
Notice for installers of solid fuel-burning appliances of 2020 Vermont Residential Building Energy Standards (RBES) requirements regarding installation of fireplaces and wood or pellet burning stoves.

All solid fuel-burning (i.e., wood, pellets and coal) appliances must have tight-fitting (defined as gasketed doors with compression closure or compression latch system) metal, glass or ceramic doors. Note that many common glass bi-fold fireplace doors do not meet the requirements of RBES Code without modification. When you hear the term “airtight,” what is really being conveyed here is that the masonry fireplace door has pre-installed gaskets (or seals) around the inside of the door frame, as well as around the glass.

From the 2015 IECC Section R402.4.2: Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907

The only exception to this is a home certified to have passed the worst-case testing procedure outlined in **RBES Appendix RA – Recommended Procedure for Worst-Case Testing of Atmospheric Venting Systems**. This test must be done by an approved third party, with a written report of the results signed by that party.

Appendix RA – Recommended Procedure for Worst-Case Testing of Atmospheric Venting systems and/or the current Building Performance Institute (BPI) standard ANSI/BPI-1200 are recommended test procedures that may be used to meet this requirement.

The content provided in this bulletin is specific to the application of solid wood burning appliances and does not include the full content of **RBES Section 305** regarding combustion safety for all combustion appliance types

SECTION R305 | COMBUSTION SAFETY (MANDATORY)

R305.1 General. The provisions of this section shall govern the requirements for combustion and dilution air for fuel-burning appliances in every new home built to RBES, whenever a new heating system is installed, or whenever alteration, renovation or repair work creates unusually tight construction as defined in NFPA 54 and NFPA 31.

R305.2 Unusually tight construction. For the purpose of applying the provisions of Section 305 to fuel gas, kerosene and oil-burning equipment, buildings constructed in compliance with the RBES shall be considered of unusually tight construction as defined in NFPA 54 and NFPA 31.

R305.4 Solid fuel-burning appliances and fireplaces.

All solid fuel-burning appliances and fireplaces shall meet the provisions of this section.

- **R305.4.1 Gasketed doors.** All solid fuel-burning appliances and fireplaces shall have tight-fitting (defined as gasketed doors with compression closure or compression latch system) metal glass or ceramic doors. **Exception:** Any home certified to have passed the Appendix RA – Recommended Procedure for Worst-Case Testing of Atmospheric Venting Systems” is not required to have tight-fitting doors.

- **R305.4.2 Spillage testing.** All chimney-vented equipment shall establish complete draft without spillage under “worst- case” conditions within two minutes. If any chimney-vented equipment fails this requirement, mechanically induced pressure relief shall be provided such that the requirement is met.
- **R305.4.3 Exterior air supply requirements.** Solid fuel-burning appliances and fireplaces shall be equipped with an exterior air supply according to the provisions of Sections R305.4.3.1 through R305.4.3.7.

Factory-built fireplaces, masonry fireplaces and solid fuel-burning appliances that list exterior air supply ducts as optional or required for proper installation are permitted to be installed with those exterior air supply ducts according to the manufacturer’s installation instructions in place of sections R305.4.3.1 through R305.4.3.7. This is not an exemption from the exterior air supply requirements.

- **R305.4.3.1** Combustion air shall not be taken from within the garage, attic, or basement.
- **R305.4.3.2** The exterior air inlet shall not terminate to the exterior higher than the firebox and the combustion air duct shall not rise vertically within 18 inches of the firebox. Exception: Where woodstove or fireplace is installed below grade (in a basement), air intake is permitted to terminate above the firebox if the combustion air supply point is below the firebox and the combustion air intake point is greater than 15 inches (381 mm) below the top of the chimney.
- **R305.4.3.3** The exterior air intake must deliver combustion air to the firebox. Exception: For older woodstoves and cookstoves where direct connection of combustion air is not possible, combustion air may be delivered within 24 inches (610 mm) of the stove’s air intake opening.
- **R305.4.3.4** The air inlet shall be screened with ¼ inch (6 mm) mesh.
- **R305.4.3.5** The air inlet shall be closable and designed to prevent debris from dropping into the air intake.
- **R305.4.3.6** The exterior air inlet shall be installed so as to remain free of obstruction from snow.
- **R305.4.3.7 Passageway.** The combustion air passageway for unlisted exterior air supply ducts shall be a minimum of 6 square inches (3870 mm²) and not more than 55 square inches (0.035 m²). The passageway shall be non-combustible, masonry or 30 gauge (or thicker) metal, have 1 inch clearance to combustibles for the length of the combustion air intake. Combustion air systems for listed fireplaces shall be constructed according to the fireplace manufacturer’s instructions.