

## Engineer's Seal Requirements for I-Joists, Structural Composite Lumber and Plated Trusses

Pre-fabricated wood I-joists and Structural Composite Lumber (SCL) products do not require an engineer's seal on design calculations; however, plated trusses do as specified in model building codes. The primary reason for this difference is that I-joists and SCL products have code recognized design properties by means of a code evaluation report. Weyerhaeuser provides specification literature and software tools based on the information in those code reports. This is very similar to dimension lumber products which have published allowable span tables in the building code for various applications. Conversely, plated trusses are specifically designed for each span and loading condition as the web and chord members can be custom cut and the truss plates can be of various sizes – currently there are no published span charts or design properties within a code evaluation report or in the building code.

For simplicity only the International Residential Code (IRC) will be discussed, but the same requirement exists in the International Building Code (IBC).

*Prefabricated wood I-Joists* are covered under Section R502.1.4 of the 2009/2012 IRC and this section states that "*Structural capacities and design provisions for prefabricated wood I-joists shall be established and monitored in accordance with ASTM D 5055.*" Weyerhaeuser has established and continues to monitor structural capacities and design provisions for TJI® Joists in accordance with ASTM D 5055. Section 2.0 of Weyerhaeuser's code evaluation report, ICC-ES ESR-1153, confirms compliance with the relevant building codes.

Structural Composite Lumber is covered under 2009/2012 IRC Section R104.11: *Alternative materials, design and methods of construction and equipment.* Similar to TJI® Joists, Weyerhaeuser has established and continues to monitor structural capacities and design provisions for our SCL products, Microllam® LVL, Parallam® PSL, and TimberStrand® LSL in accordance with ASTM D 5456. And the same as TJI® Joists, Section 2.0 of Weyerhaeuser's code evaluation report, ICC-ES ESR-1387, confirms compliance with the relevant building codes. These code reports may be viewed at [www.woodbywy.com](http://www.woodbywy.com) or at [www.icc-es.org](http://www.icc-es.org).

Plated trusses must follow different provisions and guidelines as stated in section R502.11.1 of the 2009/2012 IRC. This section states: "*...The truss design drawings shall be prepared by a registered professional where required by the statutes of the jurisdiction in which the project is to be constructed...*" In addition, Section R502.11.4 gives a detailed list of the required information that must be provided since each member is configured and designed for a specific job.

Weyerhaeuser products can be specified using literature or proprietary software programs, including Forte® and Javelin®. Forte and is a single member sizing tool, whereas Javelin is a CADD software tool that has the ability to track and distribute vertical loads to multiple levels of roof and floor. These programs size Weyerhaeuser products for the exact condition of spans, loads and dimensions entered by the software user. It is the responsibility of the software user to ensure proper product application, and that accurate design loads and dimensions are input. Inputs and the resulting framing plan typically are not checked by a Weyerhaeuser Associate; however, the sizing of proprietary products by Weyerhaeuser software will be accomplished in accordance with Weyerhaeuser product design criteria and code evaluated design values.

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