



October 28, 2008

Mr. Stewart Wentworth
QUICK MOUNT PV
1483 67th Street
Emeryville, CA 94608

Project Number 108443C
ICC-ES FILE # 08-09-16

Subject: Quick Mount PV Load Testing
ICC-ES AC13 & ASTM D 1761

Dear Mr. Wentworth:

As requested, Applied Materials & Engineering, Inc. (AME) has completed load-testing Quick Mount PV system anchors for shear and tensile strength. The purpose of our testing was to evaluate the tensile and shear load capacity of the Quick Mount PV system in a high density (Douglas Fir) and a low density wood (Cedar).

SAMPLE DESCRIPTION

Twelve (12) 12"x12" samples were delivered to our laboratory on 10-16-08; six each for Douglas Fir and Cedar. A copy of the installation instructions is provided in Appendix A. Typical sample photo is provided in Appendix B.

PROCEDURES & RESULTS

Since an acceptance criterion (AC) has not been developed for this product, the samples were tested under the direction of Mr. Yamil Moya, P.E. with ICC-ES, and in general accordance with applicable procedures outlined in ASTM D 1761 and AC13.

a. Tensile Strength

Three samples each of the two types of wood were tested for tensile strength on October 24 & 27, 2008 using a United Universal testing machine. Samples were rigidly attached to the testing machine and a tensile load was applied to the 5/16"x6" hanger bolt at a displacement rate 0.1 inches per minute without shock until failure. Detailed results are provided in Table I. Based on these results, the average tensile strength of the hanger bolt in Douglas Fir and Cedar wood species were determined to be 3934 lbs and 2214 lbs, respectively.

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b. Shear Strength


Three samples each of the two types of wood were tested for shear strength on October 24 & 27, 2008 using a United Universal testing machine. Samples were rigidly attached to the testing machine and a shear load was applied to the 2-1/4"x1-1/4"x1-1/4" aluminum mount at a displacement rate 0.1 inches per minute without shock until failure. Detailed results are provided in Table II. Based on these results, the average shear strength of the hanger bolt in Douglas Fir and Cedar wood species were determined to be 4365 lbs and 3313 lbs, respectively.

Photographs illustrating typical setup and typical failure modes are shown in Figure I and II.

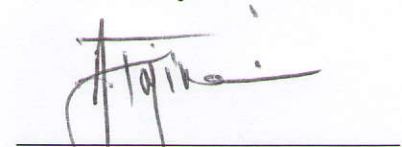
If you have any questions regarding the above, please do not hesitate to call the undersigned.

Respectfully Submitted,

APPLIED MATERIALS & ENGINEERING, INC.


Mohammed Faiyaz
Laboratory Manager

Reviewed By:


Armen Tajirian, Ph.D., P.E.
Principal



CC: ICC-ES, Mr. Yamil Moya, P.E.: ymoya@icc-es.org
File 108443C

TABLE I

QUICK MOUNT PV- 5/16"X6" HANGER (LAG) BOLT
TENSILE LOAD TEST RESULTS

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SAMPLE ID	WOOD SPECIES	ULTIMATE LOAD IN TENSION (LBS)	FAILURE MODE
T-DF-1	Douglas Fir	3963	Lag bolt pulled out
T-DF-2	Douglas Fir	4074	Lag bolt pulled out
T-DF-3	Douglas Fir	3764	Lag bolt pulled out
Average	...	3934	...
T-C-1	Cedar	2096	Lag bolt pulled out
T-C-2	Cedar	2004	Lag bolt pulled out
T-C-3	Cedar	2543	Lag bolt pulled out
Average	...	2214	...

TABLE II
QUICK MOUNT PV- 5/16"X6" HANGER (LAG) BOLT
SHEAR LOAD TEST RESULTS
PROJECT NUMBER 108443C

SAMPLE ID	WOOD SPECIES	ULTIMATE LOAD IN SHEAR (LBS)	FAILURE MODE
S-DF-1	Douglas Fir	4306	Bent lag bolt
S-DF-2	Douglas Fir	3990	Bent lag bolt
S-DF-1(A)	Douglas Fir	4799	Bent lag bolt
Average	...	4365	...
S-C-1	Cedar	3214	Bent lag bolt
S-C-2	Cedar	3456	Bent lag bolt
S-C-3	Cedar	3268	Bent lag bolt
Average	...	3313	...

FIGURE I

QUICK MOUNT PV LOAD TEST SETUP

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a. Shear Test



b. Tension Test



FIGURE 2
QUICK MOUNT PV TYPICAL FAILURE MODE
PROJECT NUMBER 108443C



a. Shear Failure



a. Tension Failure

APPENDIX A

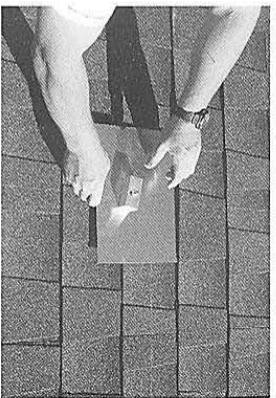
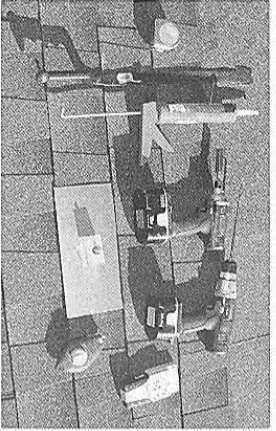
**INSTALLATION
INSTRUCTIONS**

Quick Mount PV™

(510) 652-6686
www.quickmountpv.com

TOOLS NEEDED

Measuring tape, roofer's flat bar, chalk line, stud finder, caulking gun with roofing sealant, drill with 1/4" long bit, drill with 1/2" deep socket.

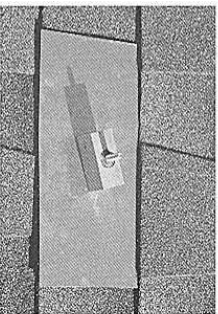
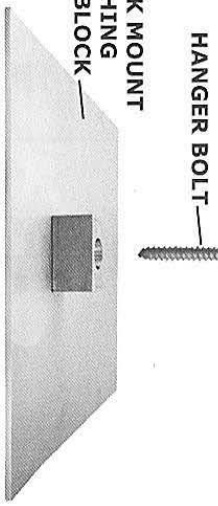
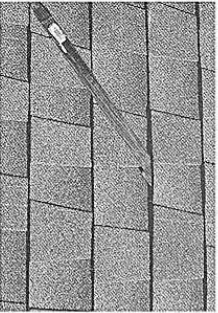


1. LOCATE RAFTER
Using horizontal and vertical chalk lines to align hole for placement of each Quick Mount



2. DRILL PILOT HOLE
Using drill with 1/4" long bit, drill pilot hole through roof and rafter, taking care to drill square to the roof.

6. SET HANGER BOLT, SEALING WASHER & NUT
Using drill with 1/2" deep socket, set sealing washer with rubber side down, then nut, and tighten into place.



7. ADD RUBBER GASKET
Push black gasket into place flush with top of Quick Mount block.

3. LIFT TILE
Lift composition roof tile with roofers flat bar, just above placement of Quick Mount.

4. SEAL HOLE Using caulking gun with roofing sealant, squeeze a dab of roofing sealant into hole.



8. SECURE RACK INTO PLACE, WITH FLAT WASHER & NUT
Using drill with 1/2" deep socket, set up rack over bolt, with flat washer, then nut, and tighten into place.

PATENT PENDING

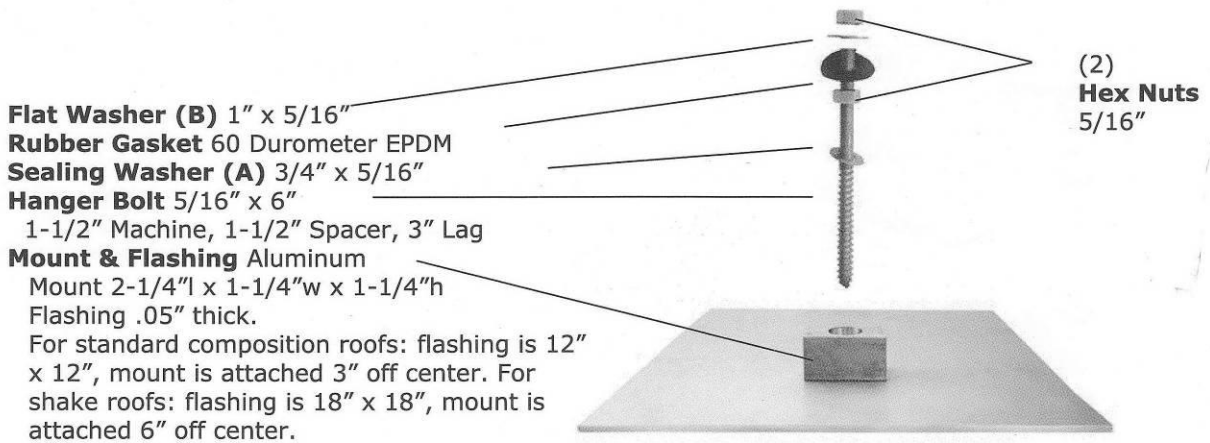
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APPENDIX B

Quick Mount PV™

SPECIFICATION SHEET

Quick Mount PV™ is an all-in-one waterproof flashing and mount to anchor photovoltaic racking systems, solar thermal panels, air conditioning units, satellite dishes, or anything you may need to secure to a new or existing roof. It is made in the USA of all aluminum and includes stainless steel hardware. It works with all standard racks, installs seamlessly and saves labor by not needing to cut away any roofing, will out live galvanized 2 to 1, and is a better low-profile mount.



Patent Pending