



ONTARIO TRUSS REPORT

Are You Using the Correct Fasteners?

A common question that is asked by designers and installers when installing framing hardware is *“what nails should I be using?”*

The Ontario Building Code (OBC) specifies that all nails used for framing purposes must be either common spiral or common wire meeting the requirements of CSA standard B111. The minimum connection requirement for trusses (less than 40' clear span) to the top plates of walls is three (3) 3 ¼" common spiral nails (0.122" diameter x 3 ¼" long), also known as 12d spiral nails. These prescribed fasteners are not the same nails to be used with framing hardware and hangers.

Each pre-engineered rafter tie, truss hanger, bearing enhancer, etc. is designed and tested using specific fasteners. If the correct fastener is not installed there is a chance that the connection capacity can be substantially compromised. Unless otherwise specified by the designer, all nails should be common wire (not spiral) and of the correct diameter and length specified by the hardware manufacturer.

The shear capacity of a nail is a function of its diameter and length of penetration into the wood. This means that “specialty” short nails, which have the same diameter as 3" or 2 ½" common wire nails, but are only 1 ½" long, will not have the same capacity as full length nails. A common mistake is to assume that these short nails are specifically manufactured for joist hangers (some people call them joist hanger nails). These fasteners are typically specified for use when attaching a single 2x joist to the hanger or when attaching a hanger to a single 2x header. They should not be used when header material is as thick as the length of the full size nail.

When using pneumatic nail guns, pay special attention to the nail diameter as the most common lengths available have smaller diameters than their corresponding hand driven nails. Most pneumatic nails are considered “box” nails and have less capacity than common wire nails. Only tools with nail hole locating mechanisms should be used.

When installing your connectors, do not use finishing nails, roofing nails or deck screws. To ensure that your connection is structurally sound, use the correct fastener for the correct application. When in doubt, contact your local truss manufacturer or hardware supplier and get the right information before you start, as removing and replacing the wrong fasteners is a lot harder than installing the correct ones first.

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The Ontario Wood Truss Fabricators Association (OWTFa) represents the common interests of the truss industry in Ontario, including promoting the use of wood trusses in residential, commercial and agricultural structures. For more information please contact Mike Phillips, Executive Director of the Ontario Wood Truss Fabricators Association (OWTFa) at 416-235-0194 or www.owtfa.com