

Richard A. Baumann, Professional Engineer

Evaluation reports are the opinion of the evaluation entity, based on the findings, and in no way constitute or imply approval by a local building authority. I, Richard A. Baumann have reviewed the data submitted by Raynor Garage Doors and in my opinion, the product, material, system, or method of construction specifically identified in this report, conforms with or is a suitable alternate to that specified in the 2007 Florida Building Code, subject to the limitations in this report.

REPORT NO.: 15

SUBMITTED: 10/25/2010

CATEGORY: Exterior Doors

SUBMITTED BY:

Raynor Garage Doors
1101 East River Road
Dixon, IL 61021

EVALUATION ENTITY:

Richard A. Baumann P.E.
698 Timber Creek Road
Dixon, IL 61021

EVALUATION TEST STANDARDS:

ANSI/DASMA 108-2005
ASTM E330-02

1. PRODUCT TRADE NAME

1.1 Wood Doors

1.1.1 Arborshore

2. SCOPE OF EVALUATION

2.1 Structural: Transverse Wind Loads

3. USES

3.1 Raynor garage doors are used as garage doors with specified allowable transverse wind pressures.

4. DESCRIPTION

4.1 **General:** Raynor garage doors listed in this report are garage doors constructed of wood, see 4.2 for specific details. The doors are reinforced horizontally with roll-formed galvanized steel sections (U-bars) see 4.1.1 or (Box Struts), see 4.1.2. The doors were tested to establish specified allowable wind loads. See Table No. 1 for allowable wind loads.

4.1.1 **U-bar Stiffeners:** Horizontal reinforcing U-shaped sections, 2-5/8" deep x 2.00" wide x 20 ga. (0.035 inch minimum) galvanized steel 80 KSI minimum tensile or 18 ga (0.049 inch minimum) galvanized steel 80 KSI minimum tensile complying with ASTM A-924 hot dipped galvanizing and ASTM A-653 steel specification.

4.1.2 **Box Struts Stiffeners:** Horizontal reinforcing U-shaped sections, 4-1/2" deep x 5.04" wide x 20 ga. (0.035 inch minimum) galvanized steel 80 KSI minimum tensile complying with ASTM A-924 hot dipped galvanizing and ASTM A-653 steel specification.

4.1.3 **Tracks:** Vertical tracks are made from 13 ga. (.086 min.) galvanized steel.

4.2 MODELS

4.2.1 **Arborshore:** Stile and rail wood construction sandwiched between two layers of 3/16" thick exterior grade stainable plywood. The cavities between rails and stiles are filled with 1" thick polystyrene insulation. The exterior plywood is covered by clear, vertical grain Western Red Cedar Overlays. The interior frame is made from Sitka Spruce and the stiles and rails are joined together using mortise and tenon and then doweled. All hardware, trussing, and track to have galvanized finish with optional powder coat finish. Steel complies with ASTM A-924 hot dipped galvanizing and ASTM A-653 steel specification. This report covers Arborshore doors up to 16'-0" wide and heights up to 10'-0". Windows are available as shown on the drawings listed in this report.

5. INSTALLATION

5.1 General: Raynor garage doors are installed in accordance with the manufacturer's published installation instructions, engineering drawings and this report. The manufacturer's published installation instructions and this report shall be strictly adhered to and a copy of these instructions shall be available at all times on the job site during installation. The information within this report governs if there are any conflicts between the manufacturer's instructions and this report.

5.2 Allowable Transverse Wind Loads: The design wind loads for the garage doors shall be determined in accordance with Section 1609 of the 2007 *Florida Building Code*® and shall not exceed the allowable transverse wind loads shown in Table No. 1.

TABLE 1

Arborshore				
SECTION WIDTH	DRAWING NUMBER			
	P-2308-A			
	DESIGN LOAD	TEST LOAD	LARGE MISSILE IMPACT RESISTANT	TEST REPORT NUMBER
UP TO 10' - 0"	31.5	47.3	NO	G493-1002-10
	- 35.1	- 52.7		

Arborshore				
SECTION WIDTH	DRAWING NUMBER			
	P-2311-A			
	DESIGN LOAD	TEST LOAD	LARGE MISSILE IMPACT RESISTANT	TEST REPORT NUMBER
UP TO 16' - 0"	29.7	44.6	NO	G-493-1002-10
	- 33.1	- 49.7		

6. SUBSTANTIATING DATA

6.1 Documentation for Arborshore:

6.1.1 Testing per ANSI/DASMA 108 / ASTM E330 was done at Hurricane Test Lab (HTL) 1701 Westfork Drive, Suite 106, Atlanta Georgia 601224. HTL is a Florida approved accredited lab. Test reports prepared by HTL and signed and sealed by Vinu J. Abraham P.E. See Table 1 for report numbers.

6.1.2 Engineering drawings, prepared by Raynor Garage Doors, reviewed, signed, sealed and dated by Richard A. Baumann, P.E. See Table 1 for drawing numbers.

6.1.4 Calculations on jamb attachment, the results are shown on drawings listed in this report.

7. CODE REFERENCES AND STANDARDS

7.1 *2007 Florida Building Code*

7.1.1 Section 1609 Wind Loads

7.1.2 Section 1714.5.3.1 ANSI/DASMA 108-05

7.1.3 Section 1714.5.3.1 ASTM E 330-02

8. REPORT SUMMARY

8.1 Upon review of the data submitted by Raynor Garage Doors, I find that, in my opinion, the models as described in this report conform with or are a suitable alternative to that specified in the above referenced sections in the Florida Building Code 2007 edition.

9. LIMITATIONS

9.1 The doors shall be installed in accordance with the manufacturer's published installation instructions in this report and the manufacturer's published installation instructions, engineering drawings and this report.

9.2 The structural elements supporting the door track brackets shall be designed by a registered professional engineer for the wind loads shown on the drawings listed in this report.

9.3 The doors shall not be installed in areas where the transverse wind loads exceed the allowable loads shown in Table 1.

9.4 Fire performance of the doors is outside the scope of this Evaluation Report.

9.5 Doors listed in this report are not large missile impact resistant and may not be installed in areas that require large missile impact resistance.

10. IDENTIFICATION

10.1 Each Raynor Garage Door covered by this report shall be labeled with the manufacturer's name and/or trademark and the number of this report for field identification.

11. FURTHER INFORMATION

11.1 For more information on this report contact Richard A. Baumann, P.E. 815/288-2261.

11.2 Richard A. Baumann F.P.E. #36469 does not have, nor intend to acquire a financial interest in Raynor Mfg. or any other company manufacturing or distributing products for which this report is being issued; Richard A. Baumann F.P.E. #36469 is not controlled by Raynor Mfg. or any other company manufacturing or distributing any portion of the product being tested, evaluated or approved by this report.

Richard A. Baumann P.E.
P.E. No. 36469
September 3, 2010