

Lesson 7b, Screen 7: Composite Wall R-Values

Example 10

A wall consists of 0.5" wood siding ($R = 1.81$), 0.75" plywood ($R = 0.94$), 3.5" of fiberglass ($R = 13.0$), and 0.5" plasterboard ($R = 0.45$). What is the composite R-value of the wall?

This problem, we need to calculate composite R-value.

The wall consists of four layers. One half inch wood siding, and its R-value is given straight away for half inch as .81. And we have three quarter inch plywood and this plywood's R-value is also given as .94, this is for 3/4 ". Whereas the fiberglass, each inch has a R-value of 3.7. We are using 3 and a half inches. So, 3.5 times 3.7 would give us about 13.00 R-value. And the last layer would be one half inch plaster board which is also drywall and its R-value is given as .45.

1/2 " wood siding		0.81
3/4 " plywood		0.94
3 1/2 " Fiberglass	3.7/inch	13.00
1/2 " plaster board		<u>0.45</u>
		15.2

So when you add these up you get 15.2 which means the composite R-value of this wall is 15.2 degree F, foot squared, hour over BTUs.

$$= 15.2 \frac{^{\circ}\text{F ft}^2 \text{ h}}{\text{BTU}}$$

$\frac{1}{2}$ " Wood Siding 0.81
 $\frac{3}{4}$ " Plywood 0.94
 $3\frac{1}{2}$ " Fiberglass 37 13.00
 $\frac{1}{2}$ " Plaster board 0.45
15.2

$$15.2 \frac{\text{ft}^2}{\text{ft}^2} = 15.2$$

Click PLAY to view the solution.



REPLAY

