

## Consumer Water Heaters Frequently Asked Questions: Rated Storage Volume

1. Q: How should manufacturers represent rated storage volume?

A: The rated storage volume should be determined according to 10 CFR 429.17(a)(1)(ii)(C), which requires that any represented value of the rated storage volume must be equal to the mean of the measured storage volumes of all the units within the sample.

2. Q: Does the rated storage volume need to be the same value in all representations, including the certification report to the U.S. Department of Energy (DOE), nameplates, cartons, and literature?

A: Yes. For all representations of rated storage volume, manufacturers must follow the procedure in 10 CFR 429.17(a)(1)(ii)(C) to determine the appropriate value.

3. Q: Can manufacturers represent any other storage volume values to consumers for the same water heater model?

A: Yes, manufacturers may also make representations of a nominal volume, as long as the following guidance is followed:

Any representation of a nominal volume must be within the tolerances provided in the applicable safety standard, when compared to the rated storage volume (as determined according to 10 CFR 429.17(a)(1)(ii)(C)).

For gas-fired water heaters, section 2.26 of ANSI Z21.10.1 allows that the storage vessel capacity (i.e., the rated storage volume as determined in accordance with 10 CFR 429.17(a)(1)(ii)(C)) shall be within  $\pm 5.0$  percent of a nominal volume. Although ANSI Z21.10.1 applies to gas-fired water heaters, manufacturers may apply this same tolerance for oil-fired water heaters as well.

For electric water heaters, section 33.1 of UL 174 allows that the actual water capacity of a water heater (i.e., the rated storage volume as determined in accordance with 10 CFR 429.17(a)(1)(ii)(C)) shall be no less than 90 percent of a nominal volume (i.e., marked rated capacity as referred to in UL 174).

4. Q: Can a manufacturer choose only to represent nominal volume to the consumer and not the rated storage volume?

A: No. Generally speaking, the Federal Trade Commission (FTC) is responsible for consumer disclosures for water heaters. The required disclosures for the FTC EnergyGuide label can be found at 16 CFR 305.11. The FTC currently does not require disclosure of storage volume; however, DOE notes that FTC recently finalized updates to its water heater EnergyGuide label, and the updated label includes a disclosure for "Tank Size (Storage Capacity)". See 81 FR 63633. The rule amends 16 CFR

305.11(f)(4) to specify that “Capacity for storage water heaters shall be presented in both *rated* storage volume (“tank size (storage capacity)”) and first hour rating as indicated on the sample label in appendix L to this part.” The rule also amends 16 CFR 305.7(d) to state: “the capacity shall be the rated storage volume and first hour rating (for storage-type models), and gallons per minute (for instantaneous-type models), as determined according to appendix E to 10 CFR part 430, subpart B.” DOE requires certification of the rated storage volume in accordance with 429.17(b)(2), which is derived from the measured storage volume obtained pursuant to testing according to appendix E to 10 CFR part 430, subpart B. Thus, the EnergyGuide label must display the “Tank Size (Storage Capacity)” developed pursuant to the DOE regulations for rated storage volume. If a manufacturer wishes to represent a nominal volume on consumer disclosures other than the label (e.g., the nameplate, marketing, or carton), they should consult with Hampton Newsome of FTC, who can be contacted at [hnewsome@ftc.gov](mailto:hnewsome@ftc.gov).

5. Q: For verification and enforcement, will DOE use the rated storage volume or a nominal volume to determine compliance with standards?

A: The procedure that DOE uses to determine the applicable standard is specified at 10 CFR 429.134(d)(2). The storage volume of the basic model will be measured pursuant to the test requirements of appendix E to subpart B of 10 CFR part 430 for each unit tested. The mean of the measured values will be compared to the rated storage volume as certified by the manufacturer. The rated storage volume will be considered valid only if the measurement is within 3 percent of the certified rating. If the rated storage volume is found to be within 3 percent of the mean of the measured value of storage volume, then the certified rated value will be used as the basis for calculation of the Federal energy conservation standard expressed as the uniform energy factor for the basic model. If the rated storage volume is found to vary more than 3 percent from the mean of the measured values, then the certified rated storage volume is determined to be invalid and the mean of the measured values will be used as the basis for calculation of the Federal energy conservation standard for the basic model.