



# Regional District of Central Kootenay

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## Modular Housing and the A277 Standard

### SCOPE

The following information clarifies the RDCK building department's building and plumbing permitting and inspection requirements as they relate to Modular housing. The information below only applies to Modular housing<sup>1</sup> and is not to be confused with the CSA Z240 Standard for Manufactured housing.

This information is intended to inform prospective builders, property owners, purchasers of homes with modular components, modular home sales personnel and the modular building construction industry (factories) of our requirements as they relate to permitting and inspection of dwellings containing factory built modular components. The information provided does not have any specific legal effect; the pertinent legal documents referenced are the BC Building Code 2012, The CSA A277-08 Standard, The HomeOwner Protection Act and the RDCK's Building Bylaw 2200.

### CONTEXT

The 2012 British Columbia Building Code (BCBC 2012), applicable to permits applied for after December 20, 2012<sup>2</sup>, deleted previous code references to the modular building, quality assurance standard CSA A277. The A277 standard is a quality assurance document and not a code citing minimum construction requirements. Modular building components constructed under the A277 quality assurance standard shall meet the construction requirements of Part 9 of the BC Building Code, but they do so in factories (located in Alberta, BC, Idaho and Oregon (as examples)). In these factories the inspection process is provided by private factory employed personnel whose work is audited to A277 requirements, by private certification agencies (CSA, Warnock Hershey or Intertek as examples of such agencies).

### INSPECTION PROCESSES

The A277 factory certification applies to only the factory constructed modular components and has no application outside of the factory walls.<sup>3</sup> Onsite construction of permanent foundations, plumbing, framing, insulation and exterior additions shall also meet Part 9 requirements of the BCBC, but the inspection process shall follow those of the RDCK's Building Bylaw #2200<sup>4</sup>. Typical 72 hour notice requirements apply to requests for inspection at each stage.

### PERMIT APPLICATIONS

The building and plumbing permit application process shall also follow those specified in the RDCK's Building Bylaw 2200, and in particular Sections 8 and 10<sup>5</sup>. Building permit application for Modular homes

<sup>1</sup> CSA A277-08 (reaffirmed 2013) Procedure for factory certification of buildings

<sup>2</sup> Province of BC, Ministerial Order No. 188, BC Reg 264/2012, September 7, 2012

<sup>3</sup> CSA A277-08 (reaffirmed 2013) Procedure for factory certification of buildings

<sup>4</sup> RDCK Building Bylaw 2200, 2010 <http://www.rdck.ca/assets/Government/Bylaws/Building/Building-Consol.pdf>

<sup>5</sup> RDCK Building Bylaw 2200, 2010 <http://www.rdck.ca/assets/Government/Bylaws/Building/Building-Consol.pdf>



are no different than those required for any other “Standard Building<sup>6</sup>” and shall include dimensioned floor and foundation plans, cross sections and elevations at ¼” = 1’-0” scale. If the factory built modular construction or the supporting site built structure include components that are referenced in Section 9.4 or 9.23.14.11 of the BCBC and hence designed to Part 4 requirements (trusses, engineered lumber beams and joists), then the building permit application shall include component specifications sealed by an engineer licensed to design such components in the Province of British Columbia.

## **PLUMBING**

Plumbing shall be installed and tested by plumbers with “tradesman’s qualification certification as a plumber<sup>7</sup>” in BC or “an indentured apprentice supervised by a journeyman<sup>8</sup>” in BC who meets the requirements noted above. We have attached as Appendix 1 the RDCK’s “Certification of Plumbing Test” form, for completion by the factory employed plumber or their indentured apprentice for that portion of the plumbing system installed at the factory. A plumbing schematic detailing the piping layout ‘end to end’ shall be supplied. That is, a piping layout demonstrating the vent locations through the roof to the open end of the building drain where it terminates outside and usually below the building, will allow the onsite piping to be readily constructed even when the piping in the modular construction has been covered by interior finishes.

## **VENTILATION**

Mechanical ventilation systems shall be sized and specified for the entire building at the factory where primary components of the system have been installed. We have attached as Appendix 2 the Mechanical Ventilation Checklists developed by the Thermal Environmental Comfort Association (TECA) which allow system specification to be quickly performed, once the number of bedrooms and interior air volume of the entire building have been determined. Correct mechanical ventilation sizing is extremely important in the RDCK, as we have significant radon soil gas levels recorded in the district and the common use of solid fuel burning appliances (wood stoves). Depressurization of interior spaces leading to either radon gas ingress or backdrafting of carbon monoxide gases through the interior, leads to low and potentially dangerous interior air quality.

## **WARRANTY**

Modular homes certified to meet the A277 standard meet the definition of “Factory Built Home<sup>9</sup>” in the Home Owner Protection Act and do not require registration with the Home Owner Protection Office. They are thus not warranted. Prior to purchase, those considering the purchase of Modular homes should contact their solicitors to clarify warranties and the transferability of same for the modular, factory built construction components.

John Southam



Building Manager, RDCK

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<sup>6</sup> RDCK Building Bylaw 2200, 2010 <http://www.rdck.ca/assets/Government/Bylaws/Building/Building-Consol.pdf>

<sup>7</sup> Province of BC, British Columbia Plumbing Code 2012, 1.2.3.1 Personnel Performing Plumbing Work , 6

<sup>8</sup> Province of BC, British Columbia Plumbing Code 2012, 1.2.3.1 Personnel Performing Plumbing Work , 6

<sup>9</sup> Province of BC, Home Owner Protection Act Regulation B.C. Reg. 182/2010, June 25, 2010, Definitions