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May 31, 2002

Engineering Report 22126-2a

Metal Fabrications of Hilton Head Island
14-inch Wide by 1 1/2-inch Tall Double Mechanical Lock Panel
Copper with 12-inch Clip Spacing
ASTM E1592 Uniform Pressure Test

SUMMARY

On May 21, 2002, testing was initiated on Metal Fabrications of Hilton Head Island Double Mechanical Lock copper roof panels to determine their loading characteristics under uniform static uplift loads. The panels were 14-inches wide with nominal 1 1/2-inch high ribs and were constructed of 16 oz., 1/2-hard copper. The panels were installed with 26 gage stainless steel two piece clips attached to support purlins on spans of 12-inches using two fasteners per clip. The panels were tested with both ends open.

The panels were tested in accordance with ASTM E1592, "Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference." The panels held a maximum one-minute interval load of 62.4 PSF. They failed while increasing to the next load when an inner seam separated.

Based on the test pressure of 62.4 PSF, the loading requirements of ASCE 7-98 "Minimum Design Loads for Buildings and Other Structures", and the assumptions in the following application, the panel will meet the requirements for 130 mph with a safety factor of 1.5 in the field zones.

Application and assumptions:

- 130 mph maximum wind speed



TECHNICAL SOCIETIES

American Concrete Institute

National Fire Protection Association

- Exposure category C
- No wind directionality issues
- Maximum mean building height of 40-feet
- Panels applied over a suitable substructure by others
- Clip spacing at 12-inches on center with same type and quantity of fasteners
- Panels applied in a hip or gable roof shape with no nearby escarpments
- Panels not applied in multispans gable, monoslope or sawtooth roof shapes

If you have any questions or need additional information, please contact us.

Respectfully submitted,



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