



**Subject:** Technical Note - Solar Ready Trusses - Part 9  
**To:** Interested Parties  
**Date:** August 5, 2013

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**Introduction.** There have been a number of enquiries about "Solar Ready" trusses. They are trusses designed in accordance with the *Solar Ready Guidelines* that have been developed by *Natural Resources Canada's (NRCan) CanmetENERGY* and *Office of Energy Efficiency New Housing Division* in partnership with the *Canadian Solar Industries Association (CanSIA)*. This requires wood trusses to be in compliance with: the *National Building Code of Canada (NBCC)*; *CSA O86, Engineering Design in Wood*; and *Truss Plate Institute of Canada, Truss Design Procedures and Specifications for Light Metal Plate Connected Wood Trusses*. Similar code references apply to the *BC Building Code*.

**Structural Requirements.** The *Building and Safety Standards Branch* of BC has prepared a *Solar Hot Water Ready Regulation* (revised Mar 28, 2013) which includes a statement regarding requirements for roof trusses in subsection 4(2) "Structural Requirements":

"(2) Roof trusses located in areas referred to in section 3 (1) must be designed to accommodate the anticipated load, including

- (a) a uniform dead load of 0.24 kPa, in addition to design loads required by the British Columbia Building Code, and
- (b) point loads resulting from the uniform dead load referred to in paragraph (a)."

Therefore in order to comply with the *BC Building Code*, designated Solar Ready trusses are designed to withstand the most demanding load conditions that could be expected, including at minimum:

- a. uniform snow load including all dead loads associated with the period when the solar panels are not installed;
- b. when/if installed, the panel dead load and the uniform snow load on top of the panel in many cases will become point loads imposing considerably higher stress levels in the truss members.

*The Truss Plate Institute of Canada, Technical Bulletin #7, Solar Ready Truss Design Procedure* provides a procedure using current truss design software that will accommodate increased stress levels that would be developed in the truss members.

It should be noted that simply applying a load of 0.24 kPa on the whole roof is relatively insignificant compared to the actual loads that may be developed in the designated area. In fact it creates unnecessary increased requirements for load paths in the entire structure. Only the wood roof trusses comprising the designated area are required to accommodate possible worst case loading configurations, noted at b. above.

**Installation.** It's important to realize truss plants cannot be expected to have the information nor are they qualified to determine the location of the 9.3 square meter designated area. This must be the responsibility of the builder, engineer, or other responsible party.

When solar panels are installed, truss top chords cannot be drilled, lagged or cut in any way. Because of this, and also roofing concerns, solar panel installation must be done by qualified persons.

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