

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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Engineered Wood Structural Products

Code: 2018 NC Residential Code
Sections: R502, R602, and R802

Date: April 25, 2018

Question:

Without an engineered design, can engineered wood structural products be used for floor wall and roof-ceiling framing in lieu of the prescriptive load bearing members addressed by the NC Residential Code (NCRC), Sections R502, R602, and R802?

Answer:

As they are not addressed prescriptively by the code, engineered wood structural members are considered as alternate materials as addressed by the NC Administrative Code and Policies, Section 105 and are subject to acceptance by the local code enforcement official (CEO). It is the general position of the Department of Insurance, Engineering Division that alternate materials may be accepted without an engineered design when the materials have been properly tested and evaluated and shown to be equivalent to those materials prescriptively included in the technical codes. The Engineering Division can recommend acceptance of engineered wood structural products as an acceptable alternate to the prescriptive framing members addressed by the NCRC under the following conditions:

1. The material manufacturer provides published tables (similar to the NCRC prescriptive tables) with the allowable sizes, spans, and load conditions of the members; and
2. The products have been tested and evaluated and are covered by an approved evaluation report (such as ICC-ESR reports); and
3. The products are used in strict compliance with the “conditions of use” section of the evaluation report; and
4. The products use is for uniformly distributed load conditions (a design is required for a point load condition including the load path to the footing – this would apply to both conventional framing as well as engineered wood products); and
5. The products are not used in lieu of members included in a sealed design (a design is required for a change to a sealed plan altered in any way – this would apply to both conventional framing as well as engineered wood products); and
6. The product use is not in conflict with any code sections that specifically requires a sealed design (example: R802.10.2).

Keywords:

LVL, I-joist, Truss Joist, engineered wood