



Setting the Standards for Home Energy Efficiency

Interpretation: Duct Testing for Dedicated Pre-conditioning Ventilation Systems

Designation IR 301-2019-022

Approved: March 25, 2021 by RESNET SDC 300

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Reference:

Standard _____ ANSI/RESNET/ICC 301-2019 _____
Page Number(s): _____ page 24 _____
Sections(s): _____ 4.2 _____
Table(s): _____ 4.2.2.1 _____
Relating to: _____ Thermal distribution systems / ventilation systems _____

Request from:

Name: _____ Mark Newey _____
Affiliation: _____ Center for EcoTechnology _____
Address: _____ 320 Riverside Dr, 1A _____
City: _ Northampton _____ State: _ MA _____ Zip: 01062 _____
Email: _____ Mark.newey@cetonline.org _____

Background Statement: *Provided by person requesting the interpretation.*

When rating a dwelling unit in a multifamily building that has a dedicated ERV (not shared with any other dwelling units) with a pre-conditioning element (such as an electric resistance heater), it is unclear whether the air duct distribution system must be leak tested and entered into modeling software.

Proposed Interpretation: *Provided by person requesting the interpretation.*

To be consistent with how shared ventilation systems are handled in the recent interpretation of request 301-2019-020, I believe that the duct distribution system does not need to be entered into the modeling software and that no leak testing needs to be performed.

Note:

If my interpretation is not correct, I will require detailed guidance on the following:

1. How to enter the duct locations? Do we only enter the supply ducts since there are no “return” ducts in an ERV system? Would we only enter the supply ducts from the pre-conditioning heater to the dwelling unit since this is the only place where heat loss from the pre-conditioning heater could occur?
2. How to test such a system? There is no return in this type of system, so would we test just the supply side from the heating/cooling unit to the dwelling unit?

SDC Response: Yes.

SDC Comments: ANSI/RESNET/ICC 301-2019 does not provide a definition of ‘thermal distribution system’ or ‘forced air distribution system’. This lack of definition makes it unclear if the duct leakage tests noted in Table 4.2.2(1) apply to “ventilation” air distribution systems that also provide some space heating. However, the referenced standard, ANSI/RESNET/ICC 380-2019, is clear in its title that the airtightness was with respect to “Heating and Cooling Air Distribution Systems”. Therefore the Committee agrees with the Proponent’s interpretation that Table 4.2.2(1) did not intend to require duct leakage tests for ventilation systems that are separate from the primary space conditioning system, even if they provide some heating (or cooling). Where they are part of the same distribution system, they are subject to testing, in accordance with ANSI/RESNET/ICC 380-2019. The inconsistency noted with respect to modeling this space conditioning in shared ventilation systems in multifamily and not in other configurations will require a proposed amendment to correct and cannot be accomplished via an interpretation. The Committee will consider this change for the 2022 update.