

MINHERS Addendum 74

Space Constrained AC or Heat Pump

Date Approved:	October 10, 2023
Voluntary Compliance Date:	October 10, 2023
Mandatory Compliance Date:	January 1, 2024
Transition Period:	VCD to MCD
Proponent:	SDC 300
Organization:	RESNET

Purpose:

Removes the exception to standard ANSI/RESNET/ICC 301-2019 regarding test determined leakage and airflow that was established for the COVID Pandemic. Adds a definition for Space Constrained AC or Heat Pump to the Exception providing conversion factors for SEER2 and HSPF2 equipment efficiency ratings.

Amendment:

Remove the current Exception 6 from section 303.1; renumber Exception 7 to Exception 6 and add a definition for Space Constrained AC or Heat Pump in a Normative Note.

303 Technical Requirements

303.1 Applicable Standards

All RESNET Home Energy Ratings conducted in accordance with this Standard shall comply with the provisions of ANSI/RESNET/ICC 301.

Note: The RESNET Home Energy Ratings adopt Standards ANSI/RESNET/ICC 301 and ANSI/RESNET/ICC 380 including all of their addenda and normative appendices. See 304 Normative References. Standards 301 and 380 Addenda are effective on the date they are approved by ANSI. The Standards Management Board may establish a Transition Period during which addenda may be used. If a Transition Period is authorized these addenda must be used after a Mandatory Compliance Date designated by the Standards Management Board. If no Transition Period is authorized they must be used beginning on the Mandatory Compliance Date established by the Standards Management Board.

:

:
: (Exceptions 1, 2 and 3 are repealed when Addendum 42 becomes mandatory
January 1, 2021 and the Exceptions below will be renumbered)
:
:

Exception 4: RESNET Home Energy Ratings conducted in Puerto Rico and the US Virgin Islands shall comply with the provisions of ANSI/RESNET/ICC 301, except that Ratings of homes with a permit date prior to January 1, 2022 are permitted to use a default infiltration rate of 10 ACH50 in lieu of conducting an airtightness test in accordance with Standard ANSI/RESNET/ICC 380. In addition, for a home in the Tropical Climate Zone for which its Living Space is not serviced by a space heating mechanical system and not more than one-half of its Living Space is serviced by a space cooling mechanical system, the Conditioned Space Volume shall be defined as the volume of its Living Space and the Conditioned Floor Area shall be defined as the floor area of its Living Space.

Exception 5: RESNET Home Energy Ratings shall comply with the requirements of ANSI/RESNET/ICC 301 and its Addenda except that Ratings on homes with a building permit date, or alternate pursuant to Addendum 43, prior to January 1, 2021 are permitted to use the following exception:

When the following condition is met and documented, duct leakage testing is not required.

At a pre-drywall stage of construction, 100% of the distribution system and air handler shall be visible and visually verified to be contained inside the Conditioned Space Volume. At a final stage of construction, ductwork that is visible and the air handler shall again be verified to be contained in the Conditioned Space Volume.

To calculate the energy impacts on the Rated Home, a DSE of 0.88 shall be applied to both the heating and cooling system efficiencies.

~~**Exception 6:** RESNET Home Energy Ratings shall comply with the provisions of ANSI/RESNET/ICC 301, except during the COVID pandemic. This exception shall remain in effect until thirty (30) days after the Presidential Proclamation on Declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID-19) Outbreak is lifted. Dwelling units with a "Date Rated" as reported to the Registry during that time are permitted to use default values in lieu of conducting air tightness testing of dwelling unit enclosures and duct systems as well as measuring airflow of mechanical ventilation systems in accordance with Standard ANSI/RESNET/ICC 380. Ratings utilizing default test values must be compliant with RESNET's Temporary Protocols for Alternative Testing During the COVID-19 Pandemic:~~

- ~~• Default values by Climate Zone below in table 3.1, OR~~
- ~~• Default values determined by the Rating Provider for a builder by metro-code area based on averages calculated from previous 120 days performance (i.e., measured data from the 120 days immediately preceding the effective date of this exception or preceding March 31, 2020), OR~~

- ~~Other default values adopted by program sponsors such as a building department, a utility program, or a program such as ENERGY STAR – as approved by RESNET.~~

Default Values Table 3.1

CZ	CFM25-per-SF	ACH50
1A	0.08	7.0
2A	0.08	7.0
2B	0.08	7.0
3A	0.08	7.0
3B	0.08	7.0
3C	0.08	7.0
4A	0.08	7.0
4B	0.08	7.0
4C	0.08	7.0
5A	0.08	7.0
5B	0.08	7.0
6A	0.08	7.0
6B	0.08	7.0
7B	0.08	7.0

- ~~Ventilation Airflow Rate Defaults~~
 - ~~Installer-measured and documented ventilation airflow rate OR~~
 - ~~HVI Rated equipment airflow rates~~

Exception 6: RESNET Home Energy Ratings shall comply with the requirements of ANSI/RESNET/ICC 301 and its Addenda except Home Energy Ratings shall be calculated using the modifications of Standard ANSI/RESNET/ICC 301-2019 as follows:

Heating Seasonal Performance Factor 2 (HSPF2) – A standardized measure of Heat Pump efficiency, based on the total heating output of a Heat Pump in Btu and divided by the total electric energy input in watt-hours and under test conditions specified by the Air Conditioning and Refrigeration Institute Standard 210/240 2023.

Seasonal Energy Efficiency Ratio 2 (SEER2) – A standardized measure of Air Conditioner efficiency based on the total cooling output of an Air Conditioner in Btu/h, divided by the total electric energy input, in Watt-hours, under test conditions specified by the Air Conditioning and Refrigeration Institute Standard 210/240 2023.

4.4.4. Air Source Heat Pumps and Air Conditioners.

4.4.4.1. For Heat Pumps and Air Conditioners where a detailed, hourly HVAC simulation is used to separately model the compressor and evaporator energy (including part-load performance), the back-up heating energy, the distribution fan or blower energy and crank case heating energy, the Manufacturer’s Equipment

Performance Rating (HSPF and SEER¹) shall be modified to represent the performance of the compressor and evaporator components alone.² The energy uses of all components, including compressor and distribution fan/blower and crank case heater, shall then be added together to obtain the total energy uses for heating and cooling.

For Heat Pumps and Air Conditioners with the more recent Manufacturer's Equipment Performance Ratings (HSPF2 or SEER2) available, and HSPF or SEER are not available, these ratings shall be converted to HSPF and SEER values by dividing HSPF2 or SEER2 by the conversion factors in Table 4.4.4.1(1). If the type of equipment is not determined, the conversion shall default to the "Ducted Split System" factors. All calculations, including Equation 4.1-1a, shall use HSPF or SEER values as made available by the Manufacturer or converted as specified in this section.

Table 4.4.4.1(1) SEER2 and HSPF2 Conversion Factors³

Equipment Type	SEER2/SEER	EER2/EER⁴	HSPF2/HSPF
Ductless Systems	1.00	1.00	0.90
Ducted Split System	0.95	0.95	0.85
Ducted Packaged System	0.95	0.95	0.84
Small Duct High Velocity System	1.00	Not Applicable	0.85
Ducted Space-Constrained Air Conditioner ⁵	0.97	Not Applicable	Not Applicable
Ducted Space-Constrained Heat Pump ⁵	0.99	Not Applicable	0.85

¹ (Normative Note) For Commercial Variable Refrigerant Flow (VRF) Multi-Split Air Conditioning and Heat Pump Equipment, use IEER in place of SEER.

² (Informative Note) Such approaches are described in Cutler et al. 2011 and Fairey et al. 2004.

³ (Informative Note) Conversion factors developed by AHRI, and adopted by RESNET.

⁴ EER and EER2 are not required in this Standard for equipment relevant to this table, but the values are shared here for informative purposes.

⁵ (Normative Note) Space Constrained AC or Heat Pump – A space constrained unit is a product that has two overall exterior dimensions or an overall displacement that is substantially smaller than those of other units that are of similar heating and/or cooling capacity, and has rated cooling capacities no greater than 30,000 BTU/hr., and that if increased, would result in considerable increase in cost of installation or utility, and was available for purchase in the United States as of December 1, 2000. (Aligns with Title 20 and AHRI Standard 210/240 definitions.)