

Gas Equipment Bulletin: Inspection of Heat Exchanger Failures

ITS 21-016

Rationale: To provide guidelines for the inspection of a gas fired heating appliance suspected of having a cracked heat exchanger.

When checking for a cracked heat exchanger, be sure to operate the furnace for a reasonable length of time (10-15 minutes) to allow the heat exchanger to heat sufficiently.

Face Plate Cracks

1. Advise the furnace owner of the defect if there is no flame disturbance or carbon monoxide being produced. A crack in the faceplate may not necessitate the replacement of the heat exchanger or appliance.
2. If the face plate crack can be repaired or if it is not interfering with the operation of the appliance, the appliance may stay in service until the next scheduled maintenance check (annually).
3. Check for loose screws in the draft diverter and on face plates. Replace loose screws with larger screws where necessary.

Cracks or Hairline Fractures in the Heat Exchanger

Regardless of the apparent extent of the defect on discovery, all cracks and hairline fractures have the potential to become serious safety hazards.

Where there is no flame disturbance or evidence of carbon monoxide in ambient atmosphere:

1. Advise the owner in writing of the defect and of the safety hazard.
2. Advise the owner that it should be replaced as per section 4.21.1 of the current CSA B 149.1.
3. Notify the Utility if the owner does not replace the appliance immediately. When authorization is given to replace the appliance the Utility need not be involved in the determination of the defect.
4. When the Utility is required to verify a defect, the Heating Contractor should mark the location of the fracture directly on the appliance, or alternatively by means of a sketch left on site.

NOTE: The Utility will **NOT** accept camera technology to verify defective heat exchangers. Defects must be readily seen or felt for Utility verification.

The Utility will also not remove heat exchangers. If a Heating Contractor finds it necessary to remove the heat exchanger the Utility will make an effort to accommodate requests for appointments for verification.

Where there is flame disturbance and/or evidence of carbon monoxide in ambient atmosphere:

1. Immediately turn off the fuel supply at the drop.
2. Tag the drop identifying the deficiency.
3. Advise the owner in writing of the failure in the heat exchanger and of the potential safety hazard.
4. Advise the owner that replacement should be done as per section 4.21.1 of the current CSA B 149.1.
5. Notify the Utility if the owner does not replace the appliance immediately. When authorization is given to replace the appliance the Utility need not be involved in the determination of the defect.
6. When the Utility is required to verify a defect the Heating Contractor should indicate the location of the fracture directly on the appliance or alternatively by means of a sketch left on site. **NOTE:** The Utility will **NOT** accept camera technology to verify defective heat exchangers. Defects must be readily seen or felt for Utility verification.

The Utility will also not remove heat exchangers. If a Heating Contractor finds it necessary to remove the heat exchanger the Utility will make an effort to accommodate requests for appointments for verification.

NOTE: If carbon monoxide is being produced and found to be in the ambient space the installer/fitter should determine the cause and/or turn the appliance off.