

## **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 8<sup>th</sup> Edition (2023) of the Florida Building Code, subject to the limitations in this report.

**Report No.:** 42-B

**Submitted:** 06/20/23

Revised: 08/01/23

**Category:** Exterior Doors

### **Submitted By:**

Raynor Garage Doors  
1101 East River Road  
Dixon, IL 61021

### **Evaluation Entity:**

Scott Brown P.E.  
809 E. 2<sup>nd</sup> Street  
Dixon IL, 61021

### **Evaluation Test Standards:**

TAS 202-94  
TAS 201-94/203-94

## **1. Product Trade Name**

### **1.1 Sandwich Doors**

- 1.1.1 Encore (EN200)
- 1.1.2 Commercial Encore (EN200C)
- 1.1.3 Raynor EnergyCore (EC200)
- 1.1.4 Raynor EnergyCore (EC224)

## **2. Scope of Evaluation**

- 2.1 **Structural:** Transverse wind and impact/cyclic loads.

## **3. Uses**

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

## 4. Models

**4.1 Encore (EN200):** 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 exterior skins and .015-inch-thick interior skins with a texture. The doors are insulated with expanded polystyrene foam that is bonded to the interior and exterior steel skins. Maximum door height is 10'-0".

**4.2 Commercial Encore:** Same as Encore with a maximum door height of 18'-0".

**4.3 Raynor EnergyCore (EC200):** 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 exterior skins and .015-inch-thick interior skins with a texture. The doors are insulated with expanded polystyrene foam that is bonded to the interior and exterior steel skins. Maximum door height is 18'-0".

**4.4 Raynor EnergyCore (EC224):** Same as EC200 except for the exterior skin is 0.022-inch-thick galvanized roll-formed steel.

## 5. Reinforcing

**5.1 General:** Raynor garage doors sections listed in this report shall be reinforced horizontally with roll-formed galvanized steel box struts.

**5.1.1 Box Strut:** Horizontal reinforcing U-shaped sections, 4-1/2" deep x 5.04" wide x 20 ga. (0.035 inch minimum) or 18 ga. (0.049 inch minimum) galvanized steel, 80 KSI minimum tensile.

## 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

**7.1 General:** The doors shown in Table 1 were tested to TAS 202-94 and TAS 201-94/203-94.

**Table 1**

Door Model	Tested Width	Center Hinges per Sect.	Drawing Number	Design Loads (psf)		Test Report Number	Test Location	Test Dates
EN200, EN200C, EC200, EC224	9'-2"	1	P-3352	65.0	-72.0	SV30712-20230713	UL	5/15/23 - 5/17/23
	16'-2"	3	P-3350	45.0	-52.0	P7035.01-201-18	Intertek	3/21/23 - 3/23/23
	18'-2"	3	P-3350	40.0	-46.0	SV30712-20230707	UL	4/24/23 - 4/27/23

## 8. Additional Data

**8.1 Forced Entry:** The doors shown in Table 1 meet the forced entry requirements. Test data is included in the listed reports.

**8.2 Tensile Test:** The doors shown in Table 1 were tensile tested per ASTM E8. Test data is included in the listed reports.

**8.3 Salt Spray Test:** Samples of the painted steel used in the manufacture of all door models listed in Table 1 were subject to 1000 hours of salt spray testing compared to a control sample of G90 galvanized bare steel. Testing was conducted at Raynor Garage Door's manufacturing facility and laboratory in Dixon, IL, under the observation of Scott A. Brown, P.E. Tested samples met or exceeded the corrosion resistance of the G90 steel samples.

**8.4 Insulation Flame Spread:** Per ASTM E84, the foamed plastic core of the doors shown in Table 1 were tested for flame spread and smoke development. The results were less than the target of 75FSI and 450SDI.

**8.4 Insulation Ignition Temperature:** Per ASTM D1929, the foamed plastic core of the doors shown in Table 1 were tested for ignition temperature. The result was 880 F.

**8.6 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 for drawing numbers.

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

## 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 evaluation.

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

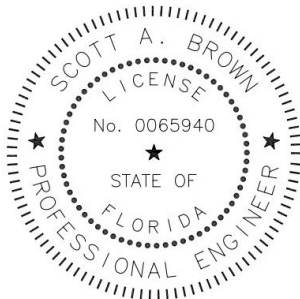
**9.4** The doors listed in this report have been evaluated for use in the Florida High Velocity Hurricane Zone (HVHZ).

## 10. Identification

10.1 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.

## 11. Further Information

11.1 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.



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Structural Adequacy for Wind Load

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