GAS SAFETY
Information Bulletin

STANDATA

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Location of Sidewall Gas Vent Terminations

This bulletin has been jointly developed by Safety Services and the Building and Gas Sub- councils to inform designers, vendors, builders, contractors (Gasfitters and Sheet Metal Mechanics) and owners of the minimum requirements from adjacent structures and building envelope penetrations to ensure safe and effective venting of gas appliances.

Traditionally, gas appliances were equipped with a draft hood or a draft diverter and depended on natural buoyancy to vent their products of combustion to the outdoors through the roof. Recent trends to improve energy efficiency of appliances have resulted in more appliances with many different vent termination options. As the number of appliances being used in homes that have sidewall vent termination options increases, so has the issues with combustion products at those locations.

The issues that could be affected by frost and ice accumulations due to side yard vent terminations include adjoining property air inlets, appliance performance, windows, doors, building openings, property surfaces, mould, and moisture.

The items to be considered for side wall venting of gas appliances are:

1. Vents from category III or category IV appliances or appliances with special venting systems exceeding 35 000 Btuh,
2. Appliances that have some means of redirecting the exhaust plume
3. Spacing requirements
   (a) Unobstructed distances to property lines of less than 4ft.(1.2m),
   (b) distances of4 ft.(1.2m) and up to 8 ft.(2.4m), and
   (c) distances beyond 8 ft.(2.4m)
4. Separation from other building envelope penetrations.
5. Alcove installations

this is referring to mechanically pulling in air not static fresh air intake

Government of Alberta

Issue of this STANDATA is authorized by
The Chief Gas and Building Administrators

[Original Signed]
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SAFETY CODES COUNCIL

CSA B149.1 – 2010 Natural Gas and Propane Installation Code

8.14.8 *a **vent** shall not terminate*

- *(a) where it may cause hazardous frost or ice accumulations on adjacent property surfaces;*
- *(b) less than 7 ft (2.1 m) above a paved sidewalk or a paved driveway that is located on public property;*
- *(c) within 6 ft (1.8 m) of a mechanical **air-supply** inlet to any **building**;*
- *(d) above a **regulator** within 3 ft (900 mm) horizontally of the vertical centreline of the **regulator** vent outlet to a maximum vertical distance of 15 ft (4.5 m);*
- *(e) except as required by Clause 8.14.8(d), any distance less than that of any gas pressure regulator vent outlet as detailed in Table 5.2;*
- *(f) less than 1 ft (300 mm) above grade level;*
- *(g) within the following distances of a window or door that can be opened in any **building**, of any non-mechanical **air-supply** inlet to any **building**, or of the **combustion air** inlet of any other **appliance**;*
  - *(i) 6 in (150 mm) for inputs up to and including 10 000 Btuh (3 kW);*
  - *(ii) 12 in (300 mm) for inputs from 10 000 Btuh (3 kW) up to and including 100 000 Btuh(30 kW); and*
  - *(iii) 3 ft (900 mm) for inputs exceeding 100 000 Btuh (30 kW); and*
- *(h) underneath a veranda, porch, or deck unless*
  - *(i) the veranda, porch, or deck is fully open on a minimum of two sides beneath the floor; and*
  - *(ii) the distance between the top of the **vent** termination and the underside of the veranda, porch, or deck is greater than 1 ft (300 mm).*

Clause 8.14.8(a) above is an objective requirement that has no reference to caps, directional diversion, property line or building separations.

The CSA B149.1 allows for unrestricted side terminations of special vent systems for appliances up to 35 000 Btuh with less than 4 ft.(1.2m) clearance, which should cover such appliances as fireplaces and garage heaters under 35 000 Btuh which usually have shorter run times and not a lot of plume production.

Appliances over 35 000 Btuh venting within side yards having a width of no less than 4 ft.(1.2m) can be installed with discharge directed away from property lines. Most appliances allow for directional fittings and others already have termination caps such as ones used on garage heaters and boiler venting.

Appliances such as power vented water heaters over 35 000 Btuh are being used more and more for some space heating which increases run times and hence exhaust plumes. They need adequate space for proper plume dispersal and 4 ft.(1.2m) side yard terminations have resulted in numerous issues.

The following is a summary of the CSA B149-1 requirements on spacing of sidewall vent terminations in relation to adjacent structures or the property line:

- A vent from a category III or category IV appliance or an appliance with a special venting system exceeding 35 000 Btuh shall not extend through an exterior wall and terminate adjacent to the exterior wall unless there is a minimum unobstructed distance of 4 ft.(1.2m) or greater from the wall penetration to the property line.
- A vent from a Category III or Category IV appliance or an appliance with a special venting system exceeding 35,000 Btuh that terminates into a side yard which measures not less than 4 ft.(1.2m) from the wall penetration to property line, shall have a means of redirecting the vent plume with a certified fitting such as a "T", a 90 degree elbow, or termination acceptable to the authority having jurisdiction, installed in accordance to the manufacturer's installation instructions.
- Distances greater than 8 ft.(2.4m) will have no restriction.
- In an alcove installation the depth of the vent termination FROM THE EXTERIOR FACE cannot exceed the separation between the two opposing walls.

Note: These requirements do not apply to locations where adjoining properties are public spaces such as road ways, alleyways, walkways or parks where structures would not normally be erected.

Alberta Building Code (ABC) 2014

Sentence 9.32.3.13.(3) *of the ABC 2014 states: The distance separating* ***air intakes*** *from building envelope penetrations that are potential sources of contaminates, such as gas vents or oil fill pipes, shall be not less than 900mm.*

Sentence 9.32.3.13.(4) *continues to state that :* ***Air intakes*** *shall be clearly labeled as such for identification from locations outside the dwelling unit.*

Sentence 9.33.5.2.(1) *of the ABC 2014 states: Except as provided in Articles 9.33.5.3. and 9.33.5.4., the installation of heating and air-conditioning equipment, including mechanical refrigeration equipment, and including provisions for mounting, clearances and air supply, shall conform to*
(d) the gas regulations made pursuant to the Safety Codes Act…

Clarification No.1:

It has been questioned in the past as to whether open-able windows and doors will fall under the category of "air intakes" described in the above ABC requirements and need to have a 900mm separation from sidewall gas vents.

Subsection 9.32.3 of the ABC 2014 deals only with "Heating-season Mechanical Ventilation". Therefore the requirements for "air intakes" in the above sentences only apply to intake terminals serving the mechanical ventilation systems (e.g. those connected to furnaces, HRV's, and make-up air units etc.). The 900mm requirement stipulated under sentence 9.32.3.13.(3) does not apply to windows or doors.

Clarification No.2:

It was pointed out that there is a discrepancy between requirements stipulated under clause 8.14.8(c) of the CSA B149.1 and sentence 9.32.3.13.(3) of the ABC 2014 with respect to separation of mechanical air intakes from gas vents.

There will be no problem if the air intake hood was already installed before the gas fitter tries to run the sidewall vent. The gas fitter would have allowed for a separation of 1.8m from the air intake hood in accordance to clause 8.14.8(c) of the CSA B149.1 since that is the standard referenced under the Gas Code Regulation.

The 900mm minimum separation stipulated under sentence 9.32.3.13.(3) of the ABC is intended as a general provision to deal with various potential sources of contaminates in the absence of specific requirements from other standards. Since the referenced standard (i.e. CSA B149.1) dealing with gas vents does include a specific requirement, the more stringent of the two shall apply. The sheet metal contractor will need to allow for a 1.8m separation from any sidewall gas vent during the installation of mechanical air intake hoods.