

STATE BUILDING CODE OPINION 24-Sept15

CODE: 2021 Washington State Energy Code-Commercial
SECTION: Table C403.3.2(5), Minimum Efficiency for Warm-Air Furnaces and Unit Heaters

QUESTION: To demonstrate mechanical equipment efficiency compliance for warm air furnaces and unit heaters, is it acceptable to reference the minimum efficiency requirements in ANSI/ASHRAE/IES Standard 90.1-2022 Table 6.8.1-5 and Appendix F Table F-4, as an alternative to the minimum efficiency requirements in 2021 WSEC Table C403.3.2(5)?

ANSWER: **Yes. The minimum efficiency requirements in ASHRAE 90.1-2022 for warm air furnaces and unit heaters reflect the most current ANSI testing standards and are equivalent in terms of average energy efficiency to the referenced table currently in the 2021 WSEC and can be used to demonstrate compliance.**

SUPERSEDES: None

REQUESTED BY: King County

BACKGROUND: An addendum to the minimum efficiency requirements for warm air furnaces in ANSI/ASHRAE/IES Standard 90.1-2019 was approved by ASHRAE and the American National Standards Institute on July 29, 2022. This addendum was implemented by ANSI/ASHRAE/IES as a technical update for clarification of requirements and has no impact on energy savings and cost effectiveness. Warm air furnace minimum efficiency requirements in ANSI/ASHRAE/IES Standard 90.1-2022 (effective December 2022) and the 2024 IECC model code reflect this same information.

Foreword to Addendum bx to ASHRAE 90.1-2019:

“In Addendum bo to Standard 90.1-2016, published as part of ASHRAE Standard 90.1-2019, changes were implemented to update the requirements for warm-air furnace efficiency requirements to align with U.S. Department of Energy (DOE) changes and to separate the requirements for <225,000 Btu/h (66 kW) furnaces that are controlled directly by DOE. Like other changes for DOE-controlled products, the requirements for the DOE-regulated <225,000 Btu/h (66 kW) furnace products were moved to Appendix F in a new Table F-4. Addendum bx to Standard 90.1-2019 corrects or clarifies several issues in the 2019 table.”

See also [March 14, 2024, letter from Mitsubishi.](#)