

Flushing a Hot Water Heating System

RHWHA NEWS

Published 3 times a year by the Residential Hot Water Heating Association of BC.

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Next copy deadline: Feb 1, 2001

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Flushing a system, other than an initial flush after installation, is only necessary if system water is dirty due to corrosion in the system. Polybutylene tubing and other non-oxygen barrier tubing allow oxygen to permeate the wall of the tubing and cause corrosion of all nonferrous components in the system including boilers, pumps, purgers, expansion tanks, and steel piping. If corrosion is not controlled, a brown sludge will be deposited throughout the system.

Before the source of the problem is addressed by installing an isolation heat exchanger and/or treatment of the system water with chemicals, the system should be thoroughly cleaned.

Flushing Procedure

- 1) Turn off power and gas to boiler and system
- 2) Shut off supply valves to all zones and shut off valves to all individual loops in the system.
- 3) The object is to flush through one loop at a time.
- 4) Follow the flow of the water supply from where it is connected to the heating system.
- 5) Manually open one zone valve and one valve to the first loop in that zone.
- 6) Attach a hose from the drain valve (at end of zone or on boiler) to floor drain or to outdoors.
- 7) Set feedwater regulator to bypass position and flush through one loop until the water comes out clean.
- 8) Open valve to next loop and then shut the previous one.
- 9) After flushing through all loops, flush the boiler, indirect water heater and any other components of the system.
- 10) At the end of this first flush add a cleaning agent to the system water, open all the valves, turn on power and gas and fire the boiler to heat up the system water .
- 11) Ask the customer to run the system for a minimum of one day.
- 12) The cleaner will dissolve some of the deposits on the inside wall of the tubing, resulting in dirty water again.
- 13) Flush the entire system again.
- 14) Depending on the age of the installation, some steel components (i.e. the boiler) may have a heavier buildup of corrosion deposits that will remain after this second flush.
- 15) If chemicals are used to treat the system water a reduced pressure backflow preventer must be installed in the feedwater line to the system.

Specialized equipment is available

Specialized flushing equipment, designed in Europe, utilizes a water meter to monitor the water flow and a computer module to inject compressed air into the water. This results in a scrubbing action as the water is pushed through the tubing. This method is very effective, especially for the second flush, as it loosens and removes dirt that would not be touched by a flush at normal water pressure.

Flushing is only the first step

Some customers are under the impression that a simple annual flush of the system is all that is needed to solve a corrosion problem. While flushing removes dirty water, corrosion will continue at an increased rate after flushing since the clean water has a higher oxygen content. Flushing alone is not the answer to corrosion. It must be combined with chemical treatment or installation of an isolation package.

—Gerhard Herwig, Surrey Mechanical Ltd.