RoofWise—Version 2.0

by **Mark S. Graham**

In January, NRCA, with the support of the Polyisocyanurate Insulation Manufacturers Association, released RoofWise—Version 2.0, an updated version of the CD-ROM software that analyzes the energy efficiency of low-slope roof assemblies. RoofWise will be a useful tool for those who design or specify low-slope roof assemblies.

Background

RoofWise originally was developed and released in 1998 as a PC-based software application version of NRCA's energy-analysis publication, *The NRCA Energy Manual.* RoofWise offers a significant advantage compared with the manual because it automates the lengthy calculation procedures necessary to determine minimum thermal insulation requirements, building heating and cooling costs, and proper vapor retarder placement.

As a result, roofing professionals can analyze multiple roof assembly configurations in a fraction of the time it would take to manually calculate the results for a single roof assembly configuration.

The original version of RoofWise was based on recognized energy calculation and analysis procedures, including those described in the American Society of Heating, Refrigerating & Air Conditioning Contractors Engineers' (ASHRAE's) *ASHRAE Fundamentals Handbook* and ASHRAE Standard 90.1-1989, "Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings."

In 1999, ASHRAE updated Standard 90.1 (designated as 90.1-1999); the updated standard provides a recognized methodology for determining the minimum amount of thermal insulation necessary for roof assemblies.

During the past several years, states have updated their energy codes to require compliance with ASHRAE Standard 90.1-1999. (For more information about ASHRAE 90.1-1999, see "Revised thermal insulation requirements," May 2001 issue, page 56.)

Updated version

RoofWise—Version 2.0 is based on updated calculation and analysis procedures, including those of ASHRAE Standard 90.1-1999. As a result, the software determines the minimum thermal insulation requirements for low-slope roof assemblies in a manner consistent with most states' energy codes.

Also, RoofWise now takes into account a roof assembly's solar reflectance (reflectivity of the roof surface) when determining the roof assembly's minimum thermal insulation requirements and building's associated heating and cooling costs. If a building is located in a region where its roof assembly's solar reflectivity meets ASHRAE's recognized parameters and level, the user can elect to reduce the amount of thermal insulation that is necessary or take solar reflectivity into account when reducing the building's cooling costs.

The updated RoofWise also contains changes to the on-screen appearance and report of results that are somewhat different from the original version. These changes were made based on suggestions from users of the previous edition.

For example, the new report of results has been formatted in a manner that is suitable for presentation to, for instance, a building owner. Reports can be printed from the application, saved as electronic files or attached to e-mails.

Closing thoughts

If you are involved in designing or specifying low-slope roof assemblies, I encourage you to consider using RoofWise—Version 2.0 to assist you in determining a roof assembly's energy-efficient attributes.

Experience has shown building owners can benefit from energy-efficient roof assemblies. RoofWise not only shows the minimum amount of thermal insulation that may be required for a building's roof assembly by an energy code but also the heating and cooling costs associated with various roof system designs (such as combinations of thermal insulation and roof surface reflectivity).

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For contractors and manufacturers, RoofWise can be a useful tool to market energy-efficient roof assembly designs to building owners.

RoofWise is available by contacting NRCA InfoExpress at (866) ASK-NRCA (275-6722) or shop.nrca.net.

Mark S. Graham is NRCA's associate executive director of technical services.