MINHERS Interim Addendum 71i

SEER2 AND HSPF2 Conversions

Date Approved:	December 4, 2022
Voluntary Compliance Date:	NA
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Transition Period:	NA
Proponent:	RESNET
Organization:	RESNET

Purpose: Addendum 71i establishes conversion factors for the new SEER2 and HSPF2 energy efficiency ratings for air conditioners and heat pumps. The conversion factors are necessary to convert those equipment efficiency ratings to the current SEERs and HSPFs used by accredited software to calculate the RESNET HERS Index ratings.

The interim version of Addendum 71, (71i), was adopted by RESNET to allow software providers to revise their software immediately. The final version of Addendum 71 will be finalized following RESNET's consensus standards development procedures.

Amendment:

Modify MINHERS Chapter 3 section 303.1 as follows:

Add the following Exception:

Exception 7: RESNET Home Energy Ratings shall be calculated using the modifications of Standard ANSI/RESNET/ICC 301-2019 as follows:

Add the following definitions to standard ANSI/RESNET/ICC 301-2019:

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.

Modify standard ANSI/RESNET/ICC 201-2019 section 4.4.4 as follows:

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 SEER[1]) 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 or 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 Factors[3]

Equipment Type	SEER2/SEER	EER2/EER[4]	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	0.97	Not Applicable	Not Applicable
Ducted Space-Constrained Heat Pump	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.