



**BSR/ASHRAE Addendum f
to ANSI/ASHRAE Standard 62.2-2025**

Public Review Draft

**Proposed Addendum f to
Standard 62.2-2025, Ventilation and
Acceptable Indoor Air Quality in
Residential Buildings**

**First Public Review (PPR)
(Draft shows Proposed Changes to Current Standard)**

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(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Apart from cooking and cooking appliances, gas-fired unvented combustion room heaters can also produce emissions of contaminants for which we do not require, as of now, any additional ventilation in ASHRAE 62.2. This proposal is intended to provide consistent treatment where exhaust may be needed for source control.

The flow rates are based on models used by the gas-fired unvented heater industry (DeWerth et al.) as well as by Francisco et al. Assumptions in the modeling included that the gas-fired room heater was running at steady-state (heating capacity of the heater matched the heating load of the home), that the aim was to avoid reaching 100 ppb for nitrogen dioxide, that there was 0.35 ACH of ventilation (consistent with 62.2-compliant homes), and that there was an additional effective 0.35 ACH of removal due to the reactivity of nitrogen dioxide (within the range of values used by DeWerth et al. and Francisco et al.). Heater capacities for different climate zones were taken from industry sizing guidelines: 1.5 BTU/h/ft³ for climate zone 1, 1.8 BTU/h/ft³ for CZ2 and CZ6, 2.2 BTU/h/ft³ for CZ3, 2.4 BTU/h/ft³ for CZ4, and 2.8 BTU/h/ft³ for CZ5. These climate zones were mapped for approximate matches to the climate zone map found in ASHRAE Standard 62.2, Section 9.

For Exception 2, 1600 ppm of carbon dioxide traces back to the Sherman/Fairey/Crawford ASHRAE Journal article (May 2022) and is consistent with the IAQP in ASHRAE Standard 62.2.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum f to 62.2-2025

Modify the standard as follows.

Proposal for gas-fired unvented heaters

Amend Section 5 as follows:

Table 5-1 Demand Controlled Local Exhaust Airflow Rates

Application	Airflow
<i>Kitchen</i>	• Vented range hood (including appliance-range hood combinations): 100 cfm (50 L/s) • Other <i>kitchen</i> exhaust fans, including downdraft: 300 cfm (150 L/s)
<i>Bathroom or toilet room</i>	50 cfm (25 L/s)
<u>Room with a gas-fired unvented room heater</u>	<u>See Table 5-1a</u>

Table 5-1a Required Local Exhaust Airflow Rate for Room with a gas-fired Unvented Room Heater

Climate Zone (based on Figure 9-1)	Minimum Exhaust Airflow from the room in which the appliance is located
<u>1A, 1B, 2A, 2B</u>	<u>150 cfm (75 L/s)</u>
<u>3A, 3B, 3C, 4C, 5C</u>	<u>200 cfm (100 L/s)</u>
<u>4A, 4B</u>	<u>270 cfm (135 L/s)</u>
<u>5A, 5B</u>	<u>300 cfm (150 L/s)</u>
<u>6A, 6B</u>	<u>380 cfm (190 L/s)</u>

5. LOCAL EXHAUST

5.1 Local Mechanical Exhaust. A local mechanical *exhaust system* shall be designed and installed in each *kitchen, bathroom, toilet room, and any other room that has a gas-fired unvented room heater* and shall be one of the following:

- A demand controlled local mechanical *exhaust system* meeting the requirements of Section 5.2 or
- A continuous local mechanical *exhaust system* meeting the requirements of Section 5.3.

Exception to 5.1(b): *Kitchens* that are not *enclosed kitchens* or *other rooms with a gas-fired unvented room heater* shall be provided with a demand controlled local mechanical *exhaust system* meeting the requirements of Section 5.2.

Exception 1 to 5.1: Alternative ventilation for *kitchens and bathrooms*: Other design methods that provide the required minimum exhaust airflow rates shall be permitted when approved by a licensed design professional.

Exception 2 to 5.1: Alternative for rooms with a gas-fired unvented room heater: Gas-fired unvented room heaters within the dwelling unit boundary shall be permitted when they meet section 6.4.3 and the dwelling unit has a ventilation system capable of maintaining the concentration of carbon dioxide at no more than 1600ppm according to Appendix D.

Exception 3 to 5.1: Alternative for bathrooms or bedrooms with a gas-fired unvented room heater: No additional exhaust ventilation is required for a heater installed in a bathroom when the exhaust fan is interconnected to the operation of the heater. For bedroom installations, the exhaust fan minimum airflow can be reduced by 50% of the exhaust airflow rate in Table 5-1a.

Add Subsection 6.4.3

6.4.3 Unvented Space Heating Appliances. Gas-Fired unvented space heating appliances shall be listed to the safety standard ANSI Z21.11.2, Gas-Fired Room Heaters, Volume II, Unvented Room Heaters (2002) or later, and shall comply with the appliance input limits and venting requirements of Section 12.3.2 of NFPA 54/ANSI Z223.1, National Fuel Gas Code, or Section 501.8 of the International Fuel Gas Code.

Amend Section 10 (REFERENCES) as follows:

10. REFERENCES

Section

CSA Group (CSA)
178 Rexdale Blvd
Toronto ON M9W 1R3
Canada
(416) 747-4000; www.csagroup.org

CAN/CSA C439-24	Laboratory Methods of Test for Rating the Performance of Heat/Energy-Recovery Ventilators	Table 7-1
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<u>CSA/ANSI Z21.11.2 - 2019</u>	<u>Gas-fired room heaters, volume II, unvented room heater</u>	<u>5.1, 6.4.3</u>
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International Code Council (ICC)
200 Massachusetts Ave NW, Ste. 250
Washington, D.C. 20001
(202) 370-1800; www.iccsafe.org

IBC (2024)	International Building Code	3.2, 6.1.4
<u>IFGC (2024)</u>	<u>International Fuel Gas Code</u>	<u>6.4.3</u>

National Fire Protection Association (NFPA) 1
Batterymarch Park
Quincy, Massachusetts 02169-7471
(800) 344-3555; www.nfpa.org

NFPA 31 (2024)	Standard for the Installation of Oil-Burning Equipment	6.4.1
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NFPA 54/ANSI Z223.1 (2024)	National Fuel Gas Code	6.4.1, <u>6.4.3</u> , 6.6
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