Scott A. Brown, 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, Scott A. Brown P.E. 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 to the requirements of the 6th Edition (2017) of the Florida Building Code, subject to the limitations in this report.

REPORT NO.: 26-D

SUBMITTED: 08/20/12
Revised: 04/28/15
Revised: 9/25/17
Revised:12/10/18

CATEGORY: Exterior Doors

SUBMITTED BY:
Raynor Garage Doors
1101 East River Road
Dixon, IL 61021

EVALUATION ENTITY:
Scott A. Brown P.E.
698 Timber Creek Road
Dixon, IL 61021

EVALUATION TEST STANDARDS:
ANSI/DASMA 108-2012
ANSI/DASMA 115-2012
TAS 201-94
TAS 202-94
TAS 203-94

1. PRODUCT TRADE NAME

1.1 PAN DOORS

1.1.1 BuildMark
1.1.2 TradeMark
1.1.3 SteelForm 24 ga, S24
1.1.4 SteelForm 20 ga, S20

1.2 SANDWICH DOORS

1.2.1 ThermaSeal Standard, TM175
1.2.2 TC200
1.2.3 Showcase
1.2.4 Masterpiece

1.3 ALUMINUM RAIL AND STILE DOORS

1.3.1 Alumaview, AV200
1.3.2 Styleview Wide Profile
1.3.3 Styleview Custom Profile

2. SCOPE OF EVALUATION

2.1 Structural: Transverse wind loads and impact and cyclic loads.

3. USES

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

4. MODELS

4.1.1 BuildMark: Sections shall be pan style 2" thick roll formed from 26 ga. (.017 min) hot dipped galvanized steel per ASTM A-525 and A-526. Each door section is wood grain textured with embossed panels and has tongue and-groove section joint.

4.1.2 TradeMark: Sections shall be pan style 2" thick roll formed from 24 ga. (.023 min) hot dipped galvanized steel per ASTM A-525 and A-526. Each door section is wood grain textured with embossed panels and has tongue and-groove section joint.

4.1.3 SteelForm Standard 24 Ga., also referred to as S24: Sections shall be 2" thick, roll formed from 24 ga. (.023 min.) commercial quality hot dip galvanized steel. Each door section to have two deep ribs and four pencil grooves for additional strength and a tongue and groove section joint. Alumaview sections may be added to Steelform doors as a window option.

4.1.4 SteelForm Standard 20 Ga., also referred to as S20: Sections shall be 2" thick, roll formed from 20 ga. (.035 min.) commercial quality hot dip galvanized steel. Each door section to have two deep ribs and four pencil grooves for additional strength and a tongue and groove section joint. Alumaview sections may be added to Steelform doors as a window option.

4.1.5 ThermaSeal Standard, also referred to as TM175: Sandwich-style, 1 3/4 inch thick insulated door panels with .018 inch thick galvanized steel roll-formed exterior skin and .013 thick interior skins. Exterior and interior skins have a stucco texture with .04" deep horizontal grooves. The doors are insulated with a foamed in place polyurethane foam that is chemically bonded to the interior and exterior steel skins.

4.1.6 TC200: Sandwich-style, 2 inch thick insulated door panels with .015 inch thick galvanized steel roll-formed exterior skin and .015 thick interior skins. Exterior and interior skins have a stucco texture with .04" deep horizontal grooves. The doors are insulated with expanded polystyrene foam that is bonded to the interior and exterior steel skins.

4.1.7 Decade Showcase, also referred to as Showcase: Sections shall be sandwich-style, 2 inch thick insulated door panels with tongue-and-groove section joint made from minimum 0.015 inch thick galvanized steel roll-formed interior and exterior skins with embossed panels and wood grain texture. The doors are insulated with expanded polystyrene foam that is bonded to the interior and exterior steel skins.

4.1.8 Masterpiece: Same as Showcase except for painted hardware.

4.1.9 AlumaView, also referred to as AV200: Sections shall be 1-15/16" thick 6063T6 aluminum alloy frame with impact resistant panels or impact resistant glass. Adhesive is used to attach the glazing channel to the panel and/or glass. An aluminum glazing retainer is screwed around the perimeter of the panel or glass securing it to the section. Alumaview Optima is a commercial type door.

4.1.10 Styleview Wide Profile: Same as Alumaview Optima except Styleview Wide Profile is a residential type door.

4.1.11 Styleview Custom Profile: Same as Alumaview Optima except Styleview Custom Profile is a residential type door with more panel options like; Custom Carriage House and Custom Mixed Panels.

5. REINFORCING

5.1 General: Raynor garage doors sections listed in this report shall be reinforced horizontally with roll-formed galvanized steel U-bars, see 5.1.1.

5.1.1 U-bar: Horizontal reinforcing U-shaped sections, 2-5/8"" deep x 2" wide x 18 ga. (.049 inch minimum) or 20 ga. (.035 inch minimum) galvanized steel, 80 KSI minimum tensile.

5.1.2 Removable Post: Square Galvanized Tube, 1 ¾" x 1 ¾" x 12 ga (0.105 inch minimum). The posts are stored on a wall in the garage close to the garage door and attached to the door vertically when high winds warnings are issued. The posts are anchored to the floor with a ½" diameter x 3 ½" long pin. The top of the posts has a ½" diameter x 8" long carriage bolt which engages a bracket that is attached to the header with (4) 5/16" x 1 ¾" long lag screws. The post is attached to the door with u-shaped straps which attach to a bracket on the door with a 5/16" x 2 ½" clevis pin and hairpin cotter pin. A wind loaded door with a Removable post system also incorporates u-bar trussing.

6. INSTALLATION

6.1 General: Raynor garage doors are to be 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.

7. ALLOWABLE WIND LOADS:

The doors shown in Table 1 were tested to ANSI/DASMA 108 for static air pressure. The doors shown in Table 2 were tested to ANSI/DASMA 108 and TAS 202 for static air pressure and ANSI/DASMA 115 and TAS 201 and TAS 203 for impact and cyclic loading.

Table 1

DOOR MODEL(S)	MAXIMUM DOOR WIDTH	DRAWING NUMBER	DESIGN LOAD	LARGE MISSILE IMPACT RESISTANT	TEST REPORT NUMBER	TEST DATE
SHOWCASE/ MASTERPIECE	10' - 0"	P-1339-G	+29.0 -32.5	NO	1556	7/26/12
SHOWCASE	18' - 0"	P-2418-B	+18.0 -20.0	NO	1568	10/23/12
ROCKCREEKE	10' - 0"	P-2306-B	+31.0 -35.0	NO	1557	8/16/12
ROCKCREEKE	18' - 0"	P-2307-B	+29.7 -33.1	NO	1551	8/16/12
ALUMAVIEW/ STYLEVIEW	14' - 2"	P-2410-B	+25.5 -28.5	NO	1549	6/28/12
ALUMAVIEW/ STYLEVIEW	14' - 2"	P-2411-B	+14.2 -15.8	NO	1550	6/29/12
ALUMAVIEW/ STYLEVIEW	10' - 2"	P-2412-B	+34.0 -38.5	NO	1552	7/16/12
ALUMAVIEW OPTIMA	16' - 2"	P-2420-B	+27.5 -34.7	NO	1564	9/26/12
TC200	10' - 2"	P-2413-B	+30.0 -34.0	NO	1553	7/18/12
THERMASEAL STANDARD	10' - 2"	P-2414-B	+30.0 -34.0	NO	1554	7/20/12
THERMASEAL STANDARD	10' - 2"	P-2415-B	+13.3 -13.3	NO	1555	7/23/12
BUILDMARK S	16' - 0"	P-2416-B	+29.3 -32.6	NO	1565	10/4/12
BUILDMARK S	16' - 0"	P-2419-A	+29.3 -32.6	NO	1566	10/9/12
BUILDMARK S	18' - 0"	P-2417-B	+16.0 +18.0	NO	1567	10/18/12
BUILDMARK S	16' - 0"	P-2368-A	+23.3 -28.0	NO	1857	11/13/18
BUILDMARK S	16' - 0"	P-2369-A	+29.7 -33.1	NO	1859	12/5/18

Table 2

DOOR MODEL(S)	MAXIMUM DOOR WIDTH	DRAWING NUMBER	DESIGN LOAD	LARGE MISSILE IMPACT RESISTANT	TEST REPORT NUMBER	TEST DATE
STEELFORM 24 GA STEELFORM 20 GA	14' - 2"	P-3320-C	+44.0 +48.5	YES	1498 (Static) 1499 (Impact)	05/26/11 05/27/11

8. SUBSTANTIATING DATA

8.1 Test Reports: Testing for doors shown in Table 1 was done at Raynor Garage Doors test lab in Dixon Illinois which was accredited by ANSI-ASQ National Accreditation Board (ANAB) at the time of testing, scope of accreditation can be found at www.anab.org. Testing was witnessed by an independent third party Florida Registered Professional Engineer, Scott A. Brown P.E. Test reports were prepared by the test lab and signed and sealed by the witnessing Florida PE. See Table 1 and 2 for report numbers and test dates.

8.2 Engineering Drawings: Drawings were prepared by Raynor Garage Doors under the direction of Scott A. Brown P.E. and then reviewed, signed, sealed and dated by Scott A. Brown, P.E. See Table 1 and 2 for drawing numbers.

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

9. REPORT SUMMARY

9.1 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 Florida Building Code, subject to the limitations in this report.

10. LIMITATIONS

10.1 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.

10.2 The structural elements supporting the door track brackets shall be designed by others for the wind loads shown on the drawings listed in this evaluation.

10.3 The doors shall not be installed in areas where the transverse wind loads exceed the allowable loads shown in Table 1 and Table 2.

10.4 Doors listed in this report do not address the requirements of the High Velocity Hurricane Zone (HVHZ).

11. IDENTIFICATION

11.1 Each Raynor Garage Door covered by this report shall be labeled with the manufacturer's name, drawing number and Florida approval number for field identification.

12. FURTHER INFORMATION

12.1 For more information on this report contact Scott A. Brown, P.E. 815/288-2261.

12.2 Scott A. Brown F.P.E. #65940 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; Scott A. Brown F.P.E. #65940 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.

Scott A. Brown P.E.
F.P.E. No. 65940
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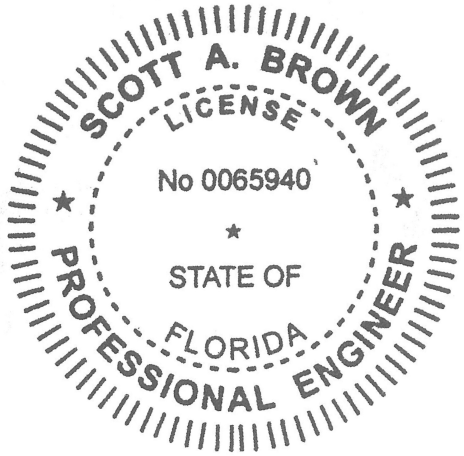
December 10, 2018



Digitally signed by Scott A Brown, PE
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