

RE2D-15-23, Option 5:

- A. No modifications to latest definitions
- B. Clarify exceptions for ventilation system ducts and equipment, noting that, by nature, such systems are meant to bridge the gap between conditioned space and the outdoors.

DUCT SYSTEM. A system that consists of *space conditioning equipment, ductwork*, and includes any apparatus installed in connection therewith.

DUCTWORK. The assemblies of connected *ducts, plenums, boots, fittings, dampers, supply registers, return grilles, and filter grilles* through which air is supplied to or returned from the space to be heated, cooled, or ventilated. Supply *ductwork* delivers air to the spaces from the *space conditioning equipment*. Return *ductwork* conveys air from the spaces back to the *space conditioning equipment*. *Ventilation ductwork* conveys air to or from any space.

SPACE CONDITIONING. The treatment of air so as to control the temperature, humidity, filtration or distribution of the air to meet the requirements of a conditioned space.

SPACE CONDITIONING EQUIPMENT. The *heat exchangers, air-handling units, filter boxes, and any apparatus* installed in connection therewith used to provide *space conditioning*.

CONDITIONED SPACE. An area, room or space that is enclosed within the *building thermal envelope* and that is directly or indirectly heated or cooled. Spaces are indirectly heated or cooled where they communicate through openings with conditioned spaces, where they are separated from conditioned spaces by uninsulated walls, floors or ceilings, or where they contain uninsulated *ducts, piping* or other sources of heating or cooling.

Modify PCD2 as follows (same changes for IRC Chapter 11)

R403.3 Duct systems. *Duct systems* shall be installed in accordance with Sections R403.3.1 through R403.3.9.

Exceptions:

1. Ventilation ductwork and ventilation equipment that is-are not integrated with duct systems serving heating or cooling systems shall be installed in accordance with Section R403.3.2, R403.3.3, and R403.3.6 except for R403.3.6.1. Ventilation ductwork shall be installed in accordance with Section M1601.1 of the IRC or Section 601.1 of the IMC, as applicable.

2. Ventilation ductwork and dedicated ventilation equipment that are integrated with duct systems serving heating or cooling equipment shall be installed in accordance with Sections R403.3.2, R403.3.3, R403.3.6 except for R403.3.6.1, and R403.3.7 through R403.3.9. Ventilation ductwork shall be installed in accordance with Section M1601.1 of the IRC or Section 601.1 of the IMC, as applicable.

TABLE R405.4.2(1) SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

I. Only sections of *ductwork* that are installed in accordance with Items 1 or 2 of Section R403.3.4, are assumed to be located completely inside *conditioned space*. All other sections of *ductwork* are not assumed to be located completely inside *conditioned space*. Ventilation ductwork shall not be considered when determining the percent of ductwork in conditioned space.

R408.2.4 More efficient thermal distribution system option. The thermal distribution system shall comply with one of the following:

1. The ductless thermal distribution system or hydronic thermal distribution system is located completely on the conditioned side of the *building thermal envelope*.

2. The *space conditioning equipment* is located inside *conditioned space*. In addition, 100 percent of the *ductwork* is located completely inside *conditioned space* as defined by Section R403.3.4(1) and R403.3.4(2).

Exception: Ventilation ductwork and dedicated ventilation equipment shall not be considered when determining compliance.

3. The *space conditioning equipment* is located inside *conditioned space*, and no less than 80 percent of *ductwork* is located completely inside *conditioned space* as defined by Section R403.3.4(1) and R403.3.4(2). In addition, no more than 20 percent of *ductwork* is contained within building assemblies separating unconditioned from *conditioned space* as defined by Section R403.3.4(3).

Exception: Ventilation ductwork and dedicated ventilation equipment shall not be considered when determining compliance.

4. Where *ductwork* is located outside *conditioned space*, the total leakage of the *duct system* measured in accordance with R403.3.7 is one of the following:

4.1 Where the *space conditioning equipment* is installed at the time of testing, total leakage is not greater than 2.0 cubic feet per minute (0.94 L/s) per 100 square feet (9.29 m²) of *conditioned floor area*.

4.2 Where the *space conditioning equipment* is not installed at the time of testing, total leakage is not greater than 1.75 cubic feet per minute (0.83 L/s) per 100 square feet (9.29 m²) of *conditioned floor area*.