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IVR 4063.704

March 25, 2016

TO: Building Design and Code Enforcement Professionals

FROM: Boise Cascade EWP Engineering

RE: Substitution of VERSA-LAM® 2.0 3100

The following letter contains comparison design values of Trus Joist® and Boise Cascade Engineered Wood Products, specifically VERSA-LAM® Beams, to assist in the substitution review:

VERSA-LAM® 2.0 3100 / Parallam® 2.0E

VERSA-LAM® laminated veneer lumber (LVL) manufactured by Boise Cascade Engineered Wood Products has building code product acceptance per joint evaluation report ICC ES / APA ESR-1040, dated 09/2015. As shown in the table below, all allowable design values for 3 1/2", 5 1/4" and 7" wide VERSA-LAM 2.0 3100 beams meet or exceed corresponding design values of Parallam® 2.0E grade parallel strand lumber (PSL) beams, with the exception of horizontal shear. VERSA-LAM® 2.0 3100 allowable horizontal shear stress is approximately 2% lower than the Parallam® 2.0E (285 psi vs. 290 psi). This difference is structurally insignificant for virtually all beam applications since shear stress rarely controls a beam design and statistically, the design loads that are applied to beams typically cannot be predicted with such precision.

Product Name	Fiber Stress Bending	MOE _{apparent}	MOE _{true}	Shear	Compression Perp (Brg)	Compression Parallel
	lb/in ²	lb/in ²	lb/in ²	lb/in ²	lb/in ²	lb/in ²
VERSA-LAM 2.0 3100	3100	2.0×10^6	2.1×10^6	285	750	3000
Parallam 2.0E	2900	1.9×10^6	2.0×10^6	290	750	2900

Trus Joist MOE values reported as shear-free MOE, VERSA-LAM MOE values reported as apparent MOE - multiply by 1.05 for true MOE values.

Thus if a Parallam® 2.0E beam is designed correctly with all stresses at or below published allowable values, Boise Cascade EWP Engineering would approve the direct substitution of a same-size VERSA-LAM® 2.0 3100 beam. Any holes and notches shall be analyzed with either BC Calc® software or by Boise Cascade EWP Engineering.

Please note that the project's design professional (engineer and/or architect) of record should always be notified prior to any product substitution. If there are any further questions regarding this matter, please contact Boise Cascade EWP Engineering at 800.232.0788.