



**Calculated U-values for VR+Shield and Flex Foam Installed with Metal Framing**

The reflective insulation assembly VR+ Shield with  $R=7.1 \text{ ft}^2\cdot\text{h}\cdot^\circ\text{F}/\text{Btu}$  (solid) or  $R=7.0 \text{ ft}^2\cdot\text{h}\cdot^\circ\text{F}/\text{Btu}$  (perforated) can be installed between 1.625-in. steel framing with 1.25-in. flanges attached to masonry walls. The U-value is calculated in this report using the parallel path method. The calculations are based on framing that is 16-in. on-center with a floor to ceiling distance of 96 inches. The corresponding area fraction 0.102 has been calculated for the framing. The thermal resistance of steel framing has been taken to be zero. The thermal resistances used in the U-value calculations are listed in Table 1.

Table 1. Thermal Resistance Values ( $\text{ft}^2\cdot\text{h}\cdot^\circ\text{F}/\text{Btu}$ )

<u>Component</u>	<u>R-value</u>
Exterior air-film	0.25
Stucco 0.625 in.	0.14
CMU, 8 in., insulated core	2.0
CMU, 8 in., uninsulated	1.04
FFC Flex Foam, 1/2 in.	1.60
VR+ Shield	7.0
Region occupied by framing	0
Interior sheathing, 0.5 in.	0.45
Interior air film	0.68

The results for calculated U-values are contained in Table 2. The results in Table 2 include CMU with and without core insulation and assemblies with and without continuous insulation. U-values based on 24-in. OC framing would be less than those shown in Table 2.

Table 2. Calculated U-values ( $\text{Btu}/\text{ft}^2\cdot\text{h}\cdot^\circ\text{F}$ )

<u>Assembly</u>	<u>U-value</u>
CMU, uninsulated, no continuous insulation	0.134
CMU, insulated, no continuous insulation	0.114
CMU, insulated, with Flex Foam as cont. insulation	0.094
CMU, uninsulated, with Flex Foam as cont. insulation	0.105
CMU, uninsulated, with R 0.5 added to the flanges	0.128
CMU, uninsulated, with R 1.0 added to the flanges	0.123

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