

Sealed Calculations for I-joists and Structural Composite Lumber February 2024

Prefabricated wood I-joists (I-joists) and Structural Composite Lumber (SCL), which includes Laminated Veneer Lumber (LVL), are specifically recognized in the model building codes. I-joists are covered under section R502.1.2 of the 2018 and 2021 International Residential Code (IRC) and section 2303.1.2 of the 2018 and 2021 International Building Code (IBC). Both sections read as follows: *Structural capacities and design provisions for prefabricated wood I-joists shall be established and monitored in accordance with ASTM D 5055.* SCL is covered under section R502.1.5 and R802.1.4 of the 2018 and 2021 IRC and section 2303.1.10 of the 2018 and 2021 IBC and those sections read as follow: *Structural capacities for structural composite lumber shall be established and monitored in accordance with ASTM D 5456.*

Roseburg Forest Products manufactures and monitors I-joists (RFPI®-Joist) in accordance with ASTM D 5055 and LVL (RigidLam® LVL) in accordance with ASTM D 5456. Both processes are audited by APA, The Engineered Wood Association, which is an accredited independent third-party inspection and certification agency.

Roseburg maintains various code evaluation reports for its engineered wood products (EWP), for example ICC-ES ESR-1251 for RFPI-joists and ESR-1210 for RigidLam LVL. These code reports include approved design properties and, in some cases, allowable spans for the various products. In addition, Roseburg provides literature and software that incorporate the approved design values which allow the user to determine the required product for a specific application. I-joist and LVL products are manufactured in long lengths and then cut to length to meet the design requirements for specific applications. Because the approved design values are provided in the code reports and incorporated into the literature and software, it is not necessary, or required by code, to have an engineer's seal on calculations, span or load tables, or on software output. Plated trusses, on the other hand, are custom designed and fabricated for a specific application and therefore must follow different provisions and guidelines as outlined in Section 2303.4 of the 2018 and 2021 IBC, which Section 2303.4.1.1 reads as follows: *Truss Design Drawings. The written, graphic and pictorial depiction of each individual truss shall be provided to the building official for approval prior to installation.*

In summary, provided an I-joist or SCL manufacturer has a valid code evaluation report, an engineer's seal on calculations, span or load tables, or on software output is not required by the IBC or IRC.