Environmental System I

Nov 5th Assignment: Comparison of Insulation Materials and Window Assembly

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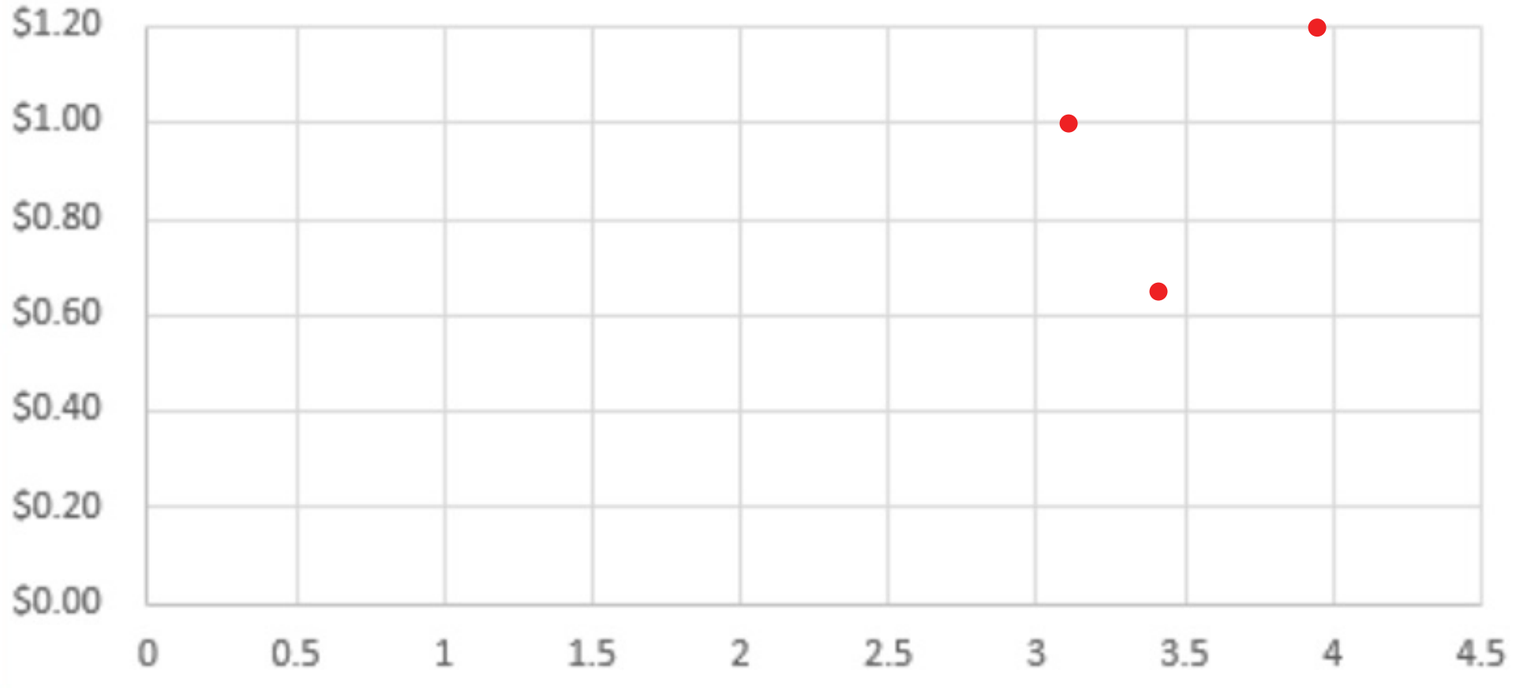
Insulation Material Comparison - R Value & Costs

Three Insulation Materials Comparison

Material	R-value/inch	Cost/square foot
Fiberglass (batt)	3.4	$0.64
Mineral wool	3.2	$1.00
Polyicynene (foam)	3.9	$1.20

From the comparision of the chart and the scatter plot of the R value and Cost of Fiber-glass (batt), Mineral wool, and Polyicynene (foam) we can see that as the R value of material goes up, the cost of the material first goes down and goes up again.

Scatter Plot of R value and Costs



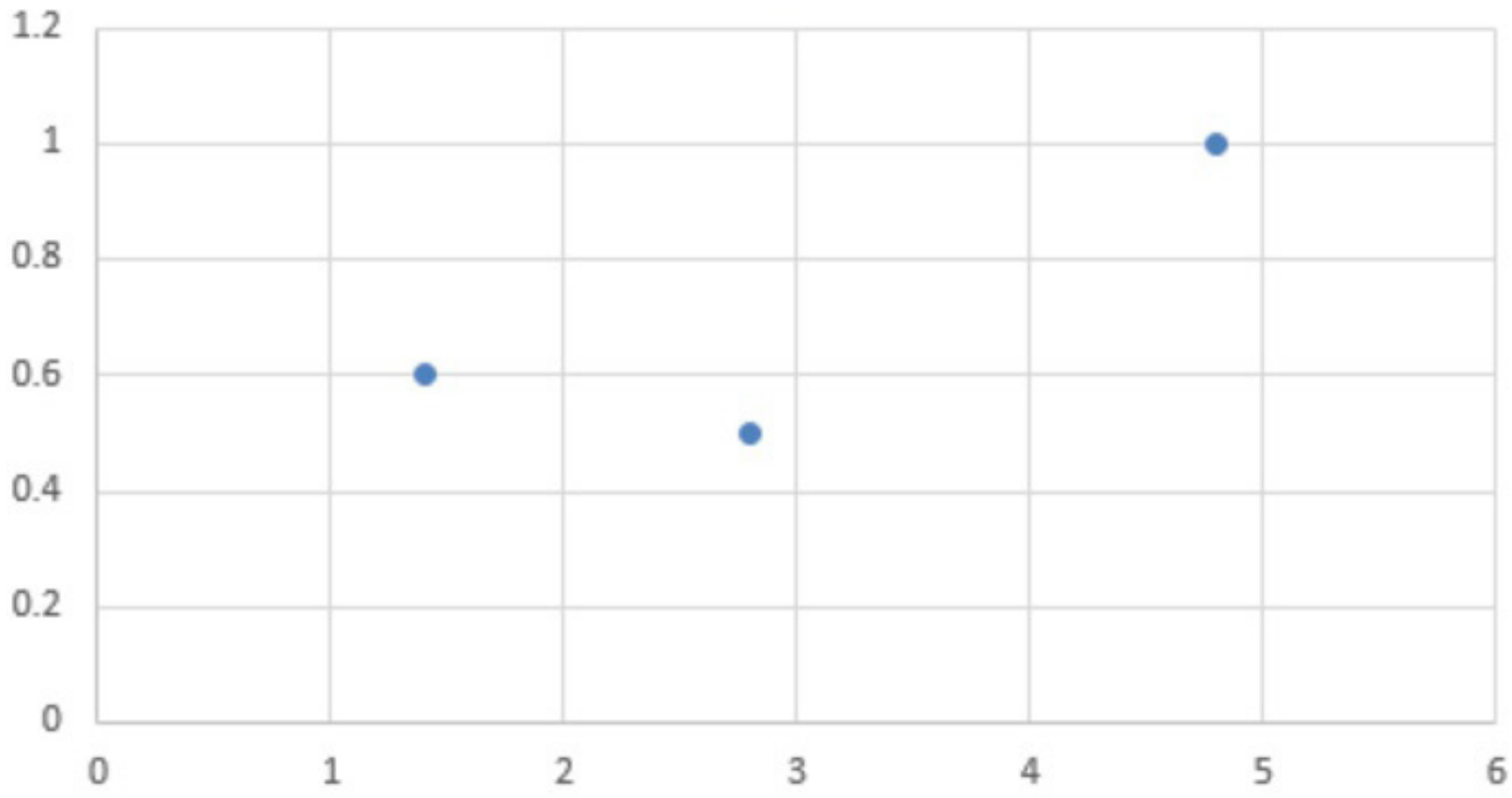
Therefore, we can conclude that there is no direct correlation between the R value and the cost of material from these three sets of data. While the only thing is certain is that the cost of material is affected by the R value of material.

Window Assemblies Comparison - Center of Glass U Value & Assembly U Value

Window Assembly Comparison

Window Assembly Type	Assembly U Value (W/m2K)	Center Glass Value (W/m2K)
Single Glazed	4.8	1
Double Glazed	2.8	0.5
Tripple Glazed	1.4	0.6

Scatter Plot of U value of Center Glass and Assembly



From the comparision of the chart and the scatter plot of the U value of center glass and assembly, we found that there is a tendency of positive correlation between the two.

As the Assembly U value increases, the center glass U values is increasing as well, despite in the second case where the center glass U value slightly drops below the first one.