

Specification: AHC-TC22

1. Definition

- a. Emtek 31F : An engineered, stress-rated timber composite product assembled from selected and prepared wood laminations bonded together with adhesives with the grain of the laminations approximately parallel longitudinally.

2. Performance Requirements

- a. Manufactured, tested and verified in accordance with AHC-TC01: STANDARD FOR INDUSTRIAL MATTING, and ASTM-5456 – Standard Specification for Evaluation of Structural Composite Lumber Products

3. Manufacturer Qualifications:

- a. Manufacturer shall be a third party witnessed facility, qualified under ASTM-5456, and licensed to produce Emtek under Patent #7,137,226.
- b. Factory mark each piece of Emtek with Allowable Design Load Identification and Manufacturing Facility name. Place mark on surfaces in conspicuous manner.

4. Quality Standard:

- a. Product shall be produced in accordance to the Quality Assurance program outlined in ASTM 5456
- b. All Product shall be proof loaded to 150% of stamped design load

5. Hardware Properties:

- a. All steel hardware shall be Grade A36 or higher as identified by the hardware supplier
- b. All cable hardware shall have rating tag attached to the hardware

6. Adhesive Properties:

- a. Any and All Adhesives used in the manufacture of Emtek products shall comply with ASTM-2559 – Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions.

7. Design Values

- a. All Emtex 31F product shall meet the following design properties as defined in ASTM 5456

emtek Design Properties

$$\left. \begin{aligned} F_b &= 4123 \text{ psi} \\ F_v &= 379 \text{ psi} \end{aligned} \right\} \text{ W/ 1.33 Load Duration Factor}$$

$E = 1.6 (10)^6 \text{ psi}$

Unit Section Properties						
No	Size t x b	A In ²	I In ⁴	S In ³	M _A K-Ft	V _A K
1	3.5" x 12"	42	42.875	24.50	8.418	10.612
2	4.5" x 12"	54	91.125	40.50	13.915	13.644
3	5.5" x 12"	66	166.375	60.50	20.787	16.676
4	6.5" x 12"	78	274.625	84.50	29.032	19.708
5	7.5" x 12"	90	412.875	112.50	38.653	22.740

$$A = t(b) \quad I = \frac{bt^3}{12} \quad S = \frac{bt^2}{6} \quad M_A = F_b S \quad V_A = \frac{F_v A}{1.5} \sim \left(\frac{FV \text{ lb}}{Q} \right)$$

$K = \text{KIP} = 1000 \text{ lbs}$

$M_A = \text{Allowable Moment W/1.33 Load Duration Factor}$

$V_A = \text{Allowable Shear W/1.33}$