

December 19, 2014 (Revised 8/5/20)

## 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.

For the doors listed in Tables 1 through 3, Static Pressure Tests were conducted in accordance with TAS 202-1994, ASTM-E330-2002 and ANSI/DASMA 108-2005/2012. 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 115-2005/2012. 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 3 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 1: Drawings for doors with Manufacturing Product Code (MPC) DSIE-1F471:**

103954-A-Rev06,	max. door size 9'0" x 16'0";	+38/-44 PSF (design load)
104785-A-Rev04,	max. door size 16'2" x 16'0";	+38/-42 PSF (design load)
104810-A-Rev05,	max. door size 18'2" x 16'0";	+38/-42 PSF (design load)
104119-Rev05,	max. door size 9'0" x 16'0";	+54/-60 PSF (design load)
104786-Rev06,	max. door size 16'2" x 16'0";	+46/-52 PSF (design load)

**TABLE 2: Drawings for doors with Manufacturing Product Code (MPC) DSIU-1F471:**

104432-A-Rev06,	max. door size 9'0" x 16'0";	+38/-44 PSF (design load)
104820-A-Rev04,	max. door size 16'2" x 16'0";	+38/-42 PSF (design load)
104821-A-Rev05,	max. door size 18'2" x 16'0";	+38/-42 PSF (design load)
104435-Rev06,	max. door size 9'0" x 16'0";	+54/-60 PSF (design load)
104822-Rev05,	max. door size 16'2" x 16'0";	+46/-52 PSF (design load)
104428-A-Rev03,	max. door size 9'0" x 16'0";	+28/-29 PSF (design load)
104429-A-Rev03,	max. door size 16'0" x 16'0";	+25.5/-25.5 PSF (design load)
104430-Rev01,	max. door size 18'0" x 16'0";	+25/-25 PSF (design load)

**TABLE 3: Drawings for doors with Manufacturing Product Code (MPC) DSIUO-1K/M479:**

104948-A-Rev03,	max. door size 9'0" x 16'0";	+38/-44 PSF (design load)
104932-A-Rev06,	max. door size 16'2" x 16'0";	+38/-42 PSF (design load)
104951-A-Rev04,	max. door size 18'2" x 16'0";	+38/-42 PSF (design load)
104949-Rev03,	max. door size 9'0" x 16'0";	+54/-60 PSF (design load)
104928-Rev03,	max. door size 16'2" x 16'0";	+46/-52 PSF (design load)
105421-A-Rev01,	max. door size 10'0" x 16'0";	+38/-44 PSF (design load)
105391-Rev01,	max. door size 10'0" x 16'0";	+54/-60 PSF (design load)

For the doors in Tables 4 through 7, Static Pressure Tests were conducted in accordance with ASTM-E330-2002 and 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 4 through 7 are in compliance with the test requirements of the Florida Building Code.

**TABLE 4: Drawings for doors with Manufacturing Product Code (MPC) DSIE-1F471:**

103954-B-Rev06, max. door size 9'0" x 16'0"; +38/-44 PSF (design load)  
 104785-B-Rev04, max. door size 16'2" x 16'0"; +38/-42 PSF (design load)  
 104810-B-Rev05, max. door size 18'2" x 16'0"; +38/-42 PSF (design load)

**TABLE 5: Drawings for doors with Manufacturing Product Code (MPC) DSIU-1F471:**

104432-B-Rev06, max. door size 9'0" x 16'0"; +38/-44 PSF (design load)  
 104820-B-Rev04, max. door size 16'2" x 16'0"; +38/-42 PSF (design load)  
 104821-B-Rev05, max. door size 18'2" x 16'0"; +38/-42 PSF (design load)  
 104428-B-Rev03, max. door size 9'0" x 16'0"; +28/-29 PSF (design load)  
 104429-B-Rev03, max. door size 16'0" x 16'0"; +25.5/-25.5 PSF (design load)  
 104431-Rev01, max. door size 16'0" x 16'0"; +30/-30 PSF (design load)

**TABLE 6: Drawings for doors with Manufacturing Product Code (MPC) DSIUO-1M/K479:**

104948-B-Rev03, max. door size 9'0" x 16'0"; +38/-44 PSF (design load)  
 104932-B-Rev06, max. door size 16'2" x 16'0"; +38/-42 PSF (design load)  
 104951-B-Rev01, max. door size 18'2" x 16'0"; +38/-42 PSF (design load)  
 105421-B-Rev01, max. door size 10'0" x 16'0"; +38/-44 PSF (design load)

**TABLE 7: Drawings for doors with Manufacturing Product Code (MPC) DSIU-1A471:**

104424-Rev02, max. door size 9'0" x 16'0"; +20/-21 PSF (design load)  
 104425-Rev02, max. door size 16'0" x 16'0"; +20/-21 PSF (design load)  
 104427-Rev02, max. door size 16'0" x 16'0"; +30/-30 PSF (design load)

**Test Reports:**

The following test reports are based on testing conducted by American Test Lab at their North Carolina Facility: 0304.01-13 (5/1/13), 0115.01-13R (3/18/13), 0422.01-13 (5/30/13), 0326.01-13 (5/1/13), 0117.01-13R (3/18/13), 1202.02-13 (12/5/13), 0717.01-14 (8/4/14), 0515.01-14 (6/11/14), 0812.01-14 (9/3/14), 0723.01-14 (8/4/14), 0430.01-14 (7/10/14), 0905.01-18 (10/11/18). These reports document compliance with the 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/L-A-B for ASTM E330 and ANSI/DASMA 108 testing): ATC 18-020 (3/30/18), ATC 18-024 (4/27/18), ATC 14-030 (11/19/14), ATC 16-010 (8/1/16), ATC 16-017 (11/2/16), ATC 18-026 (5/15/18), ATC 18-002 (2/1/18).

**Product Description for doors with MPC DSIE-1F471:**

These doors consist of 2" double-skin insulated sections with an EPS core laminated to both skins. Both inner and outer skins are min. 27 ga. (0.016") G40 per ASTM A653. The maximum section height is 24". These doors may have optional Impact-Resistant Glazing (Aluminum). Optional Impact-Resistant Glazing is an aluminum front frame and a separate polycarbonate glazing. Optional vents shall be in accordance with Clopay D/N 101845. The following models are at least structurally equivalent to the tested door: GD2SP, GR2SP, GD2LP, GR2LP, AR2SP, AR2LP, ED2SP,

ED2LP, 4302, HDGC, MFC68, 6202, MFC68, 4305, HDGR, MFR68, 6205, SFR68. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIU-1F471:

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". These doors may have optional Impact-Resistant Glazing (Aluminum). Optional Impact-Resistant Glazing is an aluminum front frame and a separate polycarbonate glazing. Optional vents shall be in accordance with Clopay D/N 101845. The following models are at least structurally equivalent to the tested door: GD2SU, GR2SU, GD2LU, GR2LU, AR2SU, AR2LU, ED2SU, ED2LU, 9202, HDPC20, 7202, 8202, MFC68U, 9205, HDPR20, MFR68U, 7205, 8205, BD2EU, BR2EU, BD2NU, BR2NU, PR2EU, PR2NU. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIU-1K/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". 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 "Coachman" models are at least structurally equivalent to the tested door: Coachman CGUnn CXUnn, Settlers SXUnn, Affinity AGUnn. Note that 'nn' □□ presents the arrangement of the decorative overlays. The following "Canyon Ridge" models are at least structurally equivalent to the tested door: Canyon Ridge CAN2nn-XX, Glenmoor GLN2nn-XX, Custom Wood-Look MWL2nn-XX. Note that 'nn' represents the arrangement of the decorative overlays. Note that 'XX' represents the arrangement of the type of cladding. The following "Canyon Ridge Modern Series" models are at least structurally equivalent to the tested door: Canyon Ridge Modern Series CRM2zAI, Glenmoor Modern GLMzAI, Custom Wood-Look Modern WLMzAI. Note that 'z' represents the type of the decorative overlays. Not all models may be shown on a given drawing.

Product Description for doors with MPC DSIU-1FA71:

These doors consist of 1-3/8" 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". These doors may have optional Impact-Resistant Glazing (Aluminum). Optional Impact-Resistant Glazing is an aluminum front frame and a separate polycarbonate glazing. Optional vents shall be in accordance with Clopay D/N 101845. The following models are at least structurally equivalent to the tested door: GD1SU, GR1SU, GD1LU, GR1LU, AR1SU, AR1LU, ED1SU, ED1LU, BD1EU, BR1EU, BD1NU, BR1NU, PR1EU, PR1NU. 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. 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.

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:

Scott Hamilton, P. E.  
Florida P. E. No. 63286

