

Updating Java coding for the 1997 Revision to the DOE Insulation Fact Sheet

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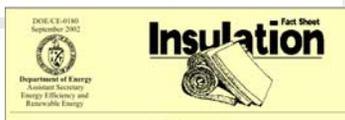
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<http://www.csm.ornl.gov/Internships/abstracts/JanineLafayette.pdf>

Abstract

In 1998 a program was created in conjunction with the 1997 revision to the Department of Energy's Fact Sheet. The java-based program is used to estimate the needed insulation R-value for new or existing homes. The data is comprised of 4 fuel types and 4 house types with varying characteristics for each house and fuel type. To provide a tabular summary of all these recommendations, macros are being developed to facilitate an efficient means of running the very large number of cases needed to produce this summary. Until the macros and algorithms are completed the existing tables (1998) and the updated (2002) interactive code will give inconsistent results for a number of locations. New algorithms are also being researched to determine if the results of more recent research should be incorporated in the code.

Macros are being tested that will grab the consumers home characteristics before the results/recommendations are generated.



ZIP-Code Results

How is what we know about your house? You live in Knoxville, TN and your zip code starts with 379. You own a new house and it has no-chose located in unheated spaces. Your alternative investment rate of return is 6.4%. The following table shows what we know about your heating and cooling system.

System	Heating	Cooling
Efficiency	Natural Gas	None
Cost	High efficiency	None
	10.55 \$/1000 cubic ft	

If you want more information about how to buy or install insulation, please read the [Insulation Fact Sheet](#). To see the cost values used in this calculation, please see the [Insulation Cost Table](#). Here are our insulation level recommendations for your home:

Wood-Framed Building

Insulation Location	R-Value	Notes
Attic	30.0	
Exterior wall	13.0	
Wall cavity	11.0	
Over-sill wall cavity	19.0	This recommendation assumes that a 2x4 wall can be built for the same cost as a 2x6 using a careful design procedure called Optimum Value Engineering (OVEE). Discuss options with your builder.
Concrete or masonry wall	11.4	Insulation should be placed on the interior side of an above-grade wall.
Floor	25.0	Over unheated, unventilated space.



Preparation of samples from the Philadelphia project for moisture testing



Thermal expansion testing in materials and insulation lab



The Research Alliance in Math and Science program is sponsored by the Mathematical, Information, and Computational Sciences Division, Office of Advanced Scientific Computing Research, U.S. Department of Energy. The work was performed at the Oak Ridge National Laboratory, which is managed by UT-Battelle, LLC under Contract No. De-AC05-00OR22725. This work has been authored by a contractor of the U.S. Government, accordingly, the U.S. Government retains a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or allow others to do so, for U.S. Government purposes.

Acknowledgments: The author would like to thank my partner Lebron Stinson; my mentor, Therese Stovall; and Kara Kruse, Debbie McCoy, Thomas Zacharia, the Computer Science and Mathematics Division, and all the 2004 RAMS participants.

