Manufactured Structural Components & Manufactured Buildings for One and Two Family Residential Projects

Background

The International Residential Code (IRC) is a prescriptive code for construction of buildings not exceeding 36 feet in depth and not more than three stories in height above grade. The tables contained in the code for design values of rafters and joists; allowable span for roof rafters and floor joists; and size and span for wood girder beams are designed to these parameters. When manufactured structural components are proposed to be used or materials are proposed for use outside the scope of the IRC, the IRC does not address any requirement for the size, span or loading of the specific structural member. In order to insure that loading of all structural elements are within accepted safety levels, the following administrative policy was developed to address those structural components not included in the IRC.

Purpose

This administrative policy is to clarify when calculations and registered design professional seals are required for structural components used in the construction of one and two family residential buildings and manufactured modular buildings as permitted by Section R-104.11 of the IRC. Back-up calculations and documentation may be required.

Manufactured Components

A Pennsylvania registered design professional's seal shall be required on construction plans or on written letter to address the following manufactured building components when used for structural applications in one and two family residential buildings along with the submission of construction plans for a building permit. The design professional shall sign and date all pertinent material.

1. Steel beams, steel headers, steel lintels and steel columns
2. Manufactured wood beams or girders
3. Field assembled wood beams that include plywood or steel
4. Roof and floor trusses
5. Manufactured foundation systems
6. Bearing walls more than 10’ in height
7. Wall bracing not complying with Chapter 6 of the IRC
8. Wood framed walls supporting more than 2 floors and a roof
9. Pole sheds greater than 500 square feet
**Manufactured Modular Buildings**

A registered design professional’s seal shall be required on all one and two family residential construction plans for the manufactured modular buildings containing any of the items listed above and must bear the seal of the inspection agency that performed inspections in the manufacturing facility.

**Wall Bracing**

Letters or plans approved by registered design professionals must contain specific details on the bracing method, braced panel locations and fastening requirements. Walls more than 10’ in height must be detailed to show framing details, sheathing and fastening requirements. Letters must indicate that methods specified by the design professional meet the design criteria of 2009 IRC or 2009 IBC.