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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. Apex Technology, in review of the data submitted, finds that, in their 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 Florida Building Code, SUBJECT TO THE LIMITATIONS IN THIS REPORT

Apex Technology has reviewed the data submitted for compliance with the Florida Building Code. Apex Technology is not responsible for any errors or omissions to any documents, calculations, drawings, specifications, tests, or summaries prepared and submitted by the design professional or preparer of record who are listed in the Substantiating Data section of this report.

REPORT NO.: WD200301

EXPIRES: November 1st, 2005

CATEGORY: Doors and Windows

SUBMITTED BY:

Wayne Dalton Corporation
3395 Addison Drive
Pensacola, FL 32514

1. PRODUCT NAME

- Model 8000 Garage Door
- Model 8100 Garage Door
- Model 9100 Garage Door
- Model 9600 Garage Door
- Model 9900 Garage Door

2. SCOPE OF EVALUATION

Structural Transverse Wind Loads

3. USES

Model 8000/8100 and the Model 9100/ 9600/ 9900 garage doors are used as residential garage doors with specified allowable wind pressures.

4. DESCRIPTION

General:

The Model 8000/ 8100 are sectional overhead garage doors and are constructed of galvanized steel sections with a two coat polyester finish. The doors are two-inch thick raised panel doors with tongue and groove sections. They are the same door with one exception. The Model 8000 is non-insulated, and the Model 8100 is insulated with 9/16-inch thick expanded polystyrene.

The Model 9100/ 9600/ 9900 doors are sectional overhead garage doors and are constructed of galvanized steel sections with a two coat polyester finish. The doors are insulated with a foamed in place polyurethane foam that is chemically bonded to the steel sections. They are embossed with raised panel wood grain texture and have a flexible bulb shaped bottom seal. The hinges are factory installed low profile hinges.

Model 8000

Model 8000 series garage doors are constructed of 26 gage ASTM A653-00 Forming Steel FS Type B, minimum yield of 33 ksi, with a finish equal to ASTM A525 made up of G-30 finish, covered with two coats of polyester paint with 16 or 20 gage end stiles and 20 gage steel center stile.

Model 8100

Model 8100 series garage doors are constructed of 26 gage ASTM A653-00 Forming Steel FS Type B, minimum yield of 33 ksi, with a finish equal to ASTM A525 made up of G-30 finish, covered with two coats of polyester paint with 16 or 20 gage end stiles and 20 gage steel center stiles. The model 8100 is insulated with a 9/16-inch thick expanded polystyrene board.

Model 9100

Model 9100 garage doors are constructed of ASTM A653-00 Forming Steel CS Type B, minimum yield of 33 ksi, and poly backer, with a finish equal to ASTM A525 made up G-30 finish, covered with two coats of polyester paint with 20 gage end caps. The panels are insulated with a foamed in place polyurethane foam that is chemically bonded to each steel section to provide a composite section for added strength of the garage door panels.

Model 9600

Model 9600 garage doors are constructed of G60 Facer and .008 G40 Backer ASTM A653-00 Forming Steel CS Type B, minimum yield of 33 ksi, with a finish equal to ASTM A525 made up G-30 finish, covered with two coats of polyester paint with 20 gage end caps. The panels are insulated with a foamed in place polyurethane foam that is chemically bonded to each steel section to provide a composite section for added strength of the garage door panels.

Model 9900

Model 9900 garage doors are constructed of G60 Facer and .008 G40 Backer ASTM A653-00 Forming Steel CS Type B, minimum yield of 33 ksi, with a finish equal to ASTM A525 made up G-30 finish, covered with two coats of polyester paint with 20 gage end caps. The panels are insulated with a foamed in place polyurethane foam that is chemically bonded to each steel section to provide a composite section for added strength of the garage door panels.

Wind Loads

The Model 8000/ 8100 and 9100/ 9600/9900 were subjected to transverse load testing under ASTM E-330 and DASMA 0108. Allowable transverse wind loads are given in Table 1.

Model 8000/ 8100 garage doors are braced on the inside of the doors with 2 inch U-bars running horizontally on each sectional panel and/or windload posts. Each series has several models with different configuration of U-bars and windload posts depending on the amount of windload resistance required. Each U-bar is made of 20 gage ASTM A653-00 Steel, minimum yield of 80 ksi with a finish equal to ASTM A525 made up of G-30 finish. Each windload post is made up of (2) 3" Gage welded U-Bars, ASTM A653-00 Steel, min. yield of 80 KSI, with a finish equal to ASTM A525 made up of G-30 finish.

The 9100/9600/9900 garage doors are braced with windload posts. Each series has several models with different configuration of windload posts depending on the amount of windload resistance required. Each windload post is made up of two (2) three-inch Gage welded U-Bars, ASTM A653-00 Steel, min. yield of 80 KSI, with a finish equal to ASTM A525 made up of G-30 finish.

Door Track

The Model 8000/ 8100 and Model 9100/ 9600/9900 garage door tracks are made from 18 and 17 gage steel, with a G-40 galvanized steel coating.

5. INSTALLATION

General

The Model 8000/ 8100 and Model 9100/ 9600/9900 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 instructions within this report govern if there are any conflicts between the manufacturer's instructions and this report.

Allowable Transverse Wind Loads

The Design wind loads on the garage doors shall be determined in accordance with chapter 1606 of the Florida Building Code, and shall not exceed the allowable transverse wind loads shown in Table 1.

Table 1
Allowable Transverse Wind Loads

Model	Max Door Width (Ft-In)	Max Door Height (Ft-In)	Design Load		Reinforcements
			Positive (psf)	Negative (psf)	
8000/8100-0105	9-0	14-0	36.7	36.7	U-bars
8000/8100-0218	16-0	14-0	16	17	U-bars
8000/8100-0134	18-0	14-0	18.5	20.5	U-bars
8000/8100-0304	9-0	8-0	31	36	U-bars and Wind Load Posts
8000/8100-0305	9-0	8-0	46	52	U-bars and Wind Load Posts
8000/8100-0223	16-0	8-0	22	24.6	U-bars and Wind Load Posts
8000/8100-0219	16-0	8-0	40	44.5	U-bars and Wind Load Posts
8000/8100-0303	18-0	8-0	34.4	38.3	U-bars and Wind Load Posts
9100/9600/9900-0220	9-0	8-0	26.7	30.2	Wind Load Posts
9100/9600/9900-0226	9-0	8-0	46	52	Wind Load Posts
9100/9600/9900-0221	18-0	8-0	22	24.6	Wind Load Posts
9100/9600/9900-0300	18-0	8-0	31	33.1	Wind Load Posts
9100/9600/9900-0301	18-0	8-0	40	44.5	Wind Load Posts

6. SUBSTANTIATING DATA

Test reports on transverse wind load under ASTM E330 and DASMA 108 for model 8000/8100-garage doors, as prepared by Wayne Dalton Corporation, are as follows:

- Report No. 0105 signed by W.S. Wilson, P.E.
- Report No. 0218 signed by W.S. Wilson, P.E.
- Report No. 0134 signed by W.S. Wilson, P.E.
- Report No. 0304 signed by W.S. Wilson, P.E.
- Report No. 0305 signed by W.S. Wilson, P.E.
- Report No. 0223 signed by W.S. Wilson, P.E.
- Report No. 0219 signed by W.S. Wilson, P.E.
- Report No. 0303 signed by W.S. Wilson, P.E.

Test reports on transverse wind load under ASTM E330 and DASMA 108 for model 9100/9600/9900 garage doors, as prepared by Wayne Dalton Corporation, are as follows:

- Report No. 0220 signed by W.S. Wilson, P.E.
- Report No. 0226 signed by W.S. Wilson, P.E.
- Report No. 0221 signed by W.S. Wilson, P.E.
- Report No. 0300 signed by W.S. Wilson, P.E.
- Report No. 0301 signed by W.S. Wilson, P.E.

7. CODE REFERENCES

Florida Building Code 2001 Edition

- Section 103.7 Alternate Materials and Methods
- Section 1606 Wind Loads
- Chapter 17 Structural Tests and Inspections
- 1707.4 Exterior Window and Door Assemblies
- Chapter 22 Steel
- Section 2204 Cold Formed Steel Construction
- Chapter 26 Foam Plastic

8. REPORT SUMMARY

Upon review of the data submitted by Wayne Dalton, Apex Technology finds that, in their opinion, the Model 8000/ 8100 and Model 9100/ 9600/9900 as described in this report conform with or are a suitable alternative to that specified in the Florida Building Code 2001 edition.

9. LIMITATIONS

This evaluation report and the installation instructions, when required by the building official, shall be submitted at the time of permit application

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

A registered professional engineer shall design the structural elements supporting the door track brackets for the wind loads shown on the drawings. The calculations shall be signed, sealed, and dated, and submitted to the local building official when applying for a permit.

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

The glazed panel performance of the Model 8000/ 8100 and Model 9100/ 9600/9900 garage doors is outside the scope of this report.

The Model 8000/ 8100 and Model 9100/ 9600/9900 garage doors can only be used in one and two family dwellings

The Model 8000/ 8100 and Model 9100/ 9600/9900 garage doors have not been evaluated with the ventilation louvers installed.

10. IDENTIFICATION

Each Model 8000/ 8100 and Model 9100/ 9600/9900 garage doors 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. PERIOD OF ISSUANCE

The content of this report expires on November 1, 2005. For information on this report, contact Jeffrey P. Arneson, P.E. 904/821-5200



Jax Apex Technology, Inc.
Jeffrey P. Arneson, P.E.
P.E. No. 58544
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