

## Basics on Weatherization of Doors and Windows

- Home weatherization is concerned with two things - insulation and air sealing (correcting air leaks)

- The amount of insulation is measured with an “R” value. The higher the R value the better the insulation. However, for windows and doors a “U” value is used to describe insulation. (Don’t ask me why). The U value is the reciprocal of the R value. I.e.  $U=1/R$ . If R is 5 then U is .2 The lower the U value the better the insulation of the window or door. Here we are just using R values.

- Air leaks occur throughout the house, particularly with windows and doors. There is no equivalent R value for air sealing. However, the amount of air leakage can be measured with a “blower door test”, a specialized test done during a Home Energy Audit. There is a simple test you can do. Shut a door or window on a dollar bill. If you can pull out the dollar bill without it dragging, you have a significant air leak

- Windows and doors cause ~25% of a home’s heat loss.
- Doors and windows are terrible insulators. A single pane window has an R value of 1. A wooden door an R value of 2-3. (this compares to an exterior wall with an R value in the 20s). Adding storm windows or doors adds little to the R value (increase R value by ~1). However, new fiberglass or steel doors are better insulators than wooden doors. They have R values in the 4-6 range. Adding glass to an exterior door will decrease the door’s R value.
- The emphasis on weatherization of windows/doors is to decrease the amount of air leakage. Here is where storm windows and doors can help.