

**RADCO TEST REPORT**  
Test Report No. RAD-5490  
Project No. C2868A

## Shear Load Test on Diamond-Furr™ System

Prepared for

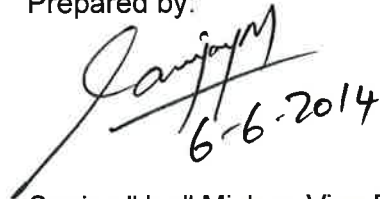
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by

### **RADCO**

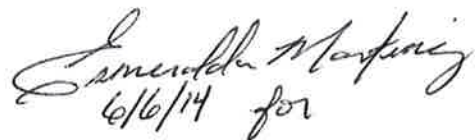
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## 1.0 INTRODUCTION

At the request of Brand X Metals RADCO conducted shear load tests on the test specimens described below. The objective of this testing was to evaluate the performance of the Brand X Metals, Inc.'s Diamond-Furr™ metal lath attachment system installed on 3" thick insulation and subjected to shear loads.

## 2.0 TEST SPECIMEN

Six (6) fully assembled test specimens were submitted to RADCO for testing.

Metal Studs: 4" 54 MILS 16GA Galvanized 50KSI

Wood Studs: 2x4, Spruce Pine Fir (SG=0.42)

Ridged Insulation: 3" R MAX Eco Max 25 psi

Fasteners For Metal Studs: Grabber #10 X 4" Self Drilling Bugle Head with Zinc Coating Part# B10400SDZ

Fasteners For Wood Studs: Grabber #10 X 5" A Point Coarse Thread Bugle Head With Grabber Guard Coating Part# GTX500

Furring: Diamond Fur: DF-375 43MILS 18GA Galvanized 33KSI

6 panels were constructed each 24" x 24", three with metal studs and three with wood studs. No sheathing was used in any of the test specimens.

Studs were spaced at 16" on center. A piece of 24"x20" Eco Max ridged insulation was placed on each panel. The furring was placed on top of the Eco Max in line with the vertical framing, and fastened through the Eco Max to the vertical framing. The screws were spaced 16" apart, two screws per stud were used.

The screws used for the metal studs passed through the stud a minimum of 3 threads. The screws used for the wood studs penetrated the studs 1-3/4".

### 3.0 SHEAR LOAD TEST

Testing was conducted using a Universal Testing Machine equipped with an electronic load cell and a computerized data acquisition system. The testing lab conditions were  $73 \pm 2$  °F and  $50 \pm 3\%$  relative humidity during the test. The rate of testing was 0.10 inch/minute (2.54 mm/min.).

The panels were held rigidly in a vertical orientation and a L-shaped metal bracket was used to apply a uniform load to the two vertical Diamond Furr sections. The bracket was connected to a universal joint so that there was complete freedom of movement in all axes.

The test was terminated once the load had exceeded 510 lbs.

Note: No catastrophic failure was observed in any of the test specimens at the maximum load before the test was terminated.

Test Specimen	Metal Studs		Wood Studs	
	Max Load (lbs.)	Ext at Max Load (in.)	Max Load (lbs.)	Ext at Max Load (in.)
1	575.10	1.23	595.63	1.15
2	572.59	0.93	530.55	0.95
3	571.67	1.24	597.92	0.93
Average	573.12	1.13	574.70	1.01
Std Dev.	1.78	0.18	38.25	0.12

### 4.0 CONCLUSION

Based on testing it may be concluded that the Diamond-Furr™ metal lath attachment system by Brand X Metals will support the dead load imposed by 3/4 inch maximum thickness stucco when the system is applied over foam insulation up to 3 inches thick. This assumes the Diamond-Furr™ members are fastened with #10 screws spaced 16 inches on center to framing consisting of studs of either metal (16 gage min.) or wood (SG=0.42 min.) spaced 16 inches on center. The minimum penetration for the screws shall be 3 threads for the metal studs, or 1-3/4 inch for the wood studs. It is also assumed that 3/4 inch thick stucco weighs 12 psf.

**\*\*\*END OF REPORT\*\*\***

**5.0 PHOTOGRAPH**

Typical Test Setup

