



Setting the Standards for Home Energy Efficiency

**Interpretation:** Default Efficiency for Electric Furnaces and Electric Radiant in Minimum Rated features

**Designation** IR 301-2019-050, 301-2022-005 and 301-2025-025

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**Reference:** This request for interpretation refers to the requirements presented in Standard:

ANSI/RESNET/ICC 301-2019

ANSI/RESNET/ICC 301-2022

ANSI/RESNET/ICC 301-2025

Page Number(s): page 95

Section(s): 4.5 Minimum Rated features

Table(s): Table 4.5.2(3) in 301-2019 & 301-2022

Table 405.1.2.4(3) in 301-2025

Relating to: Electric furnace units and Rating

**Background:** \_\_\_\_\_

Default values in this table for electric resistance furnaces and electric resistance radiant systems are given with units of HSPF and a “Rating” or value of 3.413 for each type. When entering a system in HERS Rating software such as Ekotrope with units of HSPF, the seasonal performance is reduced based on the outdoor temperature and past studies of air source heat pump performance. It makes no sense to derate electric resistance heaters for outdoor temperatures in the same way as air source heat pumps, because all of the components are typically in conditioned space or a buffer space like a attic or basement. We should instead use COP of 1.0 or an adjusted efficiency of 100%. Using these units will not make the software derate the system performance like an ASHP for outdoor temperatures. Note that the software will still derate performance for wasted distribution of heat when the equipment is located outside of conditioned space.

**Interpretation:** \_\_\_\_\_

The correct entry for default electric resistance furnace or default electric resistance radiant systems should be a COP of 1.0 or an adjusted efficiency of 100%.

**Question:** Is this Interpretation correct?

**SDC Answer:** Yes

**SDC Comments:** The SDC300 agrees that in Table 4.5.2(4) for “DEFAULT VALUES FOR MECHANICAL SYSTEM EFFICIENCY (NOT AGE-BASED)”, the Units for “Electric Furnace” and “Electric Radiant” should be listed as “COP” rather than “HSPF” and the Rating should be listed as “1.0”. This will be revised in a future amendment to the Standard. However, Section 4.5.2.3 does not require the use of these default values so Ratings may use a COP of 1.0 or an efficiency of 100%, as determined in accordance with Section 4.5.2.3.