



# Requirements for Water Heaters Used for

[← Back](#)   [Main](#)

## 6.25.7 Requirements for Water Heaters Used for Combination Heating Systems

[Home](#)

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[Training](#)

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### ▶ 1.0 Definitions

- 1.1 Combination system – an installation that combines both potable hot water and hydronic space heating.
- 1.2 Qualified designer – Hydronic heating systems shall be design approved by an engineer or a qualified hydronic heating design specialist. A qualified hydronic heating design specialist may be an individual or company that can provide verification of successfully completing technical training in hydronic heating system design.

### ▶ 2.0 Requirements For Combination Heating Systems

- ▶ 2.1 These requirements shall be used in conjunction with Saskatchewan Department of Health's Installation Guidelines For Combination Heating Systems, the most recent version of the CSA B214 – Installation Code For Hydronic Heating Systems and the Manufacturer's Installation Instructions.
- ▶ 2.2 Water heaters certified for use in a combination system shall be used. The CSA standards for gas water heaters certify these units for potable water, or potable water and space heating applications only. Water heaters can not be used in a space heating only application.
- 2.3 No modification can be made to the components, controls or safeties that are a part of the certified combination water heater.
- 2.4 Side or bottom connections on water heaters shall not be used in combination potable/space heating applications unless the manufacturer has, by design, provided side or bottom connections for this purpose.
- 2.5 A combination heating system shall have a timed circulator on the space-heating loop to circulate the water every 24 hours to meet the requirements of Saskatchewan Health and the CSA B214 Hydronic Code.
- 2.6 A heat exchanger shall be used when a non-potable heating medium is used in the space heating system.
- 2.7 When a heat exchanger is used, the following requirements shall apply:
- A device shall be installed to automatically maintain the operating pressure of the secondary loop lower than that of the primary (potable) side.
  - The gas contractor shall affix a prominent and permanent label to the secondary loop relief valve advising that the heat exchanger shall be examined in the event of relief valve discharge.
  - Isolation valves shall be installed on the inlet and outlet piping.
  - A timed circulator shall be installed capable of completely exchanging the water in the primary (potable) side every 24 hours.
  - When temperatures greater than 140°F are required in the space heating loop a thermostatic mixing valve shall be installed to ensure that the potable water does not exceed 140°F.
  - The secondary loop shall require the following additional components;
    - a relief valve capable of protecting the lowest rated component of the system;



- ii. an expansion tank rated for maximum system pressure;
- iii. a back-flow prevention device if a potable feed water is attached;
- iv. a pressure gauge;
- v. temperature gauges located on the supply and on the return;
- vi. a circulator; and
- vii. an air eliminator.

### **3.0 Recommended Installation Guidelines**

- 3.1 A combination system must be designed by a qualified designer.
  - 3.2 All piping, fittings and components in contact with the potable water must be suitable for use with potable water.
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