

CLEARING THE AIR

Residential Ventilation Issues by Dara Bowser & Bob Allison

Proposed Changes to 9.32 or Reinventing the Ventilation Requirements

Section 9.32 of the OBC has been with us in its current form for 10 years. While minor changes have occurred (removal of electric heat, new CO detector rules) this section has remained more or less the same since 1993. In 1993, the requirements were a significant departure from past practice, and were rushed in to solve the failed experiment that was the 1990 version of 9.32 (a.k.a. hole-in-the-wall). The '93 requirements have been successful in upgrading the quality of residential ventilation and improving safety by discouraging spillage susceptible combustion equipment (i.e. b-vents, a-vents and masonry chimneys). The CO detector and HRV rule for solid fuel demonstrated that CO detectors could be part of a compliance solution and led the way for the more comprehensive CO rules that are now in effect. The 9.32 rules are relatively simple, easy to inspect, and could be carried out in many cases by a non-expert person. There is a clear break between the non-expert area (9.32) and the area where expert design and installation is required (Part 6).

Why Change?: The failed 1990 OBC hole-in-the-wall version of 9.32 was a copy of the NBC section 9.32 at the time. Ontario solved the problems with the hole-in-the-wall by creating the 1993 version of 9.32. The NBC re-wrote 9.32 in 1995 to solve the hole-in-the-wall problem but did not follow the Ontario model. The 1995 NBC version of 9.32 was a failure because it allowed spillage susceptible combustion equipment and did not adequately control depressurization. Some requirements permitted direct-ducting of outdoor air to return air ducts of forced air systems which resulted in furnace return air temperatures falling below the manufacturer's recommended limit. It was also quite complex and therefore difficult to educate inspectors and installers.

After many meetings and field studies, a new NBC version of 9.32 is being proposed but it is significantly different from the current Ontario version. The changes to the current OBC arise from the desire to be aligned with the proposed NBC version of 9.32, and not because of any major problems with the current OBC 9.32.

Proposed Change Highlights: The limited space here does not permit listing of all the changes nor detailed descriptions of each, but here are some highlights:

- Up to 5 bedrooms allowed and new method of sizing the principal fan (lower flows permitted).

- Principal ventilation fan and forced air system must be interlocked if the forced air system provides distribution.
- Minimum capacities for supplemental fans (50L/s kitchen and 25 L/s bath).
- Spillage susceptible combustion appliances are permitted subject to a complex series of rules for interlocked outdoor air supply for the principal fan and exhaust devices. The depressurization test exception is specifically written in and refers to the CGSB 51.71 test standard (not CSA F326).
- CO Detectors must meet the CAN/CGA/CSA-6.19-01 standard and location rules are slightly different.
- Supplemental fan size rating increased to 3.5, principal fan rating remains at 2.5.
- Ventilation ducts are required to be sealed with foil tape or mastic.
- Duct sizing tables are provided which use additional knowledge regarding fan static pressure, length and airflow to select the required duct size.

The entire document can be found at:
<http://206.177.248.18/obc2003/09-32-01.pdf>

Summary: The main functional change for basic ventilation system will be the requirement to interlock the principal fan with the forced air heating system. Perhaps the more significant change is administrative. Expert systems such as make-up air, spillage susceptible combustion appliances and duct sizing which used to reside in Part 6 are to be included in Part 9. This will require that all building officials enforcing residential rules acquire significantly increased levels of knowledge, as this section of the OBC is not an "optional enforcement" section.

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