

Roof Savings Calculator

Copyright Document Number

CR13-00014

Copyright Summary

Previous cool roof calculators provided different estimates of savings. The Roof Savings Calculator was developed to provide an industry-consensus standard for savings of modern roof and attic technologies. AtticSim, a software program and ASTM standard which captures radiative heat transfer in the roof assembly with high-fidelity physics, is used to determine heat flow through the roof and attic assembly to the attic floor. This information is then exchanged at each time-step of simulation to the DOE-2.1E whole-building simulation model to determine energy and cost savings from the HVAC unit. The software options currently supported by the simulation engine can be tested at www.roofcalc.com. It defaults all values to national averages with options to test a base-case (residential or commercial) building versus a comparison building with inputs for building type, location, building vintage, conditioned area, number of floors, and window-to-window ratio, cooling system efficiency, type of heating, heating system efficiency, duct location, roof/ceiling insulation level, above-sheathing ventilation, radiant barrier, roof thermal mass, roof solar reflectance, roof thermal emittance, utility costs, roof pitch.

Inventor

NEW, JOSHUA
Energy and Transportation Science Division

Licensing Contact

SIMS, DAVID L. UT-Battelle, LLC
Oak Ridge National Laboratory
Rm 124C, Bldg 4500N, MS: 6196
1 Bethel Valley Road
Oak Ridge, TN 37831
Office Phone: (865) 241-3808
E-mail: SIMSDL@ORNL.GOV

Note: The copyright described above is an early stage opportunity. Licensing rights to this intellectual property may be limited or unavailable.