is approximately 3.5" deep.
2. If the slots were dry cut using compressed air with a minimum of 100 psi, clean out the slots to remove dirt and dust. If the slots were wet cut, pressure wash the slots to remove slurry or dirt. Allow 24 hours to dry. Mask off the top of the groove with tape (for a cleaner look).
3. Measure exactly 1 part "A" to 1 part "B" by volume into clean pail or onto a palette. Mix epoxy using hand methods to achieve a smooth consistency and uniform color.

NOTE: Large batches of epoxy will set up much faster than small batches. Only mix the amount of material that can be used within the pot life.

4. Fill the groove with a liberal amount of adhesive and work it in with a trowel or putty knife.
5. Apply biscuit bond to both sides of the T- Biscuit and place into the groove working all of the air out of the groove with a putty knife. Allow epoxy to gel, remove masking tape before epoxy has fully set.

Storage

T-Biscuits and epoxy should be stored in a dry environment at a temperature between 40° to 90°F (4° to 32°C). Ideal temperature range is 65° to 75°F (18° to 24°C). Temperatures below 60°F (16°C) will cause epoxy to thicken, making it difficult to properly blend the components. Under proper conditions, the shelf life of epoxy is twelve (12) months in unopened, damage-free containers. Protect from moisture. Do not allow product to freeze.

Clean Up & First Aid

Clean equipment immediately after use with MEK or Acetone. Clean skin with soap and water. Wash contaminated clothing before re-use. See MSDS for more information.

Caution

Paste "A" material contains epoxy resins and may cause skin irritation. Paste "B" material contains amines and may cause severe burns on skin.

Warranty

V2 Structural Systems warrants its products to be free from manufacturing defect and ensures those products meet the published characteristics when tested in accordance with ASTM and V2 standards. No other warranties by V2 are expressed or implied, including no warranty of merchantability or fitness for a particular purpose. V2 will not be liable for damages of any sort resulting from any claimed breach of warranty. V2's liability under this warranty is limited to replacement of material or refund of the sales price of the material. There are no warranties on any product that has exceeded the "shelf life" or "expiration date" printed on the package label.



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