## Cool Roof

### Author

* Andrew Parker, NREL

### Description

Use a reflective roofing material to reduce thermal gain through the roof. This may increase energy consumption in heating-dominated climates.

### Modeler Description

Loop through all roofs and set the reflectance and emissivity values to the user specified values. The default values come from the LEED advanced energy modeling guide.

### Use Case Types

Retrofit, New Construction

### Arguments

The desired thermal emittance, solar reflectance, and visible reflectance of the cool roof.

### Initial Condition Message

### Final Condition Message

### Not Applicable Messages

### Warning Messages

### Information Messages

The names of the materials modified to reflect the application of a cool roof

### Error Messages

### Code Outline

* Loop through all outdoor roof surfaces
* Modify the outside layer’s thermal, solar, and visible absorptance based on user inputs
* Record the material and the construction that was modified

### Tests

This measure applies to all prototype buildings

### References

1. <http://www.usgbc.org/sites/default/files/Advanced%20Energy%20Modeling%20for%20LEED_V2_1c.pdf>