

**AIR CONTAMINANTS AND CORROSION OF
FUEL-FIRED APPLIANCES**

DISCUSSION

Alberta Municipal Affairs is advising industry and the public of the occurrence of a number of incidents involving fuel-fired appliances and vent connectors which have corroded severely enough to restrict or completely plug appliance vents.

These incidents have primarily occurred during renovation work on existing buildings when the renovations are carried out during the heating season and included the use of adhesives or solvents, especially those containing chlorinated hydrocarbons. Vapours from the adhesives are highly corrosive to fuel-fired appliances, even in extremely low concentrations – as low as ½ part per million.

The incidents were not exclusive to commercial projects, but also occurred in single family homes. Similar adhesives are available for all types of construction and the homeowner must be sure to read the manufacturer's instructions and warnings before attempting any renovation project (such as wood flooring or wall finish materials).

Manufacturer's instructions and warnings should be carefully read and strictly followed before using adhesives or solvents.

The following is an excerpt from a hardwood flooring/adhesive manufacturer's label that illustrates how hazardous these air contaminants are:

CAUTION: KEEP OUT OF REACH OF CHILDREN. VAPOURS ARE HARMFUL. Contains 1,1,1-trichloroethane. Use with adequate ventilation. Do not use in confined areas. Heavy vapours concentrate at floor level. Vapours may cause light headedness. Exposure to fresh air should dispel symptoms.

CAUTION: DO NOT ALLOW VAPOURS from this adhesive to contact open flames or hot surfaces. Otherwise harmful and corrosive gases will cause severe corrosion when in contact with metal (i.e. fuel-fired appliances, metal chimneys, heat exchangers). Keep container closed when not in use.

FIRST AID: For inhalation, remove patient to fresh air. Apply artificial respiration if breathing has stopped. Administer oxygen when breathing starts. For eye contact, Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Building Code 2006.

flush with large quantities of water. If swallowed, do not induce vomiting, keep patient quiet. **CALL PHYSICIAN IMMEDIATELY.** Note to physician: vapours are anaesthetic, never administer epinephrine.

Other air contaminants which may contribute to the corrosion of appliances and vents may also be found in aerosol sprays, paint removers, lubricants, pool chemicals, waxes and cleaners. Many of these are used in small manufacturing plants, furniture refinishing shops, hobby shops and other industrial and commercial operations. Therefore in the initial design of heating, ventilation, and air conditioning systems for buildings it is necessary that these possible air contaminants be taken into consideration so that fuel fired appliances can be operated safely.

For more information please contact Building or Gas Safety with Alberta Municipal Affairs, Safety Services at 1-866-421-6929.