

Versa-Lam[®] Fire Resistance

Boise Cascade EWP Versa-Lam[®] is laminated veneer lumber (LVL) produced from either Douglas Fir or Southern Pine veneers at our manufacturing facilities in White City, OR, Thorsby, AL and Lena, LA. The char rate of Versa-Lam[®] has been quantified by testing conducted at the U.S. Forest Products Laboratory (FPL) in Madison, WI. The project, titled Charring Rate of Composite Timber Products (Project ID 1983), was conducted by Robert H. White, Project Leader of Wood Preservation and Fire Research at the FPL.

This research project involved measuring the charring rate of various composite timber products and comparing results with solid wood. Test results of several species confirm that the charring rate of Versa-Lam[®] is equivalent to solid wood, at a rate of 1 ½ inches per hour. This rate would apply to all thicknesses of Versa-Lam[®], 1 5/16" to 7" thick. Thus, Versa-Lam[®] may be considered equivalent to solid sawn lumber and timber for fire resistance.

This equivalency is also documented in CSA086-19: Annex B4, where the one-dimensional charring rate β_0 is the same for solid sawn and LVL (SCL) (0.65 mm/min) and the notional charring rate β_n is less for LVL (0.7 mm/min) when compared to solid sawn timber (0.8 mm/min).

The charring rate in CSA086-19: Clause B.4.3 applies when the wood is exposed to the standard fire exposure in accordance with CAN/ULC-S101 and where the heat transfer is one-dimensional, such as in solid wood walls and floors. The use of the notional charring rate in Clause B.4.4 is recommended when considering rectangular cross-section members because the method implicitly accounts for the effect of cracking, formation of fissures, and in particular, corner rounding, which is not included in the method in Clause B.4.3.