Loss Mitigation Grant Program
Wind Resistive Device (WRD) Product Evaluation

The product as described herein has been evaluated by the Department of Commerce and Consumer Affairs (DCCA) for compliance with the technical requirements for wind resistive devices installed in single or multi-family residential dwellings. Installation costs of approved products are partially reimbursable under the provisions of the Loss Mitigation Grant Program. The results of the product evaluation are presented in the following report.

1.0 Product Information

1.1 Product Names:

"HPS Clip", "Hurricane Clinchers" (similar)

1.2 Description:

HPS is a hurricane uplift clip manufactured under various trade names specifically for Hawaiian single wall construction but was also used for conventional double wall construction. The clip attaches to the rafter or truss and to the top plate of the wall, or for single wall construction, to a minimum 1 inch thick fascia board.

1.3 Category:

Submitted for evaluation as a WRD option 1- Roof to wall uplift restraint

1.4 Submitted By:

a. Manufacturer:

Simpson Strong-Tie Company, Inc.
4637 Chabot Dr, #200
Pleasanton, CA 94588
Phone: (925) 460-9912
Fax: (925) 847-0694

b. Local Sales Representative:

Gerald Peters
Hurricane Protection Systems, Inc.
P.O. Box 25701
Honolulu, Hawaii 96825-0701
Phone: (808) 847-4400
Fax: (808) 738-0014

2.0 Product Evaluation

2.1 Uplift Resistance:

a. The HPS connectors were tested in accordance with ICC AC13. Load is applied at a rate of 0.100 in/min until 1/8" of deflection is reached and the load recorded. Tests were conducted using a connector on one side of a rafter (1 connector) and a connector on two sides of a rafter (2 connectors). The results are summarized in table 1.

Table 1. Uplift capacity test results

No. of Connectors	Allowable Uplift Load	Required Capacity for WRD Approval	Approved
1	327 lb.	400 lb.	No
2	494 lb.	200 lb./ft.	Yes

2.2 Installation:

HPS is to be installed in accordance with the WRD technical specifications, the manufacturer's engineering drawings and this report.

The installation instructions and this report shall be strictly adhered to and a copy of these shall be available at all times on the job site during installation.

2.3 Substantiating Data:

a. Test Report on uplift capacity of HPS (One Connector), prepared by Testing Engineers, Inc., Test Report No. N221 dated November 9, 2006, Signed and Sealed by Terry L. England, P.E. (FL License No. 34132)

b. Test Report on uplift capacity of HPS (Two Connectors), prepared by Testing Engineers, Inc., Test Report No. N222 dated November 13, 2006, Signed and Sealed by Terry L. England, P.E. (FL License No. 34132)

c. Calculations for hurricane tie attaching roof rafter to single top plate wall with redwood siding and block frieze board, dated December 17, 2006, prepared by Simpson Strong-Tie

3.0 Findings

Evaluation in review of the submitted data indicates that Two HPS's as described in this report do conform to the requirements of the loss mitigation grant program and are an acceptable WRD to provide additional uplift capacity to the roof trusses or rafters for both single and double wall construction only. A single HPS is not an approved retrofit because it does not provide adequate uplift resistance.

Two HPS clips may be approved for use on rafters or trusses spaced at no more than 30 inches o.c. and having a span of 24 feet or less, or when the product of the truss spacing (ft) and truss span (ft) is no more than 60 ft^2. The uplift capacity of two HPS clips is

insufficient for WRD approval when the product of the truss spacing (ft) and truss span (ft) exceeds 60 ft^2.

No anchorage details or test results have been provided for masonry wall construction. Additional data must be submitted for WRD approved use on this construction type.

All fasteners shall be corrosion resistant, either Type 316 stainless steel or galvanized steel with a zinc coating thickness equal to or greater than 1.5 ounces of zinc per square foot of surface area per ASTM A653. Stainless steel clips or straps shall be installed with stainless steel nails or screws. Galvanized clips or straps shall be installed with ASTM A153 galvanized nails or hex drive screws.

3.1 Limitations:

a. Two HPS's qualify as an approved WRD product for use on single and double wall construction only. The HPS is not approved as a WRD device for masonry wall construction.

b. Spacing of trusses or rafters must be no more than 30 inches o.c. and the span may be no more than 24 feet, or the product of the truss spacing (ft) and truss span (ft) may not exceed 60 ft^2.

c. All clips must be corrosion resistant, either stainless steel or galvanized steel with a zinc coating.

d. HPS's must be installed in accordance with the installation instructions in this report and the WRD Technical Specifications.

Gary Y. K. Chock, S.E.
Product Examiner
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