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IronRidge
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Attn: Mr. David F. Taggart, Vice President Products

Subject: IronRidge Roof Flush Mounting System
Roof Mounts by Quick Mount PV, Walnut Creek, CA
Classic Comp Lag (QMSC-LAG)
E-Mount Lag (QMSE-LAG)
Classic Shake Lag (QMLC-LAG)

Dear Sir:

This letter is a supplement to the standard letter for the IronRidge Roof Flush Mounting System to address the requirements for use with the QMSC-LAG, QMSE-LAG, & QMLC-LAG Roof Mounts.

We have reviewed the Test Report for the mounts prepared by Applied Materials & Engineering (AME), dated October 29, 2014 & November 19, 2014 and the subsequent ICC-ES Evaluation Report No. ESR-3744 dated November 2014. We have also reviewed loading and anchorage requirements for the IronRidge Roof Flush Mounting System for the XR10, XR100, & XR1000 rails. We have determined that, subject to the limitations outlined below, the QMSC-LAG, QMSE-LAG, & QMLC-LAG mounts are suitable for the IronRidge Roof Flush Mounting System.

The primary structural element of the mounts is a standard 5/16" dia. lag screw. The lag screw is intended to be anchored into a timber roof joist or truss. The AME tests simulated this configuration. The AME report indicates the failure mode under tension loading and shear loading was the pullout of the lag screw from the wood framing.

ESR-3744 & the AME test gives the allowable load for pullout (uplift) and lateral shear for anchorage in Douglas Fir-Larch timber with a specific gravity (G) of 0.50 as follows:

Allowable Uplift = 732 lbs, Allowable Shear = 526 lbs

These values include a Duration of Load Factor for Wind Loads and no further increase is permitted. The allowable loads are not to exceed the applied loads which can be obtained from the online Design Assistant for the system at IronRidge.com. The Design Assistant covers a wide range of system configurations and loading and allows the user to customize the input to match the specific project conditions.

The following tables are derived from the Design Assistant data and show the limit conditions under which the QMSC-LAG, QMSE-LAG, & QMLC-LAG mounts may be used for any roof slope up to 45 deg. The values shown are for the rails installed at their maximum allowable spans per the Design Assistant or the current IronRidge Flush Mounting Standard letter. The values for specific roof slopes and rail spans can be obtained from the online Design Assistant as described above.

IronRidge XR10 Rail				
MAXIMUM ALLOWABLE WIND SPEED (mph)				
Roof Height (ft)	Wind Exposure Category	Roof Wind Zone		
		1	2	3
15	B	170	170	170
15	C	170	170	170
15	D	170	170	170
30	B	170	170	170
30	C	170	170	170
30	D	170	170	150
45	B	170	170	170
45	C	170	170	160
45	D	170	170	140
60	B	170	170	170
60	C	170	170	150
60	D	170	170	140

IronRidge XR100 Rail				
MAXIMUM ALLOWABLE WIND SPEED (mph)				
Roof Height (ft)	Wind Exposure Category	Roof Wind Zone		
		1	2	3
15	B	170	160	130
15	C	170	140	110
15	D	170	130	100
30	B	170	160	130
30	C	170	140	110
30	D	170	130	100
45	B	170	150	120
45	C	170	130	105
45	D	160	120	100
60	B	170	150	120
60	C	170	130	105
60	D	160	120	-

IronRidge XR1000 Rail				
MAXIMUM ALLOWABLE WIND SPEED (mph)				
Roof Height (ft)	Wind Exposure Category	Roof Wind Zone		
		1	2	3
15	B	170	130	100
15	C	140	110	-
15	D	130	100	-
30	B	170	130	100
30	C	140	110	-
30	D	130	100	-
45	B	160	120	-
45	C	140	105	-
45	D	130	-	-
60	B	150	110	-
60	C	130	100	-
60	D	120	-	-

Notes:

1. Allowable Loads per ICC-ES report ESR-3744, dated November 2014
2. Tabulated values are subject to the Load/Span requirements of the IronRidge Rails and may be used without any additional restriction on the snow load
3. Wind Loads & Snow Loads per ASCE 7-10
4. Maximum Panel Dimension = 78.5 in

Please feel free to contact me at your convenience if you have any questions.

Respectfully yours,

Tres J. Warner, P.E.
Design Division Manager

