

A new EnergyWise

NRCA has updated its online energy-efficiency calculator

by Mark S. Graham

NRCA has updated its EnergyWise Roof Calculator Online, which determines roof assemblies' minimum thermal insulation requirements and heating and cooling costs applicable to specific low-slope roof assembly designs. The update incorporates the latest revisions to the model energy codes and energy-efficiency standards.

If you are involved in designing and specifying low-slope roof assemblies, you should be aware of EnergyWise's latest revisions.

EnergyWise

EnergyWise was developed in 1998 as a CD-based version of *The NRCA Energy Manual*, originally published in 1977. Using the first version of EnergyWise, users could graphically construct roof assemblies and evaluate their energy efficiencies using the 1989 edition of ASHRAE 90.1, "Energy Efficient Design for New Buildings Except Low-Rise Residential Buildings," as a baseline.

In 2002, EnergyWise was updated to use ASHRAE 90.1-99 as the baseline for energy efficiency.

In 2004 and 2005, some minor changes to the calculation procedures were implemented into the CD-based version of EnergyWise.

In 2007, an online version of EnergyWise was made available, replacing the previous CD-based versions. The first online version of EnergyWise used ASHRAE 90.1-99 to determine baseline energy efficiency.

In 2009, NRCA updated the online version of EnergyWise to allow users to select either the 1999, 2004 or 2007 edition of ASHRAE 90.1 as the baseline for energy efficiency.

Latest version

In June, NRCA updated the online version of EnergyWise. This version allows users to select ASHRAE 90.1's 1999, 2004, 2007 or 2010 edition; ASHRAE 189.1, "Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings"; or the 2006 or 2009 edition of the International Energy Conservation Code as a baseline for energy efficiency. This broader selection of baseline values is necessary because of local jurisdictions' varying adoptions of energy-efficiency requirements.

Using EnergyWise

EnergyWise lets users input specific roof assembly design information—including a building's climatic region, heating and cooling appliance type, energy costs and roof area dimensions—and graphically construct roof assembly configurations to determine overall R-values and estimated heating and cooling costs. These values then can be compared with baseline energy-efficiency values that likely are dictated by building or energy codes or design standards. In some instances, these baseline energy-efficiency values may be somewhat higher than what some designers are accustomed to providing.

For EnergyWise users considering reroofing options, parameters

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for a building's existing roof assembly also can be input to compare possible heating and cooling cost savings that may be possible as a result of increased R-value.

EnergyWise also can be used to verify proper vapor retarder placement as a roof assembly component to prevent condensation.

Results generated using EnergyWise can be viewed from within the online application, and users can generate a detailed report of the specific building and roof areas analyzed. Results also are saved in the EnergyWise user's personal account for future reference.

EnergyWise results only are estimates based on recognized engineering principles using the parameters input by the user. Actual energy costs and savings are based on multiple factors, including specific energy costs during analysis period, actual building operation, and interior and exterior temperature conditions during the analysis period.

Also, EnergyWise only evaluates a building's roof assembly and does not consider other building envelope components, such as walls, windows and doors, which can be large overall contributors to heating and cooling losses, and overall building energy costs. For these reasons, NRCA recommends EnergyWise's results only be used for comparison purposes. Specific representation or guarantees of actual energy cost savings should not be made.

EnergyWise is available free of charge at energywise.nrca.net.   

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ON the WEB

For links to individual states' adoptions of minimum baseline energy-efficiency requirements and additional information regarding ASHRAE 90.1, ASHRAE 189.1 and the International Energy Conservation Code, access www.professionalroofing.net.