

# EXO-TEC Manufacturing, Inc.

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## Cost / Benefit Analysis of the Stand-Off MPV Bracket

The 2009 International Energy Code requires that an exterior wall assembly in Climate Zones 4, 5, 6, 7 & 8 have a U-Value of 0.064. The U-Value is the inverse of the R-Value so the R-Value of the assembly needs to be 15.63. Working the numbers backwards, everything in an assembly with a composite metal panel veneer and LGMF back-up except the insulation layer would result in an assembly with an R-Value of

Exterior Air Film	R-0.17
Composite Metal Panel Veneer	R-0.0172
Air Space	R-1.0
Insulation	N/I
Gypsum Sheathing	R-0.56
LGMF	R-0.79
Gypsum Wallboard	R-0.53
Paint	R-0
Interior Air Film	<u>R-0.68</u>
Total Without Insulation	<u>R-3.75</u>

This assembly requires insulation with an R-Value of 11.88.

Traditional composite metal panel veneers use continuous Z-furring to mount the veneer to the structure. This Z-furring creates a thermal short through the insulation layer thus reducing the effectiveness of the insulation. For a spacing of 2'-0" O.C. vertically, the reduction of the R-Value of the insulation is approximately 50%. In order to meet the 2009 IEC requirements for this assembly, the thickness of the insulation layer would have to be doubled

This analysis will compare the conventional method of fastening the metal panel veneer to the building with an insulation layer that will achieve the U-Value requirement versus using the Stand-Off MPV bracket.

Conventional Method: Two layers of 2 1/8" thick R-12 extruded polystyrene insulation between continuous Z-furring

Cost of polystyrene insulation	2 layers @ \$ 2.42 / sf / layer	\$ 4.84 / sf
Labor to install	2 layers @ \$ 1.00 / sf / layer	<u>\$ 2.00 / sf</u>
Cost ( Excluding sales tax, overhead & profit )		<u>\$ 6.84 / sf</u>

Plated Stand-Off MPV Plated Strategy: One layer of 2 1/8" thick R-12 extruded polystyrene insulation with Stand-Off MPV Brackets moving the Z-furring, flat stock or hat channel outside of the insulation.

Cost of polystyrene insulation	1 layer @ \$ 2.42 / sf	\$ 2.42 / sf
Labor to install	1 layer @ \$ 1.00 / sf	\$ 1.00 / sf
Stand-Off MPV Brackets ( plated )	\$ 8.00 each / 2.66 sf / bracket	\$ 3.01 / sf
Screws / bracket	2 @ \$ 0.08 / screw / 2.66 sf / bracket	\$ 0.06 / sf
Labor to install	\$ 0.50 / bracket / 2.66 sf / bracket	\$ 0.19 / sf
Saving on Z-Furring, et. al	\$ 0.50 / lf / 2 sf / lf	<u>( \$ 0.25 / sf )</u>

Cost ( Excluding sales tax, overhead & profit ) \$ 6.43 / sf

Sales tax on the materials was omitted due to the fact that sales tax differs from state to state. Overhead and profit was omitted due to market differences. Both are percentages of costs and therefore will increase the pricing proportionally.

This analysis was based on a minimum quantity order of 5,00 brackets. Substantial savings on the cost of the bracket will be realized based on larger quantity orders. Please contact us for a cost benefit analysis for you project.

This analysis is for cost only. The fact that continuous Z-furring through the insulation layer is in violation of the continuous insulation requirements of the 2009 IEC should be the deciding factor.

While the Stand-Off MPV Bracket does create a 3/8" diameter thermal bridge through the insulation every 2.66 sf of wall area, it is considered to have as negligible or less of an effect on the insulation layer as masonry veneer anchors.

Please feel free to contact us should you require any additional information.

Best Regards,

Len Anastasi  
President