CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY

Name(s)
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Project Number
J1319

Project Title
Money in Your Wallet and Fire off Your Roof

Abstract

Objectives/Goals
My objective was to learn which fire-resistant roofing material was the best at insulating a home.

Methods/Materials
Various roofing tiles- asphalt, concrete, clay, metal, and slate- were set in direct sunlight atop a small box made of insulation material. Six thermocouples recorded the inside temperature over a period of time.

Results
The clay covered box had the lowest temperatures during the tests. At times it had a 120% lower temperature than its closest contender, asphalt. After asphalt, concrete had the next lowest temperatures followed by metal, then slate.

Conclusions/Discussion
Clay proved to be the best choice for a homeowner because of its insulating abilities in a warm environment. Slate is the worst choice because the slate box had internally high temperatures and insulated the box poorly.

Summary Statement
This is an investigation of fire-resistant, energy-efficient roofing material.

Help Received
Dr.Walt Whatley (General Atomics) provided thermocouples and DAQ system. Father helped conduct experiment.