



**RESIDENTIAL VENTILATION USING
SECTION 9.32 OF THE
2015 NATIONAL BUILDING CODE
manual**



**RESIDENTIAL VENTILATION USING
SECTION 9.32 OF THE
2015 NATIONAL BUILDING CODE**

First Edition (2019 Edition)

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Heating, Refrigeration and Air Conditioning
Institute of Canada

NOTES

FOREWORD

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The careful use of this manual should result in the satisfactory design and installation of Residential Mechanical Ventilation Systems. However, the end result is in no way warranted by either the Heating, Refrigeration and Air Conditioning Institute of Canada or any companies or any persons involved in the preparation or presentation of this manual.

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Heating, Refrigeration and Air Conditioning
Institute of Canada

2350 Matheson Blvd. East, Suite 101
Mississauga, ON L4W 5G9

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PURPOSE

The manual “Residential Ventilation Using Section 9.32 of the 2015 National Building Code” is intended to instruct members of the heating, ventilating and air conditioning industry in the proper design and installation of residential mechanical ventilation systems according to the National Building Code 2015 Section 9.32.

The manual is meant for industry personnel who have a good basic understanding of HVAC equipment and ductwork installation. The manual does not cover depressurization testing, balancing, or ventilation equipment testing.

SCOPE

- a) The materials in this manual are designed for residential mechanical ventilation systems, including those with and without heat recovery.
- b) The duct sizing section of this manual is designed for systems having air velocities and air volumes typical of residential ventilation systems and should not be used to size ducts for residential heating or cooling systems.
- c) This manual is not intended to be used in designing, installing or commissioning commercial ventilation systems.
- d) The worksheets incorporated within the manual are to be used for the purpose of designing residential mechanical ventilation systems.
- e) The equipment specifications contained within this manual are generic in nature, and although they are representative of actual equipment, they may be considerably different when compared to a particular appliance in the field. **Therefore, the specifications supplied by the equipment manufacturer must be used for actual designs.**
- f) The codes and standards used to compile this manual are written in metric. HRAI has included imperial units for the convenience of the participants.
 - i. In the case of volume conversions for litres per second (L/s) to cubic feet per minute (CFM), HRAI has used a soft conversion of $1 \text{ L/s} = 2 \text{ CFM}$, which will provide reasonable accuracy in most situations. Participants should be aware that some jurisdictions may use a hard conversion, commonly $1 \text{ L/s} = 2.118 \text{ CFM}$ or $1 \text{ CFM} = 0.47 \text{ L/s}$.
 - ii. In the case of pressure conversions for Pascals (Pa) to inches of water column ("w.c.) HRAI has used a soft conversion of $250 \text{ Pa} = 1" \text{ w.c.}$ Participants should be aware that some jurisdictions may use a hard conversion, $249 \text{ Pa} = 1" \text{ w.c.}$ Also, for the purpose of this document, water column has the same meaning as water gauge (w.g.).