

Errata 2021 WSEC-Commercial

Chapter 4 - Commercial Energy Efficiency Applies to Second Printing

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Corrections:

Table C402.1.3 missing text under footnote i:

TABLE C402.1.3
OPAQUE THERMAL ENVELOPE INSULATION COMPONENT
MINIMUM REQUIREMENTS, R-VALUE METHOD

- i. Where the total area of through-wall mechanical equipment is greater than 1 percent of the opaque *above-grade wall area*, use of the *R*-value method is not permitted. See Section C402.1.4.3.
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Section C402.1.4.3 missing from text:

C402.1.4.3 Thermal resistance of mechanical equipment penetrations. When the total area of penetrations from through-wall mechanical equipment or equipment listed in Table C403.3.2(4) exceeds 1 percent of the opaque *above-grade wall area*, the mechanical equipment penetration area shall be calculated as a separate wall assembly with a default *U*-factor of 0.5. Mechanical system ducts and louvers, including those for supply, exhaust and relief, and for condenser air intake and outlet, are not considered to be mechanical equipment for the purposes of this section.

Exception: Where mechanical equipment has been tested in accordance with *approved* testing standards, the mechanical equipment penetration area is permitted to be calculated as a separate wall assembly using the *U*-factor determined by such test.

Bad section reference in Section C402.5.5:

C402.5.5 Rooms containing fuel-burning appliances. Where combustion air is supplied through openings in an exterior wall to a room or space containing a space conditioning fuel-burning appliance, one of the following shall apply:

1. The room or space containing the appliance shall be located outside of the building thermal envelope.
2. The room or space containing the appliance shall be enclosed and isolated from conditioned spaces inside the building thermal envelope. Such rooms shall comply with all of the following:
 - 2.1. The walls, floor and ceiling that separate the enclosed room or space from the conditioned spaces shall be insulated to be at least equivalent to the insulation requirement of below grade walls as specified in Table C402.1.3 or C402.1.4.
 - 2.2. The walls, floors and ceiling that separate the enclosed room or space from conditioned spaces shall be sealed in accordance with Section C402.5.1.1
 - 2.3. The doors into the enclosed room or space shall be fully gasketed.
 - 2.4. Water lines and ducts in the enclosed room or space shall be insulated in accordance with

Section C403.

- 2.5. Where the air duct supplying combustion air to the enclosed room or space passes through conditioned space, the duct shall be insulated to an R-value of not less than R-16.

Exception: Fireplaces and stoves complying with Sections 901 through 905 of the *International Mechanical Code*, and Section ~~2111.13~~ **2111.4** of the *International Building Code*.

Typo in Section C403.4.1.1:

C403.4.1.1 Heat pump supplementary heat control. Heat pumps equipped with internal electric resistance heaters shall have controls that prevent supplemental heater operation when the heating load can be met by the heat pump alone during both steady-state operation and setback recovery. Supplemental ~~heart heat~~ operation is permitted during outdoor coil defrost cycles. Heat pumps equipped with supplemental heaters shall comply with all conditions of Section C403.1.4.

Exceptions:

1. Packaged terminal heat pumps (PTHPs) of less than 2 tons (24,000 Btu/hr) cooling capacity and whose ratings meet the requirements shown in Table C403.3.2(4) that have reverse-cycle demand defrost and are configured to operate in heat pump mode whenever the outdoor air temperatures are above 25°F (-3.9°C) and the unit is not in defrost.
 2. Heat pumps whose minimum efficiency is regulated by NAECA and whose ratings meet the requirements shown in Table C403.3.2(2) and include all usage of internal electric resistance heating.
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Typo in Section C403.8.3:

C403.8.3 Fan efficiency. Each fan and fan array shall have a fan energy index (FEI) of not less than 1.00 at the design point of operation, as determined in accordance with AMCA 208 by an approved, independent testing laboratory and labeled by the manufacturer. Each fan and fan array used for a variable-air volume system shall have an FEI of not less than 0.95 at the design point of operation as determined in accordance with AMCA 208 by an approved, independent testing laboratory and labeled by the manufacturer. The FEI for fan arrays shall be calculated in accordance with AMCA 208 Annex C.

Exception: The following fans are not required to have a fan energy index:

1. Fans that are not *embedded* ~~fans~~ **fans** with motor nameplate horsepower of less than 1.0 hp (0.75 kW) or with a nameplate electrical input power of less than 0.89 kW.
2. *Embedded fans* that have a motor nameplate horsepower of 5 hp (3.7 kW) or less or with a fan system electrical input power of 4.1 kW or less.
3. Multiple fans operated in series or parallel as the functional equivalent of a single fan that have a combined motor nameplate horsepower of 5 hp (3.7 kW) or less or with a fan system electrical input power of 4.1 kW or less.
4. Fans that are part of equipment covered under Section C403.3.2.
5. Fans included in an equipment package certified by an *approved agency* for air or energy performance.
6. *Ceiling fans*.
7. Fans used for moving gases at temperatures above 425°F (250°C).
8. Fans used for operation in explosive atmospheres.
9. Reversible fans used for tunnel ventilation.

10. Fans that are intended to operate only during emergency conditions.
11. Fans outside the scope of AMCA 208.

Update to 2021 requirements not made to Table C403.8.4 (+ typo):

TABLE C403.8.4
LOW-CAPACITY VENTILATION FAN EFFICACY^a

Fan location	Air Flow Rate Minimum (cfm)	Minimum Efficacy (cfm/watt)	Air Flow Rate Minimum (cfm)
HRV or ERV	Any	2.8 1.2	< 90 Any
Range Hood	Any	3.5	Any
In-line fan	Any	3.8	Any
Bathroom, utility room	10	2.8	< 90
Bathroom, utility room	90	3.5	Any

For SI: 1 cfm/ft = 47.82 W.

- a. Airflow shall be tested in accordance with HVI 916 and listed. Efficacy shall be listed or shall be derived from listed power and airflow. Fan efficacy for ~~fully~~ fully ducted HRV, ERV, balanced and in-line fans shall be determined at a static pressure not less than 0.2 inch w.c. Fan efficacy for ducted range hoods, bathroom, and utility room fans shall be determined at a static pressure not less than 0.1 inch w.c.