

## Residential Ventilation Issues

by Dara Bowser & Bob Allison

### Why are the Venting Classifications Different for Fireplaces?

9.32.3.1.(1) For the purposes of this Subsection, a *dwelling unit* shall be categorized as:

- (a) Type I when;
  - (i) all fuel-fired combustion appliances located in the *dwelling unit* are direct vented or **except for fireplaces**, are mechanically vented induced draft, and
  - (ii) the *dwelling unit* does not contain a solid fuel-fired combustion *appliance*.
- (b) Type II when a solid fuel fired combustion *appliance* is installed in a Type I *dwelling unit*.
- (c) Type III when a **mechanically vented induced draft non-solid fuel-fired fireplace** or a natural draft *appliance* is present. (underlines by authors).

In this key sentence, it is apparent that fireplaces are treated differently than most non-solid fuel combustion appliances. In general there are three classes of fireplace when it comes to combustion venting.

**Note:** Although most non-solid fuel fireplaces are gas or propane, oil-fired fireplaces and stoves are beginning to appear on the market.

#### (1) NATURAL DRAFT

Connected to any type of chimney (B-vent, L-vent, A-vent or masonry, with or without a liner). This type of appliance is easy to spot. If glass doors are used, they are not usually tight-fitting and can be opened by the occupant without the use of tools.

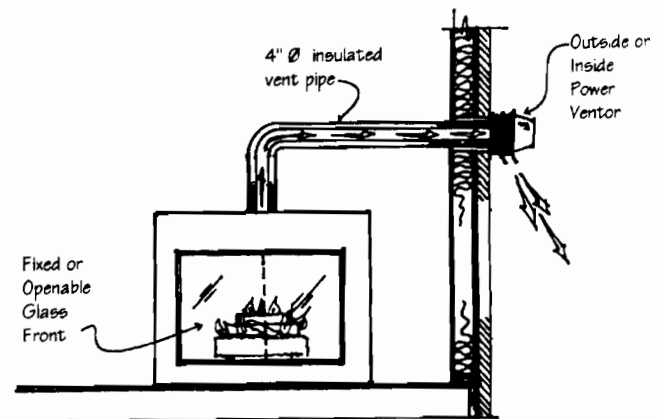
Any dwelling unit with this type of appliance installed is classified as Type III for the purpose of the ventilation systems and Part 6 (CSA F326) design is required.

#### (2) MECHANICALLY VENTED INDUCED DRAFT

These units use a small blower to evacuate the combustion gases. The blower may be located in the unit, or at an outside wall, either inside or

outside of the wall. (see illustration).

The language in sentence 9.32.3.1.(1) is intended to classify these appliances as *Natural Draft*. This apparent inconsistency with the rules governing the types of non-solid fuel appliances arises from the equipment standard to which these appliances are certified. Unlike the standards for furnaces and water-heaters, the fireplace standard allows appliances to be certified with glass doors that are not sealed and can be opened by the occupant without the use of tools.

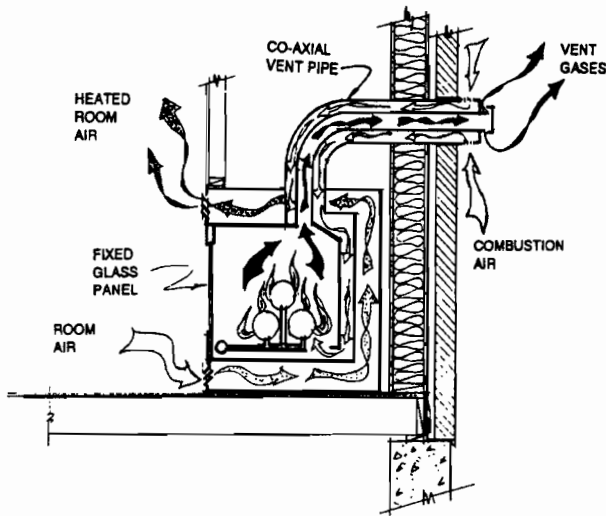


While some manufacturers produce induced-draft fireplaces which do not have unsealed or openable glass doors, this is not true for all models of this type of fireplace. As such, the Building Code does not accept this class of equipment as "equivalent to Direct Vent". Some municipalities have accepted certain models as "equivalent to Direct Vent" however this should only be done for specific models and on the basis of authoritative technical information and/or testing.

#### (3) DIRECT VENT

These appliances are other wise known as "Sealed Combustion" types, the combustion systems of which are completely sealed from the inside of the house. There are several designs including co-axial (pipe within a pipe) and two-pipe. (The illustration shows a co-axial.) Although they are usually installed as side-wall

venting with a special terminal, some designs are capable of venting through a roof, with a termination cap that looks very much like a largish chimney cap.



In many situations, particularly after the appliance is installed, it is very difficult to tell a Direct Vent appliance from an Induced Draft type. On-site inspection should always rely on reading the name-plate of the appliance which will state that it is a Direct Vent. Induced-draft types usually refer to "special venting" and natural draft types may not mention venting at all.

**Note:** A report has been received of a situation where a "Direct Vent" fireplace unit was installed without the fresh air intake pipe connected. A situation such as this would constitute a non-approved installation and should be reported to TSSA (The Energy-Act Fuel-Safety Enforcement Agency) @ 416-325-0211.

**SUMMARY:**

Non-solid fuel fireplaces do not follow the same general pattern of classification as other non-solid fuel appliances. The odd fellow is the induced-draft fireplace, which is considered by the code to be Natural Draft, even though it might appear to be very similar to a Direct Vent unit. Site inspections should verify that the installed unit is indeed a Direct Vent unit and not "similar to" Direct Vent.

The topic of this article is covered in detail in the 2-day OBOA workshop: "Residential Ventilation for Building Officials".

**Note:** We are planning another article on Oil Combustion equipment to address the newer Direct Vent Oil equipment which is beginning to be available. If you have experiences, concerns or information which you would like to share, please fax or email Dara or Bob.

*\*Dara Bowser is an HRAI Ventilation Instructor, an associate member of the CSA Technical Committee on Residential Mechanical Ventilation. Dara has been involved in residential ventilation as a consultant, manufacturer, and trainer for the past 14 years. He currently operates Bowser Technical Inc, a consultancy specializing in HVAC/IAQ design, inspection & trouble-shooting. email: Dara@Bowsertech.com, fax 519-756-9227*

*\*Bob Allison is the Deputy Chief Building Official of the Regional Municipality of Haldimand-Norfolk and has 20 year's experience as a building official. Bob takes a keen interest in ventilation and has assisted in the development of the 2-day OBOA Ventilation Workshop for Building Officials.*

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