



## ASHRAE 90.1 - 2019

ASHRAE Standard 90.1 is a minimum requirements guideline for the energy-efficient design of most buildings (not including low-rise multi-residential). It is one of the most essential reference guides for engineers and professionals involved in efficient building design. The standard proposes the minimum energy efficient design standards for existing, new construction and expansion projects. The standard has been used as a benchmark in the commercial real-estate industry and has been used by governments all over the world in their effort to deliver conservation programs.

The standard looks at the SEER/EER (seasonal energy efficient ratio and energy efficient ratio) and tonnage of HVAC units. Both terms described above relate the electric energy consumption to the amount of heating or cooling provided in BTU/h (British Thermal Units). When looking to upgrade or check how much energy is being consumed by equipment one should look at the EER or the kW/ton.

### GREEN AT A GLANCE

An oversized HVAC system can increase installation, energy and operating costs.

Using a Variable Frequency Drive on fans in your cooling system can save energy and utility costs.

$$kW = \frac{\text{Cooling Tonnage} \times 12}{EER}$$

Equation 1: Cooling Power Requirements of for HVAC units (RTU)

To see more about ASHRAE Standard 90.1, see the latest 2019 version at the website below:  
<https://www.ashrae.org/technical-resources/bookstore/standard-90-1>

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