



Shaping Tomorrow's
Built Environment Today

Standard 90.1

ANSI/ASHRAE/IES 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings

Purpose

Provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings.

Significance

The 2013 standard is referenced in the U.S. Energy Conservation and Production Act, which requires states to adopt commercial building codes that meet or exceed the standard's requirements. The standard is the basis for commercial and high rise residential energy codes. The standard is an alternative compliance path in the International Code Council's International Energy Conservation Code, mandated by the National Fire Protection Association 900 and lays the framework for the International Association of Plumbing and Mechanical Officials' Green Plumbing and Mechanical Code Supplement.

Background

Written during the country's worst energy crisis, ASHRAE Standard 90 first was published in 1975 as an effort to cut energy use in buildings.

Scope

The standard sets design requirements for the efficient use of energy in new buildings, including building envelope, distribution of energy, systems and equipment for auxiliaries, heating, ventilation, air conditioning, water heating, electric power and lighting. It applies to new buildings and their systems, new portions of buildings and their systems, and new systems and equipment in existing buildings, as well as systems and equipment associated with heating, ventilating and air conditioning, service water heating, electronic power distribution and metering provisions, electric motors and belt drives, and lighting.

Facts:

- More than 35 percent energy savings can be achieved using the 2013 version of Standard 90.1 vs. the 2004 standard. Without plug loads, site energy savings are 37.7 percent and energy cost savings 37.8 percent. Including plug loads, the site energy savings are estimated at 29.5 percent and energy cost savings 29 percent.
- Evaluated on both energy savings and cost effectiveness for every version to establish the standard of care and encourage adoption at the state level.
- Contains a Normative Appendix G to rate the energy efficiency of building designs that exceed its minimum requirements. The guidance provided in this appendix is beneficial to HVAC designers who are trying to achieve the required points for either a Silver or Gold Leadership in Energy and Environmental Design (LEED) certification of a facility.
- A national voluntary consensus standard developed under the auspices of ASHRAE. Consensus is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this standard as an American National Standard. It is revised through publication of addenda using a continuous maintenance process that includes public review of each proposed addendum.