

Standard 228-2023



ANSI/ASHRAE Standard 228-2023, *Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance*

Purpose

This standard sets requirements for evaluating whether a building or group of buildings meets a definition of “zero net energy” or a definition of “zero net carbon” during building operation. It provides a consistent method of expressing qualifications for zero net energy and zero net carbon buildings associated with the design of new buildings and the operation of existing buildings.

Significance

This is the first zero net energy and zero net carbon standard published by ASHRAE. Drawing from ANSI/ASHRAE Standard 105, *Standard Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions* and other relevant resources, the standard seeks to address energy and carbon flows across a site boundary and off-site credited flows. The standard defines the calculation of energy in terms of “source” - a multiplier on the energy crossing the site boundary to include energy used or lost in extraction, generation and transit to the site. It also includes allowances for sites that lack the opportunity to produce adequate renewable energy, while placing additional requirements on the use of external carbon and renewable energy in the calculation.

Scope

Standard 228 applies to existing buildings, new buildings, groups of buildings, or portions of buildings. It includes the determination, methodology, and expression of both a building's zero net energy and zero net carbon status. The standard also covers energy and carbon emissions associated with flows across the site boundaries and off-site credited flows.

Highlights

- ✓ Provides a consistent method of expressing qualifications for zero energy buildings associated with the design of new buildings and the operation of existing buildings.
- ✓ Includes an informative appendix with greenhouse gas emission factors for the United States using a 20-year global warming potential timeline.
- ✓ Includes compliance forms to collect necessary information to ensure a building meets Standard 228.
- ✓ Allows for both annual average factors and individual hour factors where that data is available.
- ✓ Offers a standardized approach that could be useful for programs incentivizing zero or low- carbon or energy buildings.
- ✓ Provides a consistent and potentially universal approach that could be referenced in legislation, regulations or policies.