Manufactured Floor Joist, Beam & Truss Roof Systems

Information Required for Building Permit Application & Inspection

DESIGN CRITERIA

All manufactured roof, beam, and floor joist systems must be designed using the Limit States Design method. Plans must indicate factored loads with live and dead loads totaled.

Where proposed truss design exceeds the limits of Section 9.4 of the BC Building Code, for example if truss spans exceed 40 feet or attic trusses support floor loads on bottom chords, the entire building must be designed by a structural engineer.

Where solar panel roof installation is proposed, whether for current or future implementation, appropriate structural design consideration is essential. A structural engineer's design and review is required for all building permit applications involving solar panel roof installations.

The following **site-specific** information is required to demonstrate compliance with the *2024 BC Building Code*. The required information detailed below should be on the drawings submitted electronically with the online building permit application.

APPLICATION INFORMATION REQUIRED

Property Information:

1. Civic address
2. Building permit number (if known)

Roof Systems:

1. Dimensioned truss layout showing bearing, intermediate support, and areas framed by others.
2. Identify the end reactions of girders and wall trusses (factored loads live and dead to be totaled). Identify all the loads (i.e. span of floor system carried) and if wall trusses carry floor loads.
3. Identify factored roof loads, live and dead.
4. Roof slope and roofing material (e.g. concrete tile).
5. Maximum truss height.

Floor, Beam and Lintel Systems:

1. Dimensioned floor and beam layout to include bearing, intermediate support, areas framed by others, beam-end reactions (factored live and dead loads to be totaled), and joist direction and spacing.
2. Manufacturer's specific product name, size, and number for engineered floor joists, floor trusses and beams.
3. Assembly details needed to meet vibration criteria including:
   - Subfloor type and thickness
   - Whether subfloor is glued
   - Type of blocking, strapping or ceiling finish (directly applied)
4. Factored floor loads, live and dead.

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APPLICATION INFORMATION REQUIRED cont'd

Point Loads:

Individual factored point loads (end reactions) less than 2,860 lbs do not need to be identified on the plans unless the combined point loads from floor, truss, and beams exceed 2,860 lbs.

INSPECTION INFORMATION REQUIRED

Documents for Framing Inspection:

1. Computer-generated proprietary designs for each engineered beam, including a layout plan.
2. Engineer-certified beam documents for engineered beams.
3. Computer-generated proprietary designs for engineered floor joist systems, including a layout plan.
4. Engineer-certified truss documents, including a layout plan.

All Documents for Framing Inspection must:

1. Reference "Limit States Design" and vibration criteria.
2. Have a unique number identifying each engineered product shown on the layout.
3. Identify product name and size.
4. As applicable, describe the:
   - Assembly components
   - Construction details
   - Loads
   - Reactions (with live and dead loads totaled)
   - Bearing locations
   - End grain or squash requirements
   - Bearing size

If you have any questions or require clarification, please contact Building Inspections at 250-755-4429.
This guide is for general information only and does not replace applicable building codes, bylaws or other regulations.
The building owners are responsible for full compliance.