



EnergyWise update

New standards and codes are reflected in NRCA's online calculator

by Kurt Fester

NRCA has updated its EnergyWise Roof Calculator, a free online calculator that determines roof assemblies' minimum thermal insulation requirements and energy usage costs for heating and cooling for specific low-slope roof assembly designs. The update incorporates the latest revisions to model energy codes and energy-efficiency standards.

To date, nearly 6,300 registered users have input more than 13,000 projects. With this new update, these numbers should increase significantly.

How it works

EnergyWise enables users to input a building's size and location, select a standard or code, and complete specific climate and building information for a project. Heating and cooling information, such as the type of heating appliance, interior design temperature and relative humidity, are collected to determine annual energy costs and dew point for vapor retarder placement.

Details about the roof are added layer by layer. Users can select materials like rigid board insulation and membrane, each with a specific set of properties that affect a building's energy efficiency. R-values are provided for common material types and thicknesses.

NRCA recommends designers use a design R-value of 5.0 per inch thickness for polyisocyanurate insulation in all climates for more accurate performance evaluations. There also is the option to use the LTTR value of 5.6 per inch or manually enter another value. Keep in mind NRCA does not consider LTTR use to be appropriate for roof system design purposes when actual in-service R-values can be important aspects of roof system and whole building performance.

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

What's new

With this recent update, EnergyWise now includes minimum R-value requirements for roof assemblies from the following codes and standards:

- International Energy Conservation Code®: 2000, 2003, 2006, 2009, 2012, 2015, 2018, 2021 and 2024 editions
- ASHRAE 90.1: 2004, 2007, 2010, 2013, 2016, 2019 and 2022 editions

- International Green Construction Code®: 2012 and 2015 editions
- ASHRAE Standard 189.1, "Standard for the Design of High-Performance Green Buildings": 2009 and 2011 editions

In addition, the following updates to the program allow for new and improved energy estimates:

- 2024 IECC and 2022 ASHRAE 90.1 climate zones
- Heating degree days and cooling degree days for all climate regions
- Design heating dry bulb temperature
- Fuel cost estimates

Requirements and calculated estimates provided in the report are based on information found in the referenced codes and standards. R-value requirements for a

project are determined based on the climate zone of the county in which a building resides; climate zones are based on heating degree days and cooling degree days.

Heating degree days and cooling degree days measure the difference between outside temperatures and design inside temperatures on a daily basis throughout the year. The higher the numbers, the more HVAC equipment has to work to condition an inside space.

As new weather stations are built, more data is collected and heating and cooling requirements change over time, climate zones are updated.

ASHRAE and IECC had unique changes to their climate zone lists in their latest versions. For example,

heating degree days, cooling degree days and design heating dry bulb temperatures for more than 2,700 stations in the U.S. were added or updated so the estimated energy costs and dew point locations for vapor retarder placement can be more accurately determined.

Default fuel costs have also been updated to reflect the latest information available from the U.S. Energy Information Administration, which is part of the Department of Energy.

Estimates only

EnergyWise results are estimates based on recognized engineering principles using the parameters input by users. Actual energy costs and savings are based on multiple factors, including specific energy costs during an 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. 🌱🔧

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

For background information about NRCA's recommendations for polyisocyanurate, visit professionalroofing.net for a link to NRCA's Industry Issue Update, "New polyisocyanurate R-values," January 2016.



AI causes issues in work relationships

The *Harvard Business Review* recently published an article, “How AI Damages Work Relationships—And Where It Can Actually Help,” by Amy Gallo, where she shares the following problems caused by including AI in work relationships:

- It creates “workslop,” not efficiency. When not used thoughtfully, AI can make your work more difficult. If AI helped your co-worker write a report more quickly, you now likely need to check sources and decide whether the information is valuable. Colleagues receiving AI workslop would then need to take extra steps to decode and correctly interpret information and submitted work.
- It damages trust. The workslop research revealed about half of survey respondents viewed co-workers who sent workslop as less creative, less capable and less reliable than previously believed. Forty-two percent viewed them as less trustworthy, and 37% viewed them as less intelligent.
- It eliminates necessary friction. Many employees use AI to help navigate conflict and respond to difficult interpersonal situations. Gallo says: “I’m a big believer that we need tension and messiness to do good work. The friction, the back-and-forth, even the occasional miscommunication—these aren’t bugs in the system, they’re features. They’re how we collaborate, build understanding, and create something better together.”
- It prevents us from building real relationships. When employees turn to AI instead of people, relationships weaken. “When things go completely smoothly with someone, it may feel good, but we don’t necessarily grow or bond,” Gallo says. “It’s in awkward moments, expressions of vulnerability, and the clearing up of miscommunications that we get to know others, and ourselves, better.”
- It may be training us to be less civil. When collaborating with AI, you don’t have to worry about its feelings. And many generative AI programs tell you what you want to hear. This can affect relationships with co-workers as you may have less patience when there is a disagreement or be less understanding if there is a result you do not like.

However, Gallo says when used intentionally, AI can be helpful in the workplace; she provides the following recommendations:

- Be transparent when you have used AI. Being upfront about your use of AI helps to reduce the cognitive load for your co-workers and helps you keep their trust. Note

that some people may use AI as an accommodation if they are dyslexic, for example.

- Reserve AI for transactional relationships. If an interaction is purely transactional and you are not building a relationship with someone, AI can be useful. For example, you might use AI to write a firm email to a general contractor who is not delivering work as promised. But do not use it in relationships when you are trying to build trust and connection.
- Use AI to strengthen human relationships—not replace them. You can ask AI for ideas about how to build rapport with a new co-worker or conversation starters for a one-on-one meeting. This way, you are using it to help make an initial connection but not to build a trusting relationship.
- Recognize you have different norms for people versus AI. Take a moment to identify and distinguish between how you want to handle your in-person conversations and how you want to handle your interactions with AI.



Help define quality workmanship

NRCA and the Insurance Institute for Business & Home Safety have partnered to collect insights from professional roofing contractors about what defines quality workmanship in residential roofing.

In addition, the survey asks about common causes of roof system failure, customer priorities and real-world challenges in the field.

By capturing these perspectives, the goal is to better understand the gaps between building codes, best

practices and homeowner expectations. The findings will help improve product recommendations, installation standards and customer

To take the survey, visit
professionalroofing.net.



education, ultimately leading to stronger, more durable roof systems and better-informed decision-making across the U.S.