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Information Bulletin
Building and Safety Policy Branch
PO Box 9844 Stn Prov Govt
Victoria BC V8W 9T2
Email: building.safety@gov.bc.ca
Website: www.housing.gov.bc.ca/building

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Clarification of 2006 BC Building Code Regulations pertaining to Backflow Prevention for Solar Domestic Hot Water Systems

Solar Domestic Hot Water Systems (SDHWS) are required to conform to CAN/CSA-F379.1-88. and must be installed in conformance with CAN/CSA-F383–87. The BC Building Code (BCBC) does not require certification with these standards.

CSA F379.1-88 Requirements: The CSA F379.1-88 standard allows the use of both single and double wall heat exchangers:

Single wall heat exchanger- Drainback and Closed-loop

- require a non-toxic heat transfer fluid (inclusive of all additives) or potable water in the heat transfer loop at the time of installation. Material Safety Data Sheets (MSDS) for the specific product(s) being used may provide guidance for determining toxicity levels.
- require a heat exchange tube of stainless steel construction.
- require the installation of a backflow preventer in accordance with CAN/CSA-B64.3, which is a dual-check Valve Type, with Atmospheric Port (DCAP) at the inlet to the solar hot water system.
- require other safeguards such as a pressure gauge, pressure relief valve and maximum working pressure as specified in CAN/CSA-F379.1-88.

Double wall heat exchangers

- require the use of a heat transfer fluid that is non-toxic, or toxic with a Gosselin toxicity rating of 2 or less (inclusive of all additives).
- do not require use of a backflow preventer unless a make-up water connection is provided to the heat transfer loop.
- require other safeguards such as a pressure gauge and a visible means of leak detection
  as specified in CAN/CSA-F379.1-88.

BC Building Code Requirements: The current BCBC does not require any additional safeguards for SDHWS beyond those required by the CSA standards, unless a make-up water connection is made directly to the solar heat transfer loop.

If a direct connection is made to provide make-up water to a solar heat transfer loop that contains anything other than potable water, this direct connection should be protected in accordance with Section 7.6.2 of the BCBC.