February 29, 2024

Evaluation Report for Clopay Corporation Sectional Garage Doors

I have evaluated the wind load door designs as shown on the drawings listed below. I have reviewed the test reports, which were generated by accredited laboratories as required by the relevant Florida Administrative Rule, the engineering rational analysis, and the product drawings. The test reports are listed below. Assembly testing was conducted by American Test Lab North Carolina and CBPC-ATC. Component testing was conducted by HETI and ETC.

For the doors listed in Tables 1 through 9, Static Pressure Tests were conducted in accordance with ASTM-E330-2002 and/or ANSI/DASMA 108-2005. The pressures listed on the drawings are either direct results of these tests or results obtained through engineering rational analysis based on actual tests. I have concluded that the sectional garage door designs listed below in Tables 1 through 7 are in compliance with these test requirements of the Florida Building Code.

TABLE 1: Drawings for doors with Manufacturing Product Code (MPC) PAN-2F151:
101308-Rev15, max. door size 16'0" x 16'0"; +20/-20 PSF (design load)
101711-Rev18, max. door size 16'0" x 16'0"; +24/-24.5 PSF (design load)
104677-Rev01, max. door size 9’0” x 16’0”, +20/-21 PSF (design load)
300159-B-Rev18, max. door size 9’0” x 16’0”, +25/-32 PSF (design load)

TABLE 2: Drawings for doors with MPC DSIE-1A171:
101655-Rev15, max. door size 9’0” x 16’0”, +20/-21 PSF (design load)

TABLE 3: Drawings for doors with MPC W-1G899:
104699-Rev01, max. door size 9’0” x 12’0”, +45/-50 PSF (design load)
104700-Rev01, max. door size 10’0” x 12’0”, +36.5/-40.5 PSF (design load)

TABLE 4: Drawings for doors with MPC PAN-2F153 and PAN-2F156:
104698-B-Rev01, max. door size 16’0” x 16’0”, +28/-30.5 PSF (design load)

TABLE 5: Drawings for doors with MPC DSIU-1A171:
104947-Rev02, max. door size 9'0" x 16'0"; +25/-28 PSF (design load)
104704-Rev02, max. door size 16'0" x 16'0"; +24/-26.5 PSF (design load)
104887-Rev02, max. door size 18'0" x 16'0"; +24/-26 PSF (design load)
104866-B-Rev04, max. door size 9'0" x 16'0"; +33/-37 PSF (design load)
104723-B-Rev05, max. door size 16'0" x 16'0"; +32/-32 PSF (design load)

TABLE 6: Drawings for doors with MPC DSIE-1F171:
101526-B-Rev22, max. door size 9'0" x 16'0"; +38/-44 PSF (design load)

TABLE 7: Drawings for doors with MPC DSIEO-1M479 and DSIUO-1M479:
104471-Rev02, max. door size 9’0” x 16’0”, +28.0/-29.0 PSF (design load)
104472-Rev02, max. door size 16’0” x 16’0”, +25.5/-25.5 PSF (design load)
104473-Rev01, max. door size 18’0” x 16’0”, +25.0/-25.0 PSF (design load)

TABLE 8:
Drawings for doors with Manufacturing Product Code (MPC) PAN-1E151:
106036-Rev00, max. door size 16'0" x 16'0"; +20/-21 PSF (design load)
106037-Rev00, max. door size 16'0" x 16'0"; +24/-24.5 PSF (design load)
106038-Rev00, max. door size 16'0" x 16'0"; +30/-30 PSF (design load)
106039-Rev00, max. door size 16'0" x 16'0"; +28/-30.5 PSF (design load)

TABLE 9:
Drawings for doors with Manufacturing Product Code (MPC) DSIEO-1F479:
103046-Rev09, max. door size 16'0" x 16'0"; +24/-24.5 PSF (design load)

For the doors listed in Tables 10 through 12, Static Pressure Tests were conducted in accordance with ASTM E330-2002 and/or ANSI/DASMA 108-2005. Missile Impact and Cyclic Pressure Tests were conducted in accordance with ANSI/DASMA 115-2005. The pressures listed on the drawings are either direct results of these tests or results obtained through engineering rational analysis based on actual tests. I have concluded that the door designs listed below in Tables 8 through 10 are in compliance with these test requirements of the Florida Building Code and therefore are qualified as impact-resistant assemblies (large missile impact).

TABLE 10: Drawings for doors with MPC PAN-2F153 and PAN-2F156:
104698-A-Rev01, max. door size 16’0” x 16’0”, +28/-30.5 PSF (design load)

TABLE 11: Drawings for doors with MPC DSIU-1A171:
104866-A-Rev04, max. door size 9'0" x 16'0"; +33/-37 PSF (design load)
104723-A-Rev05, max. door size 16'0" x 16'0"; +32/-32 PSF (design load)

TABLE 12: Drawings for doors with MPC PAN-2F151:
300159-A-Rev18, max. door size 9’0” x 16’0”, +25/-32 PSF (design load)

For the doors listed in Tables 13 through 14, Static Pressure Tests were conducted in accordance with TAS 202-1994, ASTM-E330-2002 and ANSI/DASMA 108-2005. Missile Impact and Cyclic Pressure Tests were conducted in accordance with TAS 201-1994 and TAS 203-1994 and ASTM E1886-2005 and ASTM E1996-2009 and ANSI/DASMA 115-2005. The pressures listed on the drawings are either direct results of these tests or results obtained through engineering rational analysis based on actual tests. I have concluded that the door designs listed below in Tables 11 through 12 are in compliance with these High Velocity Hurricane Zone test requirements of the Florida Building Code and therefore are qualified as impact-resistant assemblies (large missile impact).

TABLE 13: Drawings for doors with MPC DSIE-1F171:
101526-A-Rev22, max. door size 9'0" x 16'0"; +38/-44 PSF (design load)

TABLE 14: Drawings for doors with MPC PAN-2F443:
104121-Rev06, max. door size 9'0" x 16'0"; +50/-58 PSF (design load)

Test Reports:
The following test reports are based on testing conducted by American Test Lab at their North Carolina Facility: ATL-0517.01-10 (6/25/10), 1206.01-12 (1/23/13), 0312.01-13 (5/1/13), 1217.01-14 (1/28/15), 0106.01-15 (1/28/15) 1024.01-11 (10/24/11). These reports document compliance with the impact/cyclic and/or TAS testing standards and are signed and sealed by David Johnson, FL PE 61915.

The following test reports are based on testing conducted by Clopay Corporation at their Mason testing facility (accredited by ANAB for ASTM E330 and ANSI/DASMA 108 testing): CBPC-ATC 12-002 (3/2/12), 12-004 (3/13/12), 12-005 (3/21/12), 12-006 (3/26/12), 14-003 (1/30/14), 14-002 (1/20/14), 14-005 (3/12/14), 14-004 & 004A (2/11/14), 14-009 (4/16/14), 14-030 (11/9/14), 16-010 (8/1/16), 16-017 (11/2/16), 22-012 (3/31/22), ATC 24-001 (1/22/12), ATC 24-004 (1/22/24), ATC 24-005 (1/22/24), ATC 24-007 (2/20/24), ATC 24-008 (2/20/24), ATC 24-009 (2/20/24), ATC 24-010 (2/21/24).

Product Description for doors with MPC PAN-2F151:
These doors consist of 2” thick steel pan doors with min. 25 ga. (0.019”) outer skins. The steel skin is at least G40 DDS per ASTM A653. The maximum section height is 21”. The sections may have EPS foam insulation inserted in the pan cavity. These doors may have optional Impact-Resistant Glazing. Optional Impact-Resistant Glazing is a one-piece injection-molded front frame and glazing. The following models are at least structurally equivalent to the tested door: 84A, 94, 94V, 73, 75, 1500, 190, 76, 76V, 4RST, 4F, 4RSF, 6RST, 6RSF, 2RST, 48, 48B, 42, 42B, 55, 55S, GD5S, GD5SV, GR5S, GR5SV, AR5S, AR5SV, ED5S, ED5SV. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIE-1A171:
These doors consist of 1-3/8” double-skin insulated sections with an EPS core laminated to both skins. Outer skins are min. 27 ga. (0.016”) G40 DDS per ASTM A653. The maximum section height is 21”. The following models are at least structurally equivalent to the tested door: 2050, 4050, 2051, 4051, 2053, 4053, 62, 62G, 62LG, 6130, 65, 65G, 6131, 64, 64G, 6133, 135, SDP38, 136, SFL38, 134, SRP38. Not all models may be shown on a given drawing.

Product Description for doors with MPC W-1G899:
These doors consist of a base 2-3/16” wood laminated section with decorative stile overlays where the face and interior panels are laminated to EPS foam insulation in an internal hemlock frame. The maximum section height is 28”. The following models are at least structurally equivalent to the tested door: CRDnnn, CR800, MR800, CH900. Note that ‘nnn’ represents the design and material of the panel and door. Not all models may be shown on a given drawing.

Product Description for doors with MPC PAN-2F153:
These doors consist of 2” thick steel pan doors with min. 25 ga. (0.019”) outer skins. The steel skin is at least G40 DDS per ASTM A653. The maximum section height is 21”. The sections may have EPS foam insulation inserted in the pan cavity. These doors may have optional Impact-Resistant Glazing (molded). Optional Impact-Resistant Glazing is a one-piece injection-molded front frame and glazing. The following models

are at least structurally equivalent to the tested door: 84A, 94, 73, 75, 1500, 190, 4RST, 4F, 4RSF, 6RST, 6RSF, 48, 48B, 42, 42B, 55, 55S, GD5S, GD5SV, GR5S, GR5SV, AR5S, AR5SV, ED5S, ED5SV. Not all models may be shown on a given drawing.

Product Description for doors with MPC PAN-2F156:

These doors consist of 2" thick steel pan doors with min. 25 ga. (0.019") outer skins. The steel skin is at least G40 DDS per ASTM A653. The maximum section height is 21". The sections may have EPS foam insulation inserted in the pan cavity. These doors may have optional Impact-Resistant Glazing (molded). Optional Impact-Resistant Glazing is a one-piece injection-molded front frame and glazing. The following models are at least structurally equivalent to the tested door: 76, 76V, 2RST. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIU-1A171:

These doors consist of 1-3/8" double-skin insulated sections with a PUR core laminated to both skins. Outer skins are min. 27 ga. (0.016") G40 DDS per ASTM A653. The maximum section height is 21". These doors may have optional Impact-Resistant Glazing (Aluminum). Optional Impact-Resistant Glazing is an aluminum front frame and a separate polycarbonate glazing. The following models are at least structurally equivalent to the tested door: 9130, 9131, 9133, HDP13, HDPF13, HDPL13, 7130, 7131, 7133, 8130, 8131, 8133. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIE-1F171:

These doors consist of 2" double-skin insulated sections with an EPS core laminated to both skins. Outer skins are min. 27 ga. (0.016") G40 DDS per ASTM A653. The maximum section height is 21". These doors may have optional Impact-Resistant Glazing (molded). Optional Impact-Resistant Glazing is a one-piece injection-molded front frame and glazing. The following models are at least structurally equivalent to the tested door: 4300, 4301, 4310, HDG, HDGL, HDGF, 66, 66G, 67, 67G, 68, SP200, SF200, SE200, 6200, 6201, 6203. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIEO-1F479:

These doors consist of a base 1-3/8" double-skin insulated section with an EPS core laminated to both skins. Decorative overlays are attached to the exterior skin, adding not more than 5/8" to the total thickness. Both inner and outer skins are min. 27 ga. (0.016") G40 CS Type B per ASTM A653. The maximum section height is 24". The following models are at least structurally equivalent to the tested door: CDnn, CFnn, CED1nn, CEF1nn, ADnn, MEF1nn, SFnn, SEF1nn. Note that 'nn' represents the arrangement of the decorative overlays. Not all models may be shown on a given drawing.

Product Description for doors with MPC PAN-2F443:

These doors consist of 2" thick steel pan doors with min. 24 ga. (0.022") outer skins. The steel skin is at least G40 per ASTM A653. The maximum section height is 24". The sections may have EPS foam insulation inserted into the pan cavity. These doors may have optional Impact-Resistant Glazing (Aluminum). Optional Impact-Resistant Glazing is an aluminum front frame and a separate polycarbonate glazing.

The following models are at least structurally equivalent to the tested door: G4S, GS4, GD4S, GR4S, G4SV, GS4V, GD4SV, GR4SV, E4S, ED4S, E4SV, ED4SV, MR4S, SS4, AR4S, MR4SV, SS4V, AR4SV. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIUE-M479:

These doors consist of 2" double-skin insulated sections an EPS core laminated to both skins. Both inner and outer skins are min. 27 ga. (0.016") G40 DDS per ASTM A653. The maximum section height is 24". The following "Coachman" models are at least structurally equivalent to the tested door: Coachman CGnn CXnn, Settlers SXnn, Affinity AGnn. Note that 'nn' represents the arrangement of the decorative overlays. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIUO-M479:

These doors consist of 2" double-skin insulated sections with polyurethane insulation foamed in place between both skins. Both inner and outer skins are min. 27 ga. (0.016") G40 DDS per ASTM A653. The maximum section height is 24". The following "Coachman" models are at least structurally equivalent to the tested door: Coachman CGUnn CXUnn, Settlers SXUnn, Affinity AGUnn. Note that 'nn' represents the arrangement of the decorative overlays. Not all models may be shown on a given drawing.

Impact Resistant Glazing (Aluminum):

The optional impact resistant glazing is an aluminum front frame and a separate polycarbonate glazing that is an approved C1 plastic in accordance with testing required by FBC-B 2606 and complies with FBC-B 2615 testing requirements. Approved polycarbonate materials are Sabic IP Lexan 9034 (versions also approved: MR10, 9030, 90318, 90316, 90317, 90311, 90314, 90355) and Bayer Makrolon GP (versions also approved: SL, AR, 15). Approval based on review of NOA 13-0717.01 (Sabic) and NOA 12-0605.05 (Bayer) and manufacturer's product datasheets.

Impact Resistant Glazing (Molded):

The optional impact resistant glazing is an injection-molded polycarbonate front frame and glazing (LEXAN SLX2432T) that is an approved C1 plastic in accordance with testing required by FBC-B 2606. FBC-B 2615 compliance based on review of the following tests:
HETI-06-A002 ASTM G155; HETI-06-T566 ASTM D638 (before); HETI-06-T634 ASTM D638 (after); ETC-06-1024-17496.0 ASTM D2843, ASTM D635, ASTM D1929.

Limitations:

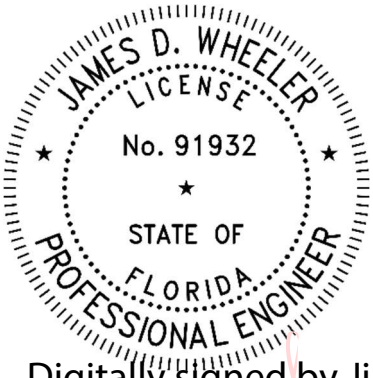
The drawing(s) cited above are an explicit part of this evaluation report. The text of this report does not attempt to address all design details and relies on the illustrations and text of these drawings as well.

Jambs, lintels, sills or other structural elements required to prepare openings are not covered. The design of the supporting structural elements shall be the responsibility of the professional of record for the building or structure and in accordance with current building codes for the loads listed on the drawing(s) referenced above.

Installation requirements per the relevant Florida Administrative Rule, including attachments, are detailed on the drawing(s) listed above. Installation must be in

accordance with manufacturer's installation instructions and must be as shown on the drawing(s) listed above. The manufacturer's licensed design professional listed on the drawing(s) has reviewed the attachment details and installation requirements.

Signature:



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