FL #	FL14569-R16
Application Type	Revision
Code Version	2023
Application Status	Approved
	*Approved by DBPR. Approvals by DBPR shall be reviewed and ratified by the POC and/or the Commission if necessary.
Comments	
Archived	☐
Product Manufacturer Address/Phone/Email	Jeld-Wen 3737 Lakeport Blvd Klamath Falls, OR 97601 (541) 850-2650 rfricks@jeldwen.com
Authorized Signature	Rylee Fricks rfricks@jeldwen.com
Technical Representative Address/Phone/Email	JELD-WEN Corporate Customer Service 3737 Lakeport Blvd. Klamath Falls, OR 97601 (800) 535-3936 customerserviceagents@jeld-wen.com
Quality Assurance Representative Address/Phone/Email	
Category	Exterior Doors
Subcategory	Swinging Exterior Door Assemblies
Compliance Method	Certification Mark or Listing
Certification Agency	National Accreditation & Management Institute
Validated By	National Accreditation & Management Institute

Referenced Standard and Year (of Standard)

Standard	Year
TAS 201	1994
TAS 202	1994
TAS 203	1994

Equivalence of Product Standards Certified By: Florida Licensed Professional Engineer or Architect

FL14569_R16_Equiv_ASTM E84 Equivalency Letter -13a to -18b.pdf

Product Approval Method: Method 1 Option A

Date Submitted	05/31/2024
Date Validated	06/04/2024
Date Pending FBC Approval	
Date Approved	06/05/2024

Summary of Products

FL #	Model, Number or Name	Description
14569.1	Contours Steel, Wood Edge	Full Lite Door, Outswing, 6'-0" x 6'-8"
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** +60/-60 **Other:** Product must be installed per manufacturer instructions as stated on drawing JW0509-03		**Certification Agency Certificate** FL14569_R16_C_CAC_NI006255-R11.pdf **Quality Assurance Contract Expiration Date** 09/30/2027 **Installation Instructions** FL14569_R16_II_D1000366 - Contours Steel W.E. Outswing Glazed Impact XX FBC Installs_9-14-23 - Sealed.PDF Verified By: Michael D Stremmel, P.E. 65868 Created by Independent Third Party: Yes **Evaluation Reports** FL14569_R16_AE_27561.04-107-16-R2.pdf Created by Independent Third Party: Yes
14569.2	Contours Steel, Wood Edge	Full Lite Door, Inswing, 6'-0" x 6'-8"
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** +60/-65 **Other:**		**Certification Agency Certificate** FL14569_R16_C_CAC_NI006255.02-R4.pdf **Quality Assurance Contract Expiration Date** 06/30/2027 **Installation Instructions** FL14569_R16_II_D1000368 - Contours Steel W.E Inswing Glazed Impact XX DP65-60 FBC Installs - Sealed.PDF Verified By: Michael D Stremmel, P.E. 65868 Created by Independent Third Party: Yes **Evaluation Reports** FL14569_R16_AE_27561.05-107-16-R2.pdf Created by Independent Third Party: Yes
14569.3	Contours Steel, Wood Edge	Full Lite Door, Inswing/Outswing, 6'-0" x 8'-0"
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** +50/-50 **Other:**		**Certification Agency Certificate** FL14569_R16_C_CAC_NI006254-R9.pdf **Quality Assurance Contract Expiration Date** 09/30/2027 **Installation Instructions** FL14569_R16_II_D1000367 - Contours Steel W.E ISW-OSW Glazed Impact XX DP50 FBC Installs_3-20-2024 - Sealed.pdf Verified By: Michael D Stremmel, P.E. 65868 Created by Independent Third Party: Yes **Evaluation Reports** FL14569_R16_AE_27561.06-107-16-R2.pdf Created by Independent Third Party: Yes
14569.4	Contours Steel, Wood Edge	Opaque Door, Inswing/Outswing, w/ or w/o Impact & Non-Impact Rated Glazed Sidelites, 12'-0" x 6'-8"
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** N/A **Other:**		**Certification Agency Certificate** FL14569_R16_C_CAC_NI012741-R1 NI012741.01-R1.pdf **Quality Assurance Contract Expiration Date** 04/30/2028 **Installation Instructions** FL14569_R16_II_D1000369 - Contours Steel W.E. ISW-OSW Opaque Impact OXO (9-0x6-8) DP65 FBC Installs_9-20-23 - Sealed.pdf Verified By: Michael D Stremmel, P.E. 65868 Created by Independent Third Party: Yes **Evaluation Reports** FL14569_R16_AE_27561.07-107-16-R2.pdf Created by Independent Third Party: Yes
14569.5	Contours Steel, Wood Edge	Opaque Door, Inswing/Outswing, w/ or w/o Impact & Non-Impact Rated Glazed Sidelites, 8'-4" x 8'-0"
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** +45/-45 **Other:**		**Certification Agency Certificate** FL14569_R16_C_CAC_NI012740-R3.pdf **Quality Assurance Contract Expiration Date** 04/30/2028 **Installation Instructions** FL14569_R16_II_D015858 - Contours Steel W.E. ISW-OSW

		Opaque Impact (6-2x8-0) DP45 FBC Installs_9-21-23 - Sealed.pdf Verified By: Michael D Stremmel, P.E. 65868 Created by Independent Third Party: Yes **Evaluation Reports** FL14569_R16_AE_27561.09-107-16-R2.pdf Created by Independent Third Party: Yes
14569.6	Contours Steel, Wood Edge	Opaque Door, Outswing, w/ or w/o Sidelite, 8'-11" x 6'-8"
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** N/A **Other:**		**Certification Agency Certificate** FL14569_R16_C_CAC_NI011082-R5.pdf **Quality Assurance Contract Expiration Date** 08/31/2027 **Installation Instructions** FL14569_R16_II_D015000 (14569.6) - Contours Steel W.E. Outswing Opaque Impact OXXO DP57 FBC Installs_6-3-24 DSS.pdf Verified By: Micah Swartz, P.E. 93573 Created by Independent Third Party: Yes **Evaluation Reports** FL14569_R16_AE_MS 24-06001 Calcs DSS.pdf Created by Independent Third Party: Yes
14569.7	Contours Steel, Wood Edge	Opaque Door, Outswing, w/ or w/out Sidelites, 8'-11" x 8'-0"
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** N/A **Other:**		**Certification Agency Certificate** FL14569_R16_C_CAC_NI011096.01-R3 0 NI011096-R5.pdf **Quality Assurance Contract Expiration Date** 08/31/2027 **Installation Instructions** FL14569_R16_II_D015025 - Contours Steel W.E. Opaque OSW OXXO (9-0x8-0) DP47-43 FBC Installs_9-27-23 - Sealed.pdf Verified By: Michael D Stremmel, P.E. 65868 Created by Independent Third Party: Yes **Evaluation Reports** FL14569_R16_AE_27561.10-107-16-R2.pdf Created by Independent Third Party: Yes

Back Next

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Product Approval Accepts:

Credit Card Safe securityMETRICS

NOTICE OF PRODUCT CERTIFICATION

Company: **JELD-WEN Doors**
3737 Lakeport Drive
Klamath Falls, OR 97601

Certification No.: **NI012741-R1**
Certification Date: **04/17/2012**
Expiration Date: **04/30/2028**
Revision Date: **05/14/2019**

Product: **24 Ga. Steel Wood Edge Impact Rated Opaque Doors w/ & w/o Impact & Non-Impact Rated Glazed Sidelites (w/wood frame unless specified)**

Specification: TAS 201-94/202-94/203-94

The "Notice of Product Certification" is only valid if the NAMI Certification Label has been applied to the product as described within this document. The certification label represents product conformity to the applicable specification and that all certification criteria has been satisfied. This product has been approved for listing within NAMI's Certified Product Listing at www.Namicertification.com. NAMI's Certification Program is accredited by The American National Standards Institute (ANSI).

Configuration	Inswing or Outswing	Glazed or Opaque	Maximum Size	Design Pressure Pos/Neg	Missile Impact Rated	Test Report Number Drawing Number & Comments
X Single	I/S	Opaque	3'2" x 6'10"	+65/65 psf	Yes	NCTL-210-3801-2/FL 1802 Max Panel Size: 3'0" x 6'8" Installation Details: JW-32012FL
X Single	O/S	Opaque	3'2" x 6'9"	+65/65 psf	Yes	NCTL-210-3801-2/FL 1802 Max Panel Size: 3'0" x 6'8" Installation Details: JW-32012FL
OXO Single w/Sidelites	I/S	Door-Opaque Sidelite-Glazed	9'5" x 6'10"	+65/65 psf	Door-Yes Sidelite-No	NCTL-210-3801-2/FL 1802 Max Panel Size: 3'0" x 6'8"/Daylight Opening: 1'9" x 5'3" Glazing: IG- 1/8" Tempered Installation Details: JW-32012FL
OXO Single w/Sidelites	O/S	Door-Opaque Sidelite-Glazed	9'5" x 6'9"	+65/65 psf	Door-Yes Sidelite-No	NCTL-210-3801-2/FL 1802 Max Panel Size: 3'0" x 6'8"/Daylight Opening: 1'9" x 5'3" Glazing: IG- 1/8" Tempered Installation Details: JW-32012FL
OXO Single w/Sidelites	I/S	Door-Opaque Sidelite-Glazed	9'5" x 6'10"	+65/65 psf	Door-Yes Sidelite-Yes	NCTL-210-3801-2/FL 1802 Max Panel Size: 3'0" x 6'8"/Daylight Opening: 1'9" x 5'3" Glazing: IG- Laminate-1/8" Annealed Glass/.090" Solutia PVB Interlayer/1/8" Annealed Glass/1/8" Tempered Glass Installation Details: JW-32012FL
OXO Single w/Sidelites	O/S	Door-Opaque Sidelite-Glazed	9'5" x 6'9"	+65/65 psf	Door-Yes Sidelite-Yes	NCTL-210-3801-2/FL 1802 Max Panel Size: 3'0" x 6'8"/Daylight Opening: 1'9" x 5'3" Glazing: IG- Laminate-1/8" Annealed Glass/.090" Solutia PVB Interlayer/1/8" Annealed Glass/1/8" Tempered Glass Installation Details: JW-32012FL

National Accreditation & Management Institute, Inc./4794 George Washington Memorial Highway/Hayes, VA 23072
Tel: (804) 684-5124/Fax: (804) 684-5122

NAMI AUTHORIZED SIGNATURE: _____

NOTICE OF PRODUCT CERTIFICATION

Company: **JELD-WEN Doors**
3737 Lakeport Drive
Klamath Falls, OR 97601

Certification No.: **NI012741.01-R1**
Certification Date: **04/17/2012**
Expiration Date: **04/30/2028**
Revision Date: **05/14/2019**

Product: **24 Ga. Steel Wood Edge Impact Rated Opaque Doors w/ & w/o Impact & Non-Impact Rated Glazed Sidelites (w/wood frame unless specified)**

Specification: TAS 201-94/202-94/203-94

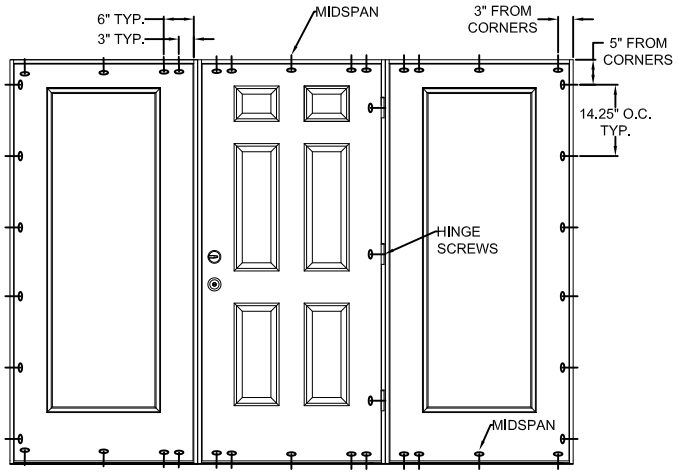
The "Notice of Product Certification" is only valid if the NAMI Certification Label has been applied to the product as described within this document. The certification label represents product conformity to the applicable specification and that all certification criteria has been satisfied. This product has been approved for listing within NAMI's Certified Product Listing at www.Namicertification.com. NAMI's Certification Program is accredited by The American National Standards Institute (ANSI).

Configuration	Inswing or Outswing	Glazed or Opaque	Maximum Size	Design Pressure Pos/Neg	Missile Impact Rated	Test Report Number Drawing Number & Comments
XX Double	I/S	Opaque	6'2" x 6'10"	+60/60 psf	Yes	NCTL-210-3801-2/FL 1802 Max Panel Size: 3'0" x 6'8" Installation Details: JW-32012FL
XX Double	O/S	Opaque	6'2" x 6'9"	+60/60 psf	Yes	NCTL-210-3801-2/FL 1802 Max Panel Size: 3'0" x 6'8" Installation Details: JW-32012FL
OXXO Double w/Sidelites	I/S	Door-Opaque Sidelite-Glazed	12'5" x 6'10"	+60/60 psf	Door-Yes Sidelite-No	NCTL-110-11987-1/FL 1802 Max Panel Size: 3'0" x 6'8"/Daylight Opening: 1'9" x 5'3" Glazing: IG- 1/8" Tempered Installation Details: JW-32012FL
OXXO Double w/Sidelites	O/S	Door-Opaque Sidelite-Glazed	12'5" x 6'9"	+60/60 psf	Door-Yes Sidelite-No	NCTL-110-11987-1/FL 1802 Max Panel Size: 3'0" x 6'8"/Daylight Opening: 1'9" x 5'3" Glazing: IG- 1/8" Tempered Installation Details: JW-32012FL
OXXO Double w/Sidelites	I/S	Door-Opaque Sidelite-Glazed	12'5" x 6'10"	+60/60 psf	Door-Yes Sidelite-Yes	NCTL-110-11987-1/FL 1802 Max Panel Size: 3'0" x 6'8"/Daylight Opening: 1'9" x 5'3" Glazing: IG- Laminate-1/8" Annealed Glass/.090" Solutia PVB Interlayer/1/8" Annealed Glass/1/8" Tempered Glass Installation Details: JW-32012FL
OXXO Double w/Sidelites	O/S	Door-Opaque Sidelite-Glazed	12'5" x 6'9"	+60/60 psf	Door-Yes Sidelite-Yes	NCTL-110-11987-1/FL 1802 Max Panel Size: 3'0" x 6'8"/Daylight Opening: 1'9" x 5'3" Glazing: IG- Laminate-1/8" Annealed Glass/.090" Solutia PVB Interlayer/1/8" Annealed Glass/1/8" Tempered Glass Installation Details: JW-32012FL

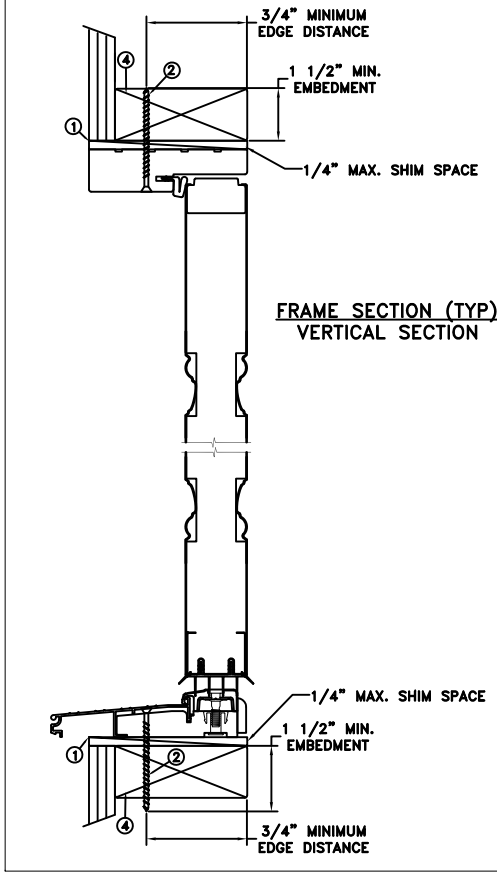
National Accreditation & Management Institute, Inc./4794 George Washington Memorial Highway/Hayes, VA 23072
Tel: (804) 684-5124/Fax: (804) 684-5122

NAMI AUTHORIZED SIGNATURE: _____

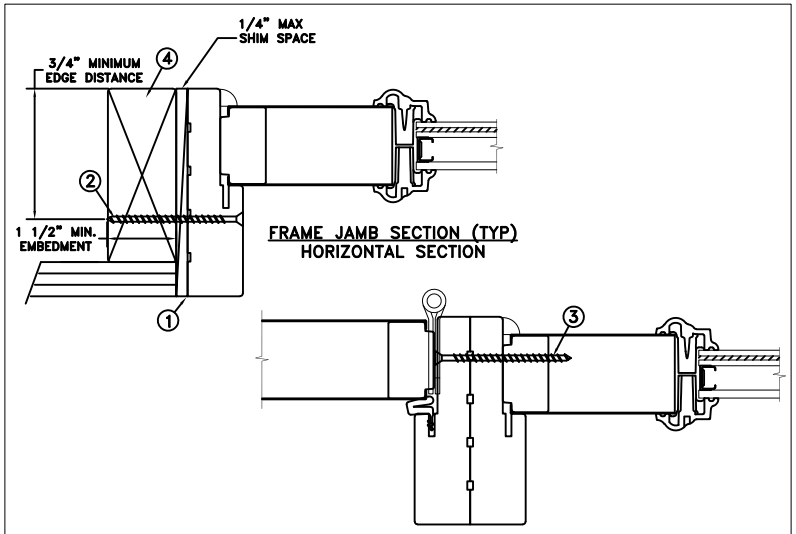
THROUGH FRAME INSTALLATION



TYPICAL ELEVATION WITH FASTENER SPACING



FRAME SECTION (TYP)
VERTICAL SECTION



FRAME JAMB SECTION (TYP)
HORIZONTAL SECTION

FRAME JAMB TO JAMB SECTION (TYP)
HORIZONTAL SECTION

MAXIMUM FRAME	DP	IMPACT
112.5 x 81.875	+65/−65	YES

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use #10 PH or greater fastener through the head & side jambs with sufficient length to penetrate a minimum of 1 1/2" into the wood framing. For 2x wood frame substrate (min. S.G. = 0.55).
3. Install corrosion resistant (2) - 1/4"x 3" Tapcon screws through each hinge into rough opening.
4. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

General Notes:

1. The product shown herein is designed,tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
2. All glazing shall conform to ASTM E1300.
3. Use structural or composite shims where required.

This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing consideration that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

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MICHAEL D. STREMMEL LICENSE No. 65868 STATE OF FLORIDA PROFESSIONAL ENGINEER

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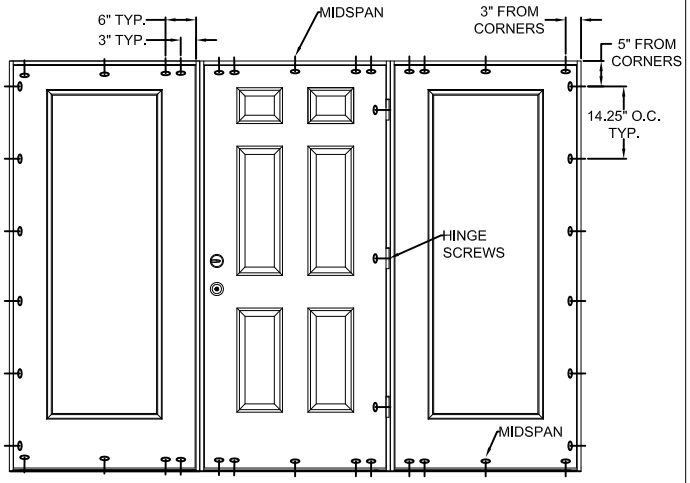
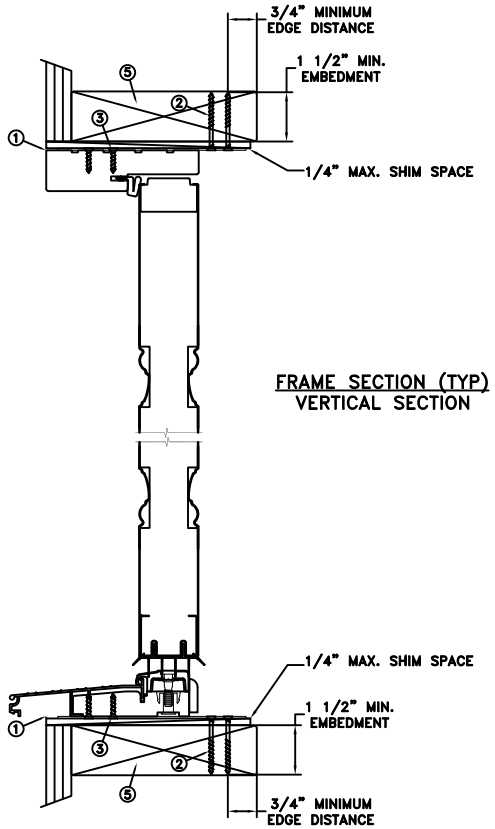
MICHAEL D. STREMMEL, P.E.
Florida P.E. No. 65868, REG. No. 37122
1410 Eden Road
York, PA. 17406
(717) 916-6300

	DATE: 09/20/2023	JELD-WEN 3737 LAKEPORT BLVD. KLAMATH FALLS OR, 97601 PHONE: (800) 535-3936
DRAWN BY: M.HAM	SCALE: NTS	
CHECKED BY: D.VEZO	TITLE: Contours Steel Wood Edge Opaque Inswing w/Sidelites OXO	
APPROVED BY: D.VEZO		
RECORD No.: D1000369		
REPORT No.: NCTL-210-3801-2	CAD DWG. No.: –	REV: C / SHEET 1 of 10

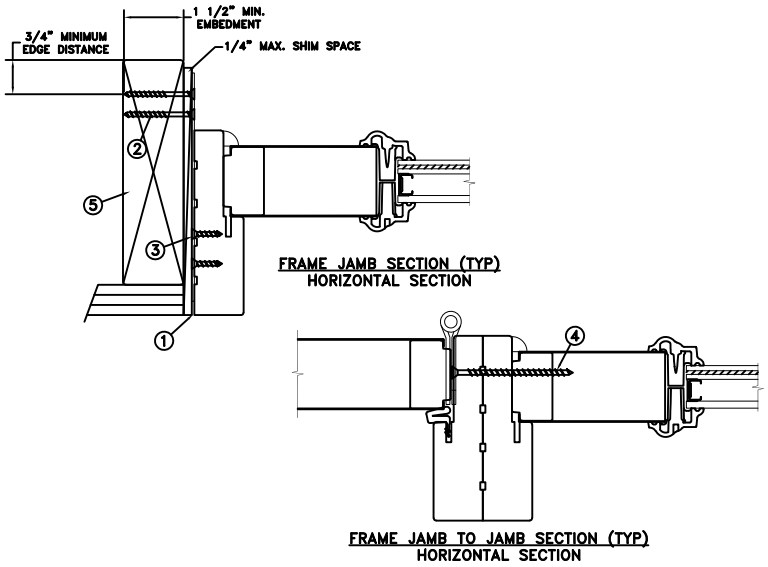
MASONRY STRAP INSTALLATION



TYPICAL ELEVATION WITH FASTENER SPACING



FRAME SECTION (TYP)
VERTICAL SECTION



FRAME JAMB SECTION (TYP)
HORIZONTAL SECTION

FRAME JAMB TO JAMB SECTION (TYP)
HORIZONTAL SECTION

MAXIMUM FRAME	DP	IMPACT
112.5 x 81.875	+65/−65	YES

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use 2 - #10 PFH or larger fasteners through masonry strap with sufficient length to penetrate a minimum of 1 1/2" into the buck. For 2x wood frame substrate (min. S.G. = 0.55).
3. Use 2 - #10 PFH or larger fasteners through masonry strap into jamb without penetrating through the jamb into product causing visability or collateral damage to product.
4. Install corrosion resistant (2) - 1/4"x 3" Tapcon screws through each hinge into rough opening.
5. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

General Notes:

1. The product shown herein is designed,tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
2. All glazing shall conform to ASTM E1300.
3. Use structural or composite shims where required.
4. Masonry strap specifications: 20 Ga. galvanized steel, .036" min. thickness x 1.5" min. width.

This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing consideration that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

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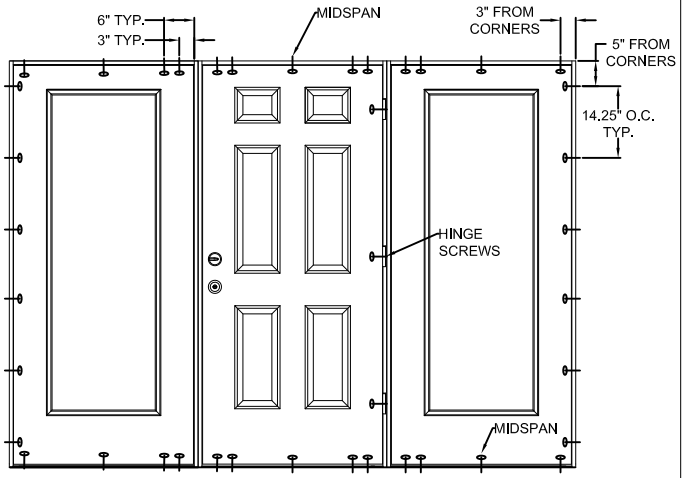
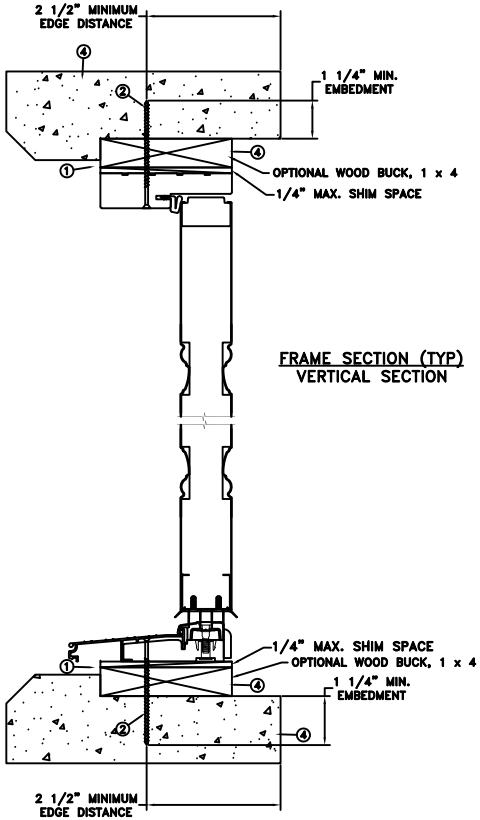
MICHAEL D. STREMMEL, P.E.
Florida P.E. No. 65868, REG. No. 37122
1410 Eden Road
York, PA. 17406
(717) 916-6300

	DATE: 09/20/2023	JELD-WEN 3737 LAKEPORT BLVD. KLAMATH FALLS OR, 97601 PHONE: (800) 535-3936
DRAWN BY: M.HAM	SCALE: NTS	
CHECKED BY: D.VEZO	TITLE: Contours Steel Wood Edge Opaque Inswing w/Sidelites OXO	
APPROVED BY: D.VEZO		
RECORD No.: D1000369		
REPORT No.: NCTL-210-3801-2	CAD DWG. No.: –	REV: C

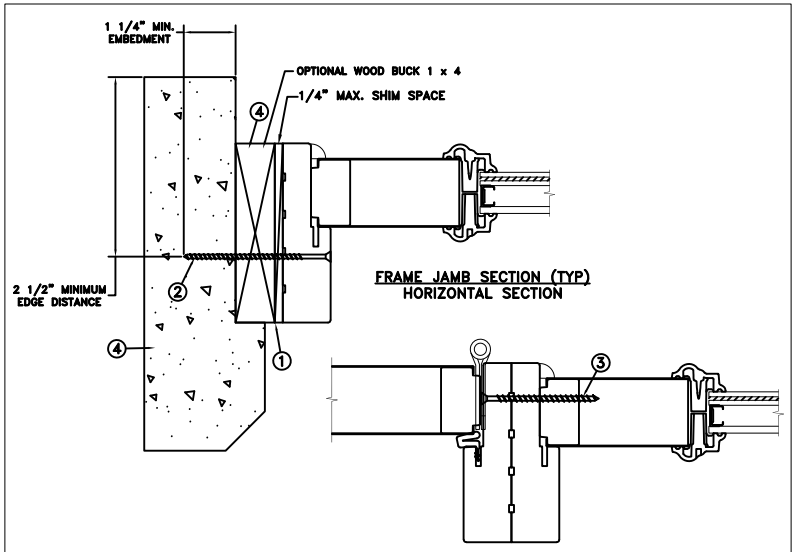
CONCRETE/MASONRY INSTALLATION



TYPICAL ELEVATION WITH FASTENER SPACING



FRAME SECTION (TYP)
VERTICAL SECTION



FRAME JAMB SECTION (TYP)
HORIZONTAL SECTION

FRAME JAMB TO JAMB SECTION (TYP)
HORIZONTAL SECTION

MAXIMUM FRAME	DP	IMPACT
112.5 x 81.875	+65/−65	YES

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use 1/4" tapcon or equivalent fasteners through frame with sufficient length to penetrate a minimum of 1 1/4" into concrete or masonry at each location with a 2 1/2" min. from edge distance. For concrete (min. fc = 3000 psi) or masonry substrate (CMU shall adhere to ASTM C90).
3. Install corrosion resistant (2) - 1/4"x 3" Tapcon screws through each hinge into rough opening.
4. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

General Notes:

1. The product shown herein is designed,tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
2. All glazing shall conform to ASTM E1300.
3. Use structural or composite shims where required.

This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing consideration that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

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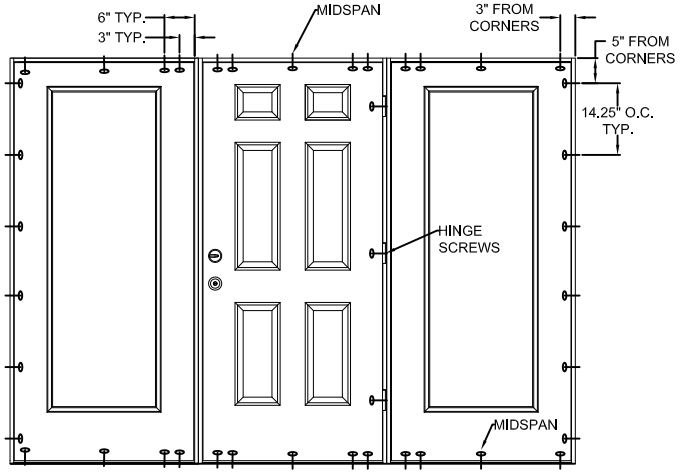
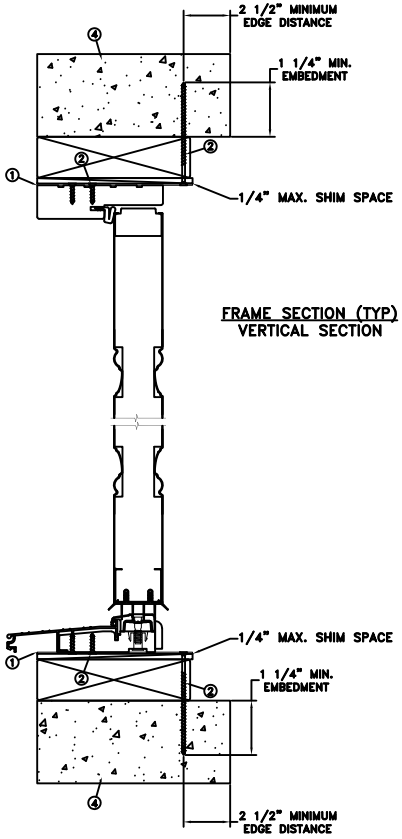
MICHAEL D. STREMMEL, P.E.
Florida P.E. No. 65868, REG. No. 37122
1410 Eden Road
York, PA. 17406
(717) 916-6300

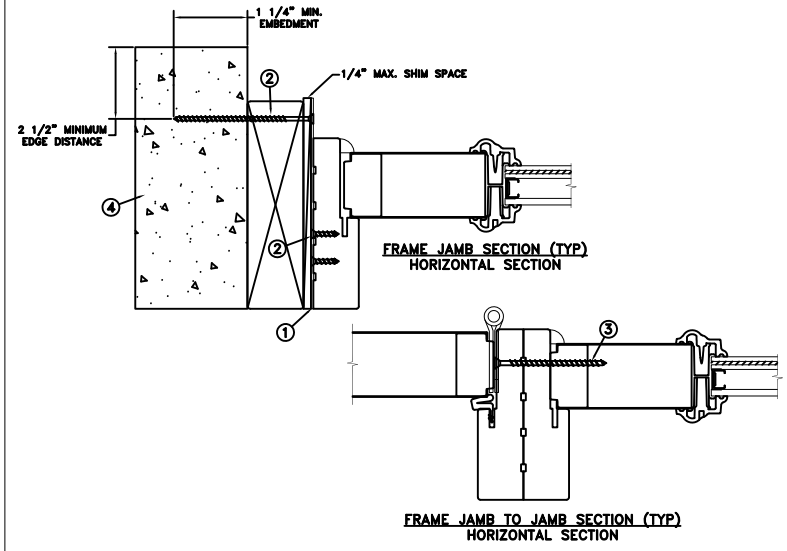
	DATE: 09/20/2023	JELD-WEN 3737 LAKEPORT BLVD. KLAMATH FALLS OR, 97601 PHONE: (800) 535-3936
DRAWN BY: M.HAM	SCALE: NTS	
CHECKED BY: D.VEZO	TITLE: Contours Steel Wood Edge Opaque Inswing w/Sidelites OXO	
APPROVED BY: D.VEZO		
RECORD No.: D1000369		
REPORT No.: NCTL-210-3801-2	CAD DWG. No.: –	REV: C



TYPICAL ELEVATION WITH FASTENER SPACING



CONCRETE/MASONRY INSTALLATION



MAXIMUM FRAME	DP	IMPACT
112.5 x 81.875	+65/−65	YES

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use (1) - 1/4" Tapcon or equivalent fasteners through strap with sufficient length to penetrate a minimum of 1 1/4" into concrete or masonry at each location with a 2 1/2" min. from edge distance. Use (2) - #8 PFH fasteners through masonry strap into frame. For concrete (min. fc = 3000 psi) or masonry substrate (CMU shall adhere to ASTM C90).
3. Install corrosion resistant (2)- 1/4"x 3" Tapcon screws through each hinge into rough opening.
4. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

General Notes:

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2. All glazing shall conform to ASTM E1300.
3. Use structural or composite shims where required.
4. Masonry strap specifications: 20 Ga. galvanized steel, .036" min. thickness x 1.5" min. width.

This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing consideration that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

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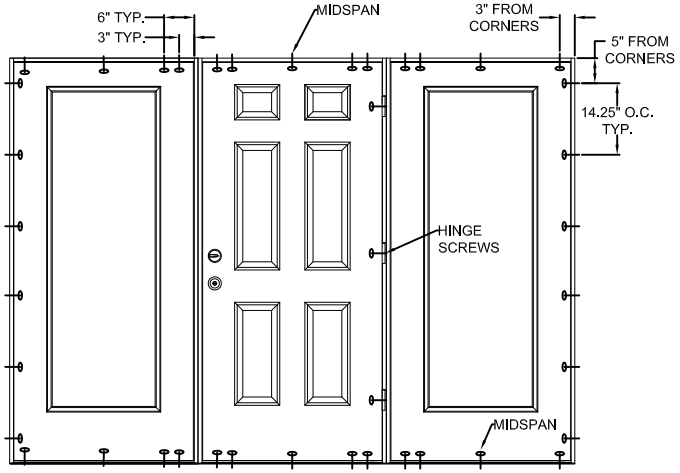
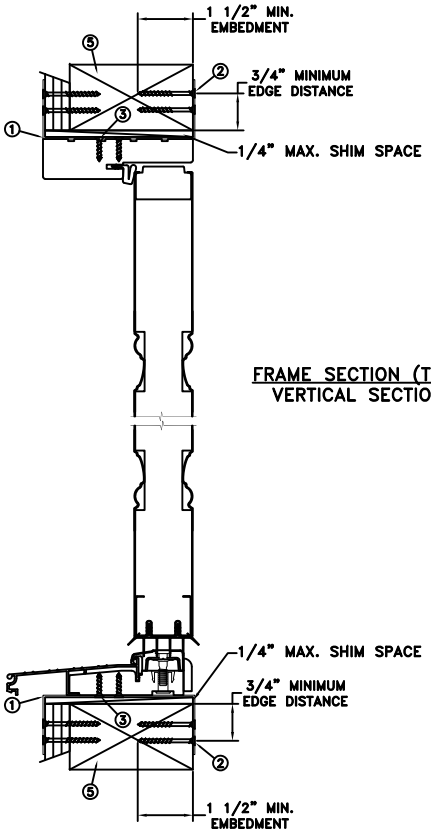
MICHAEL D. STREMMEL, P.E.
Florida P.E. No. 65868, REG. No. 37122
1410 Eden Road
York, PA. 17406
(717) 916-6300

	DATE: 09/20/2023	JELD-WEN 3737 LAKEPORT BLVD. KLAMATH FALLS OR, 97601 PHONE: (800) 535-3936
DRAWN BY: M.HAM	SCALE: NTS	
CHECKED BY: D.VEZO	TITLE: Contours Steel Wood Edge Opaque Inswing w/Sidelites OXO	
APPROVED BY: D.VEZO		
RECORD No.: D1000369		
REPORT No.: NCTL-210-3801-2	CAD DWG. No.: –	REV: C

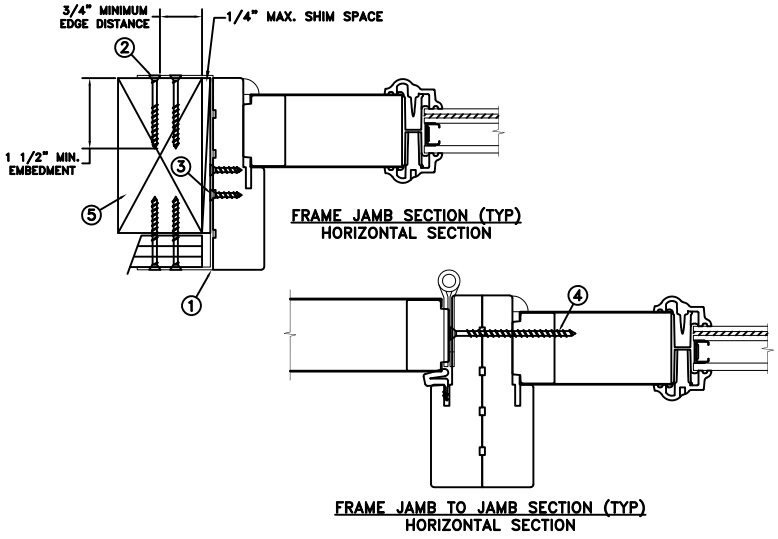
MASONRY STRAP INSTALLATION



TYPICAL ELEVATION WITH FASTENER SPACING



FRAME SECTION (TYP)
VERTICAL SECTION



FRAME JAMB SECTION (TYP)
HORIZONTAL SECTION

FRAME JAMB TO JAMB SECTION (TYP)
HORIZONTAL SECTION

MAXIMUM FRAME	DP	IMPACT
112.5 x 81.875	+65/−65	YES

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use min. 2 - #8 PFH or larger fasteners through masonry strap with sufficient length to penetrate a minimum of 1 1/2" into the buck. Bend straps around both sides of the buck. For 2x wood frame substrate (min. S.G. = 0.42).
3. Use min. 2 - #8 PFH or larger fasteners through masonry strap into jamb without penetrating through the jamb into product causing visability or collateral damage to product.
4. Install corrosion resistant (2)- 1/4"x 3" Tapcon screws through each hinge into rough opening.
5. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

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MICHAEL D. STREMMEL LICENSE No. 65868 STATE OF FLORIDA PROFESSIONAL ENGINEER

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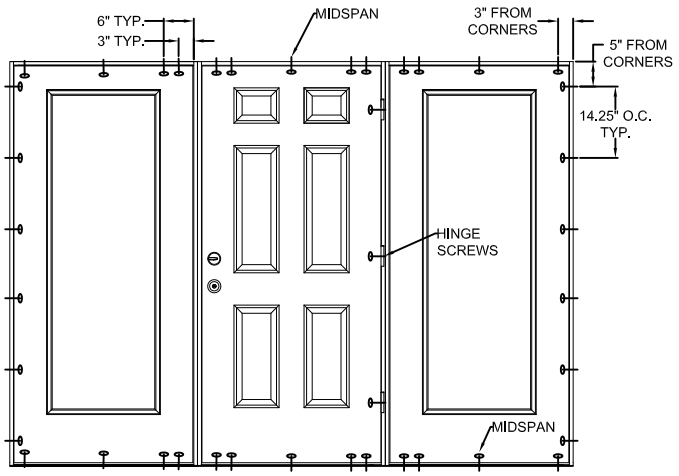
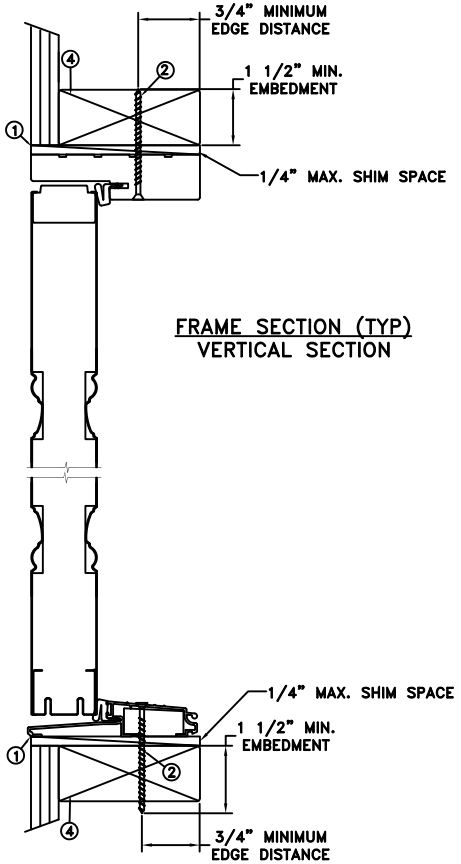
DRAWN BY: M.HAM	SCALE: NTS	
CHECKED BY: D.VEZO	TITLE: Contours Steel Wood Edge Opaque Inswing w/Sidelites OXO	
APPROVED BY: D.VEZO		
RECORD No.: D1000369		
REPORT No.: NCTL-210-3801-2	CAD DWG. No.: –	REV: C

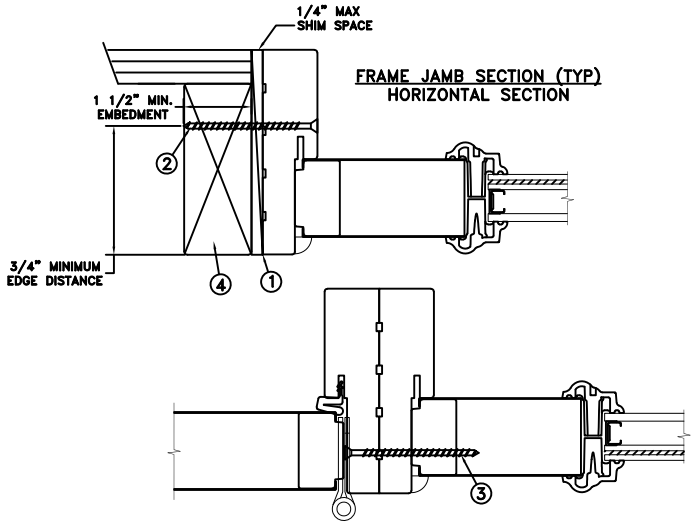
THROUGH FRAME INSTALLATION



TYPICAL ELEVATION WITH FASTENER SPACING



FRAME SECTION (TYP)
VERTICAL SECTION



FRAME JAMB SECTION (TYP)
HORIZONTAL SECTION

FRAME JAMB TO JAMB SECTION (TYP)
HORIZONTAL SECTION

MAXIMUM FRAME	DP	IMPACT
112.5 x 80.75	+65/−65	YES

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use #10 PH or greater fastener through the head & side jambs with sufficient length to penetrate a minimum of 1 1/2" into the wood framing. For 2x wood frame substrate (min. S.G. = 0.42).
3. Install corrosion resistant (2) - 1/4"x 3" Tapcon screws through each hinge into rough opening.
4. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

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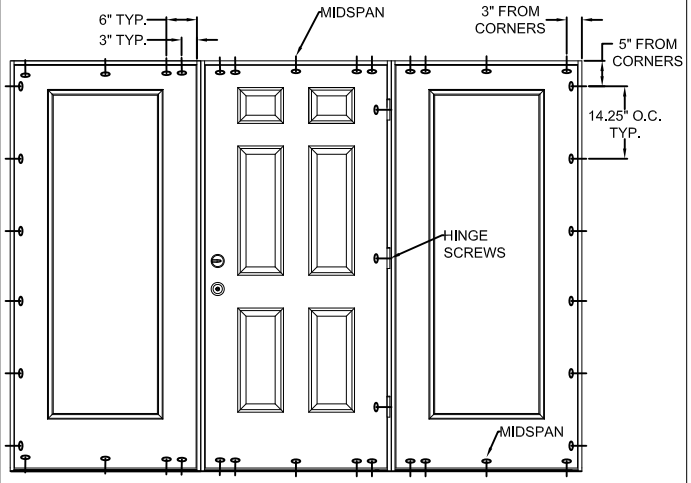
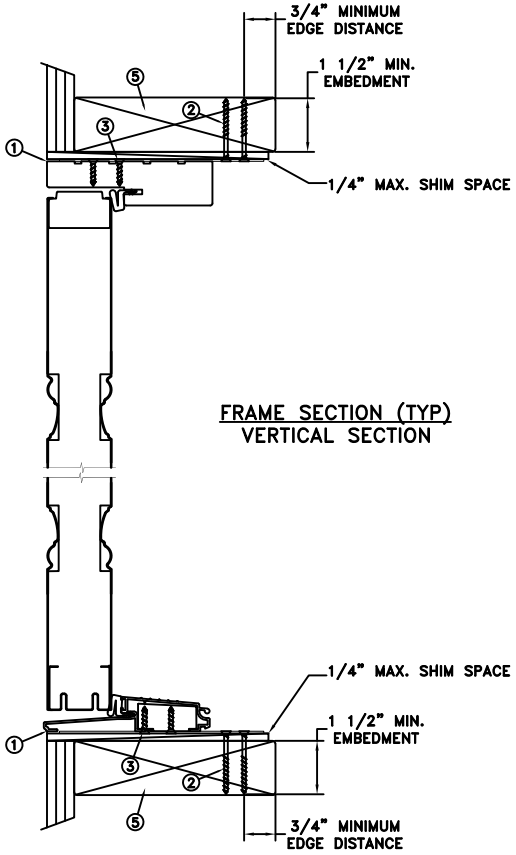
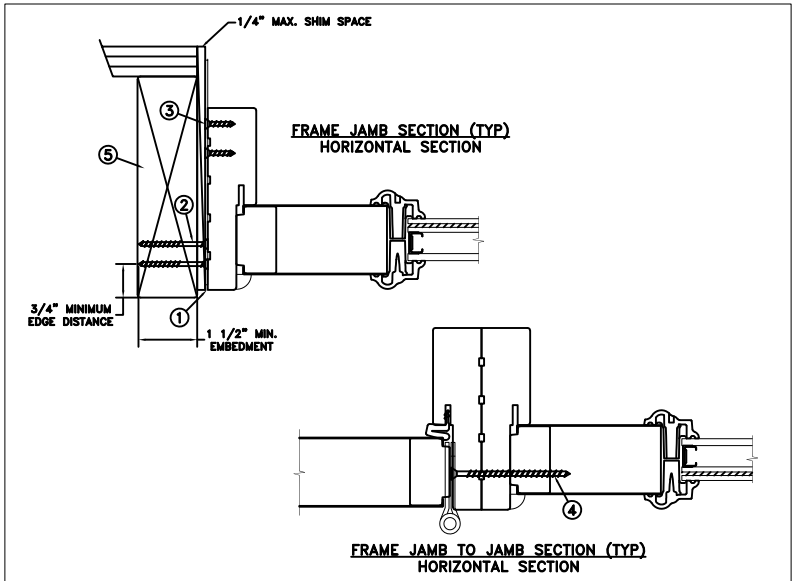
MASONRY STRAP INSTALLATION



TYPICAL ELEVATION WITH FASTENER SPACING





MAXIMUM FRAME	DP	IMPACT
112.5 x 80.75	+65/−65	YES

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use 2 - #10 PFH or larger fasteners through masonry strap with sufficient length to penetrate a minimum of 1 1/2" into the buck. For 2x wood frame substrate (min. S.G. = 0.42).
3. Use 2 - #10 PFH or larger fasteners through masonry strap into jamb without penetrating through the jamb into product causing visability or collateral damage to product.
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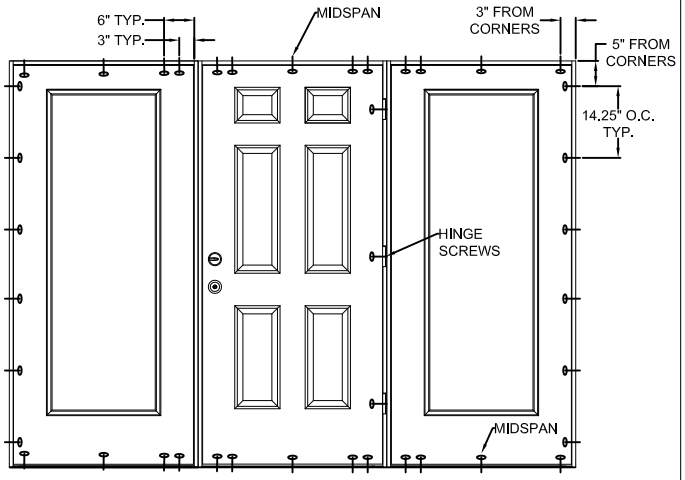
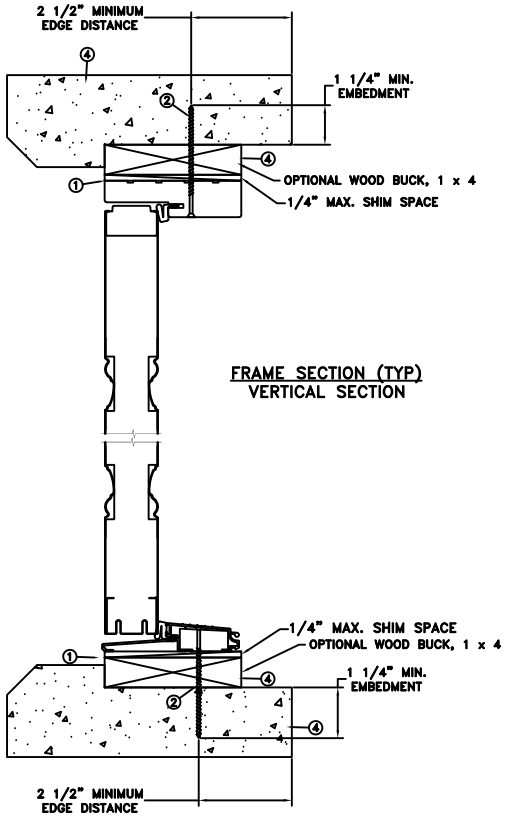
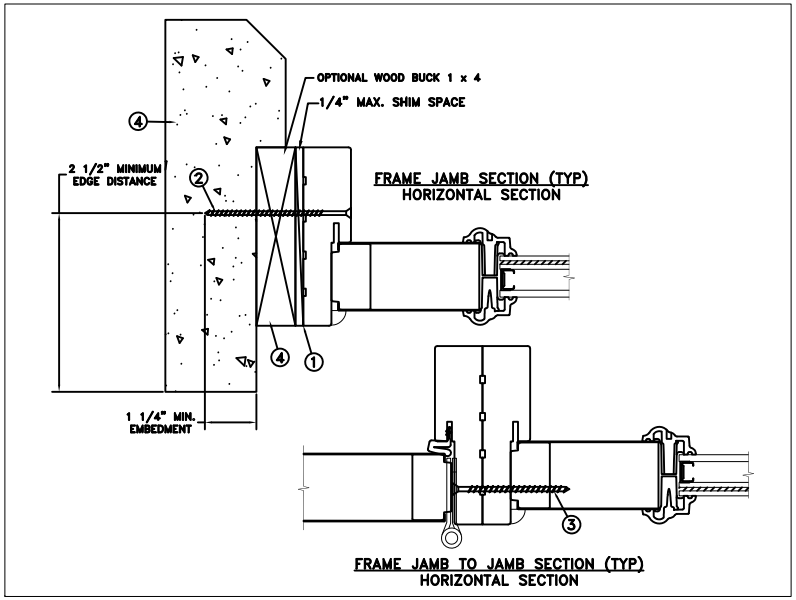


TYPICAL ELEVATION WITH FASTENER SPACING



CONCRETE/MASONRY INSTALLATION



MAXIMUM FRAME	DP	IMPACT
112.5 x 80.75	+65/−65	YES

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use 1/4" tapcon or equivalent fasteners through frame with sufficient length to penetrate a minimum of 1 1/4" into concrete or masonry at each location with a 2 1/2" min. from edge distance. For concrete (min. fc = 3000 psi) or masonry substrate (CMU shall adhere to ASTM C90).
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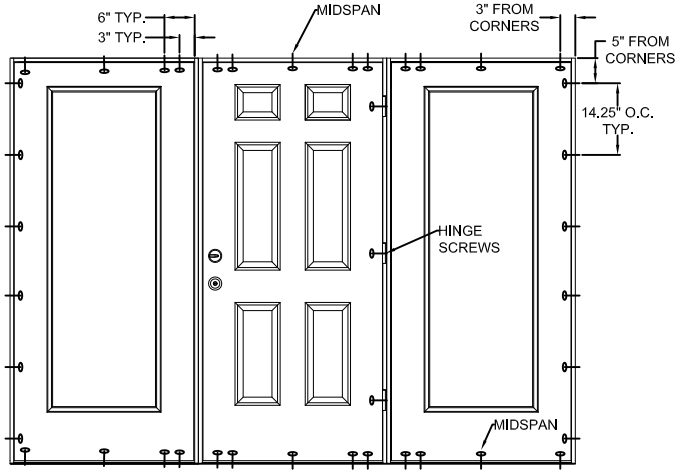
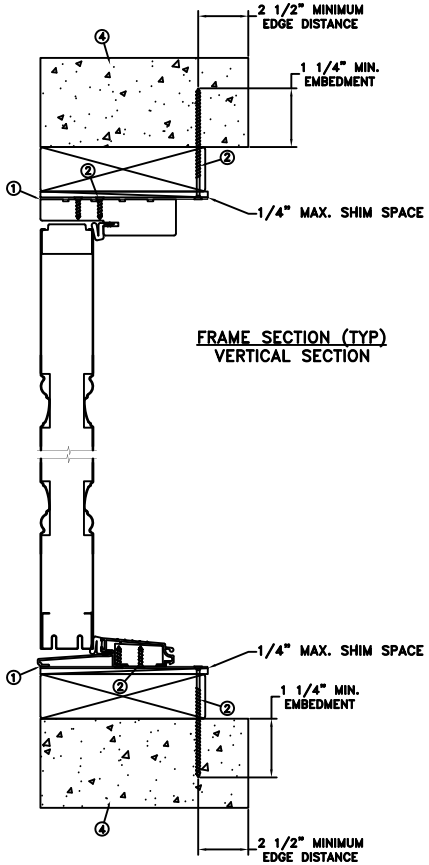


TYPICAL ELEVATION WITH FASTENER SPACING



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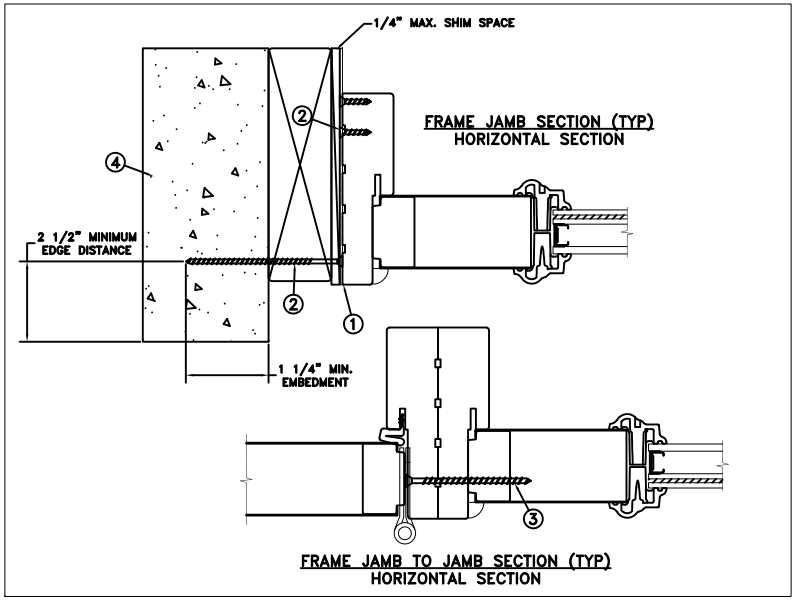

MAXIMUM FRAME	DP	IMPACT
112.5 x 80.75	+65/−65	YES

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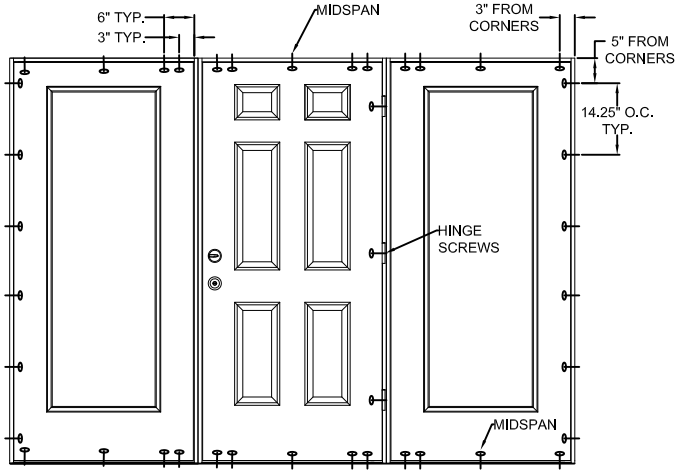
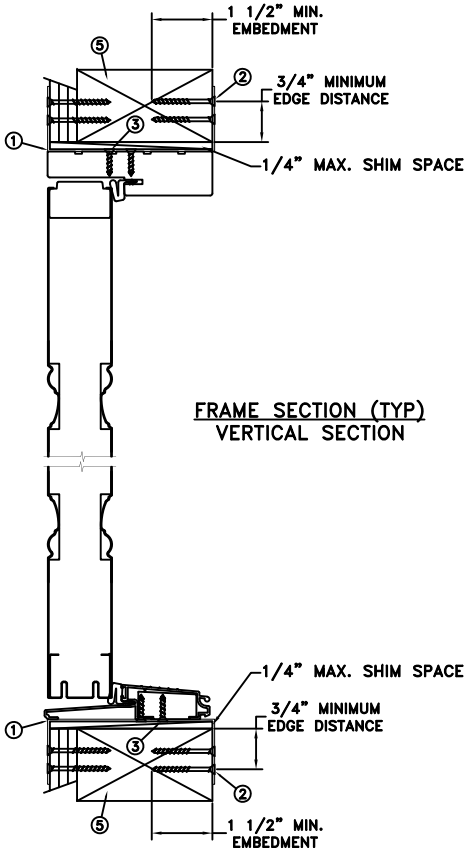
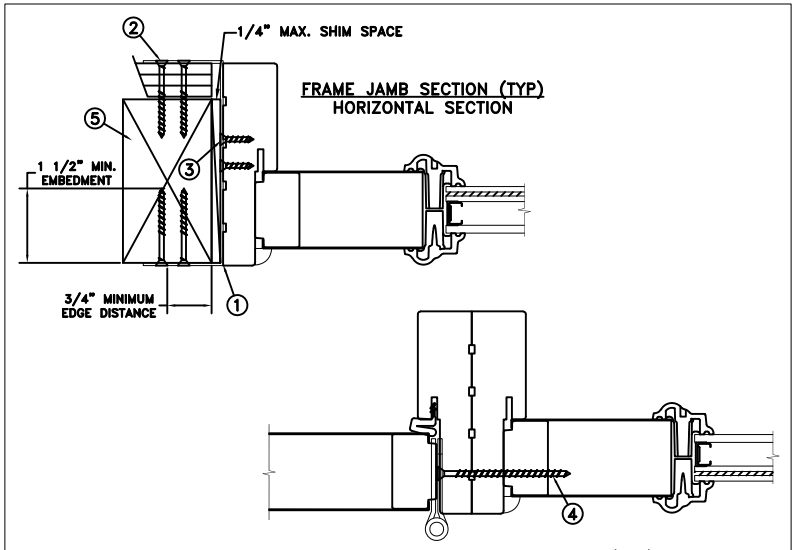
MASONRY STRAP INSTALLATION



TYPICAL ELEVATION WITH FASTENER SPACING





MAXIMUM FRAME	DP	IMPACT
112.5 x 80.75	+65/−65	YES

Installation Notes:

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3. Use min. 2 - #8 PFH or larger fasteners through masonry strap into jamb without penetrating through the jamb into product causing visability or collateral damage to product.
4. Install corrosion resistant (2)- 1/4"x 3" Tapcon screws through each hinge into rough opening.
5. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

General Notes:

1. The product shown herein is designed,tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
2. All glazing shall conform to ASTM E1300.
3. Use structural or composite shims where required.
4. Masonry strap specifications: 20 Ga. galvanized steel, .036" min. thickness x 1.5" min. width.

This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing consideration that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

DISCLAIMER:
This drawing and its contents are confidential and are not to be reproduced or copied in whole or in part or used or disclosed to others except as authorized by JELD-WEN Inc.

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MICHAEL D. STREMMEL, P.E.
Florida P.E. No. 65868, REG. No. 37122
1410 Eden Road
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	DATE: 09/20/2023	JELD-WEN 3737 LAKEPORT BLVD. KLAMATH FALLS OR, 97601 PHONE: (800) 535-3936
DRAWN BY: M.HAM	SCALE: NTS	
CHECKED BY: D.VEZO	TITLE: Contours Steel Wood Edge Opaque Outswing w/Sidelites OXO	
APPROVED BY: D.VEZO		
RECORD No.: D1000369		
REPORT No.: NCTL-210-3801-2	CAD DWG. No.: –	REV: C / SHEET: 10 of 10

PRODUCT APPROVAL SUPPORTING CALCULATIONS

Series/Model: Contours Steel Wood Edge Opaque inswing w/Sidelites OXO

REPORT NO.: 27561.07-107-16

RENDERED TO: Jeld-Wen Windows & Doors
3737 Lakeport Blvd
Klamath Falls, Oregon

PREPARED BY: Michael D. Stremmel, P.E.
Molimo, LLC
1410 Eden Road
York, Pennsylvania 17402

REVISION 2 DATE: 4/23/2024

2024.04.23 07:28:39 -04'00'

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Michael D. Stremmel, P.E.
Senior Project Engineer
FL PE 65868
FL REG 37122

It is a violation to alter this document in any way unless acting under the direction of a licensed professional engineer.

SCOPE:

Molimo, LLC was contracted by Jeld-Wen Windows & Doors to evaluate alternate installation methods for their Contours Steel Wood Edge Opaque inswing w/Sidelites OXO. The evaluation is based on physical testing and product certifications.

Reference standards utilized in this project include:

Florida Building Code. International Code Council.

ANSI/AWC *National Design Specification (NDS) for Wood Construction*. American Wood Council.

AISI S100 *North American Specification for the Design of Cold-Formed Steel Structural Members*. American Iron and Steel Institute.

ICC-ES Report ESR-1976 ITW Buildex TEKS Self-Drilling Fasteners. ICC Evaluation Service.

NOA 21-0201.06 *Tapcon Concrete and Masonry Anchors with Advanced Threadform Technology*. Miami-Dade County Product Control Section.

The anchorage analysis presented herein does not address the water resistance, water penetration, or air infiltration performance of the installation method or the installed product. In addition, the analyses rely on the assumption that the building substrate is capable of withstanding the incurred loads.

Certification of Independence

In accordance with Rule 61G20-3 Florida Administrative Code, Molimo, LLC hereby certifies the following:

- Molimo, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the agency.
- Molimo LLC s is not owned, operated or controlled by any company manufacturing or distributing products it tests or labels.
- Michael D. Stremmel, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the reports are being issued.
- Michael D. Stremmel, P.E does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

ANALYSES:

Summary of Test Results

Table 1 summarizes the various Contours Steel Wood Edge Opaque inswing w/Sidelites OXO products and their corresponding performance levels which have been established by testing or product certification.

Table 1: Summary of Test Results

Series/Model	Test Report Number	Size (W x H)	Performance
Jeld-Wen, INC. In-swing Steel 24 GA W.E. Opaque Single Doors with Fixed Sidelites (Impact)	National Certified Testing Laboratories Report No. NCTL-210-3801-2 (2/4/2012)	112-1/2" x 81-7/8" (In-Swing)	+65 / -65 psf (Wind Zone 4)
Jeld-Wen, INC. Out-swing Steel 24 GA W.E. Opaque Single Doors with Fixed Sidelites (Impact)	National Certified Testing Laboratories Report No. NCTL-210-3801-2 (2/4/2012)	112-1/2" x 80-3/4" (Out-swing)	+65 / -65 psf (Wind Zone 4)

Testing documented in Table 1 was conducted by National Certified Testing Laboratories of Orlando, Florida (Florida Department of Business & Professional Regulation Test Lab No. TST1589 – laboratory was approved at the time of testing). The testing documented above is certified by NAMI under certification number NI012741-R1 (Expires 4/30/2028).

ANALYSES:

Summary of Test Results

Table 2: Plastics Checklist of Test Results

Product	Test Report Number	Test Standard	Test Results
Dylite Expandable Polystyrene	Intertek Report No. 3113726SAT-001 Rev. 1 (3/13/2009)	ASTM E84	Flame Spread: 35 Smoke Developed: 450
White PVC 1476 5110	Intertek Report No. P6504.01-106-18-R0 (8/23/2023)	ASTM D638 (before and after G155)	+9.5%
		ASTM D1929	824°F (440°C)
		ASTM D2843	71.8
		ASTM D635	Class CC1
White PVC 1476 5290	Intertek Report No. P6504.01-106-18-R0 (8/23/2023)	ASTM D638 (before and after G155)	+9.5%
		ASTM D1929	806°F (430°C)
		ASTM D2843	72.6
		ASTM D635	Class CC1
SMC Skin	Element Report No. ESP010982P (2/26/2013)	ASTM D638 (before and after G155)	-2.2%
		ASTM D1929	770°F (410°C)
		ASTM D2843	62
		ASTM D635	Class CC2

Testing documented in Table 2 was conducted by Intertek of York, Pennsylvania (Florida Department of Business & Professional Regulation Test Lab No. TST1558) and Intertek of Elmendorf, Texas (Florida Department of Business & Professional Regulation Test Lab No. TST1585) and Element Materials Technology of St Paul, Minnesota.

The test results listed in Table 2 meet the requirements listed in Miami-Dade County Checklist #0445, *For the Approval of: Plastic and Foam Plastic*.

As-Tested Installation Analysis

For air/water/structural testing, the test specimen was secured to a Southern-Yellow-Pine wood test buck with #10 wood screws (1-1/2" min. embedment) at the head, sill, and jambs. The as tested installation method is evaluated on Pages 7 and 8. These capacities will be used to prove acceptable anchors and substrates for the product.

Alternate Anchorages

Calculations on Pages 9 through 15 determine the design capacity of alternate installation anchorages for the product.

Anchorages Requirements

As-tested spacing must be maintained. It must be determined that the anchorages are not overloaded for the approved product size and design pressures. Calculations presented on Page 16 show the alternate anchorages are acceptable for the established product performance.

Anchorage requirements established by this report are accurately presented in Drawing D1000369.

As-Tested Installation – Through Frame to Wood

Anchor: #10 x 3" Wood Screw
(1-1/2" min embedment})

Details: 0.719" thick wood frame (G = 0.42)
No shim space was utilized.

Substrate: Southern Yellow Pine wood test buck (SYP, G = 0.55)

Wood Screw Capacity (Shear)

Z' = 143 lb (See Following Page)

Design Capacity of the Connection = 143 lb

Lateral Design Strength of Wood Connections

Data

Project: Contours Steel Wood Edge Opaque Inswing W/Sidelites
Comments: As-tested Installation 1-1/2" min embedment

Fastener

Fastener	=	#10 Wood Screw	
Shank Dia	=	0.190	in.
Root Dia.	=	0.152	in.
F_{yb}	=	80,000	psi
Fastener length	=	3.000	in.

Main Member

Material	=	SYP	
G	=	0.55	
θ	=	90	
F_e	=	5,550	psi
Thickness	=	1.500	in.

Side Member

Material	=	SPF	
G	=	0.42	
θ	=	90	
F_{es}	=	3,350	psi
Thickness	=	0.719	in.

Calculations

Lateral Bearing Factors

D	=	0.152	in.	k_1	=	1.0460	
ℓ_m	=	1.500	in.	k_2	=	1.3956	
K_θ	=	1.25		k_3	=	1.19	
K_D	=	2.20		R_d	=	2.20	(Mode I_m, I_s)
R_e	=	1.657		R_d	=	2.20	(Mode II)
R_t	=	2.09		R_d	=	2.20	(Mode III_m, III_s, IV)

Lateral Design Values, Z

Mode I_m	=	575	lbf	
Mode I_s	=	166	lbf	
Mode II	=	174	lbf	
Mode III_m	=	186	lbf	
Mode III_s	=	89	lbf	<== Minimum Value
Mode IV	=	111	lbf	

Adjustment Factors

C_D	=	1.6	C_Δ	=	1.0
Wet Service Factor			Is fastener installed in end grain?		No
Fabrication/In-Service		Dry/Dry	C_{eg}	=	1.00
C_M	=	1.0	Is fastener part of a diaphragm?		No
In service temperature		T≤100°F	C_{di}	=	1.0
C_t	=	1.0	Is fastener toe-nailed?		No
C_g	=	1.0	C_{tn}	=	1.00

Adjusted Design Value, Z

Z' = 143 lbf

Alternate Installation – Strap Anchor to Wood

Anchor: (2) #10 x 2" Flat head screw securing the strap to the substrate
1/4" max shim space

Details: 20 gauge (0.033" thick) 33 KSI steel strap anchor w/ two #10 screws securing the strap to the frame
1-1/2" thick wood frame

Substrate: Spruce-Pine-Fir 2x Wood Substrate (G = 0.42 min.)

Wood Screw Capacity (Shear)

Z' = 155 lb (See Following Page)

Bending of #10 x 2" flat head screw

L = 1/4" (maximum shim space)

$S = \pi d^3 / 32 = \pi (0.145")^3 / 32 = 0.000299$ in^3

$F_b = (1.3)(0.6 F_y) = (1.3)(0.6)(90{,}000$ psi$) = 70{,}200$ psi (1.3 for weak axis bending)

$F_b = M / S = (V) (L/2) / S$ (L/2 for guided bending)

$V = 2 S F_b / L = (2)(0.000299$ in3$)(70{,}200$ psi$) / 1/4"$

V = 168 lb

Bearing Capacity (of #10 screw on frame)

$P_b = F_e D t / K_D = (3{,}350$ psi$)(0.164")(0.719")/(10(0.164) + 0.5) =$ 184 lb

Bearing Capacity (of strap anchor)

$P_b = 2.7 D t F_{tu} = 2.7(0.164")(0.033")(45{,}000$ psi$) = 657$ lb

$P_{allow} = 657$ lb $/ 3.0 =$ 219 lb

Design Capacity of the Connection = 155 lb per anchor

Lateral Design Strength of Wood Connections

Data

Project: Contours Steel Wood Edge Opaque Inswing w/Sidelites
Comments: Steel Strap Installation 1-1/2" min embedment

Fastener

Fastener	=	#10 Wood Screw	
Shank Dia	=	0.190	in.
Root Dia.	=	0.152	in.
F_{yb}	=	80,000	psi
Fastener length	=	1.500	in.

Main Member

Material	=	SPF	
G	=	0.42	
θ	=	90	
F_e	=	3,350	psi
Thickness	=	1.500	in.

Side Member

Material	=	ASTM A 653, Grade 33 Steel	
G	=	N/A	
θ	=	90	
F_{es}	=	61,850	psi
Thickness	=	0.033	in.

Calculations

Lateral Bearing Factors

D	=	0.152	in.	k_1	=	0.8550	
ℓ_m	=	1.277	in.	k_2	=	0.5357	
K_θ	=	1.25		k_3	=	26.07	
K_D	=	2.20		R_d	=	2.20	(Mode I_m, I_s)
R_e	=	0.054		R_d	=	2.20	(Mode II)
R_t	=	38.70		R_d	=	2.20	(Mode III_m, III_s, IV)

Lateral Design Values, Z

Mode I_m	=	296	lbf	
Mode I_s	=	141	lbf	
Mode II	=	121	lbf	
Mode III_m	=	143	lbf	
Mode III_s	=	97	lbf	<== Minimum Value
Mode IV	=	137	lbf	

Adjustment Factors

C_D	=	1.6	C_Δ	=	1.0
Wet Service Factor			Is fastener installed in end grain?		No
Fabrication/In-Service		Dry/Dry	C_{eg}	=	1.00
C_M	=	1.0	Is fastener part of a diaphragm?		No
In service temperature		T≤100°F	C_{di}	=	1.0
C_t	=	1.0	Is fastener toe-nailed?		No
C_g	=	1.0	C_{tn}	=	1.00

Adjusted Design Value, Z

Z' = 155 lbf

Alternate Installation – Through-Frame to Concrete

Anchor: 3/16" Tapcon Anchor
- 1-1/4" min embedment
- 2-1/2" min edge distance
- 4" min anchor spacing
- 1/4" max shim space

Details: Through the Wood Frame
- 1" thick

Substrate: 3,000 psi Concrete

Anchor Capacity (Shear of 3/16" Tapcon)

P_{ss} / Ω = 181 lb (NOA-No. 16-1222.06)

Bearing Capacity (of Wood frame)

$P_b = F_e D t / K_D = (3{,}350 \text{ psi})(0.170")(1.00")/(10(0.170) + 0.5)$ = 259 lb

Bending Capacity (of 3/16" Tapcon)

L = 1/4" (maximum shim space)

$S = \pi d^3 / 32 = \pi (0.170")^3 / 32 = 0.000482 \text{ in}^3$

$F_b = (1.3)(0.6 F_y) = (1.3)(0.6)(137{,}000 \text{ psi}) = 106{,}860 \text{ psi}$ (1.3 for weak axis bending)

$F_b = M / S = (V) (L/2) / S$ (L/2 for guided bending)

$V = 2 S F_b / L = (2)(0.000482 \text{ in3})(106{,}860 \text{ psi}) / 1/4"$

V = 412 lb

Design Capacity of the Connection = 181 lb

Qualifies 1/4" Tapcon if longer length anchor is required to achieve minimum embedment

Alternate Installation – Through-Frame to CMU Block

Anchor: 1/4" Tapcon Anchor
- 1-1/4" min embedment
- 2-1/2" min edge distance
- 4" min anchor spacing
- 1/4" max shim space

Details: Through the Wood Frame
- 1" thick

Substrate: CMU Block

Anchor Capacity (Shear of 1/4" Tapcon)

P_{ss} / Ω = 161 lb (NOA-No. 16-1222.06)

Bearing Capacity (of Wood frame)

$P_b = F_e D t / K_D = (3{,}350 \text{ psi})(0.190")(1.00")/(10(0.190) + 0.5) =$ 265 lb

Bending Capacity (of 1/4" Tapcon)

L = 1/4" (maximum shim space)

$S = \pi d^3 / 32 = \pi (0.190")^3 / 32 = 0.000673 \text{ in}^3$

$F_b = (1.3)(0.6 F_y) = (1.3)(0.6)(137{,}000 \text{ psi}) = 106{,}860 \text{ psi}$ (1.3 for weak axis bending)

$F_b = M / S = (V) (L/2) / S$ (L/2 for guided bending)

$V = 2 S F_b / L = (2)(0.000673 \text{ in3})(106{,}860 \text{ psi}) / 1/4"$

V = 575 lb

Design Capacity of the Connection = 161 lb

Qualifies 1/4" Tapcon if longer length anchor is required to achieve minimum embedment

Alternate Installation – Strap Anchor to Concrete

Anchor: 3/16" Tapcon Anchor
- 1-1/4" min embedment
- 2-1/2" min edge distance
- 4" min anchor spacing
- 1/4" max shim space

Details: 20 gauge (0.033" thick) 33 KSI steel strap anchor w/ two #8 screws securing the strap to the frame

1.00" thick wood frame

Substrate: 3,000 psi Concrete

Anchor Capacity (Shear of 3/16" Tapcon)

P_{ss} / Ω = 181 lb (NOA-No. 16-1222.06)

Bearing Capacity (of 3/16" Tapcon on strap anchor)

$P_b = 2.7\ D\ t\ F_{tu} = 2.7(0.170")(0.033")(45{,}000\ psi) = 681$ lb

$P_{allow} = 681$ lb / 3.0 = 227 lb

Bearing Capacity (of #10 screw on frame)

$P_b = F_e\ D\ t\ / K_D = (3{,}350\ psi)(0.190")(1.00")/(10(0.164) + 0.5)$ = 257 lb

Bearing Capacity (of #8 screw on strap anchor)

$P_b = 2.7\ D\ t\ F_{tu} = 2.7(0.164")(0.033")(45{,}000\ psi) = 657$ lb

$P_{allow} = 657$ lb / 3.0 = 219 lb

Bending Capacity (of 3/16" Tapcon)

L = 1/4" (maximum shim space)

$S = \pi\ d^3 / 32 = \pi\ (0.170")^3 / 32 = 0.000482\ in^3$

$F_b = (1.3)(0.6\ F_y) = (1.3)(0.6)(137{,}000\ psi) = 106{,}860\ psi$ (1.3 for weak axis bending)

$F_b = M / S = (V)\ (L/2) / S$ (L/2 for guided bending)

$V = 2\ S\ F_b / L = (2)(0.000482\ in3)(106{,}860\ psi) / 1/4"$

V = 412 lb

Design Capacity of the Connection = 181 lb (one concrete anchor per strap)

Qualifies 1/4" Tapcon if longer length anchor is required to achieve minimum embedment

Alternate Installation – Strap Anchor to CMU Block

Anchor: 1/4" Tapcon Anchor
- 1-1/4" min embedment
- 2-1/2" min edge distance
- 4" min anchor spacing
- 1/4" max shim space

Details: 20 gauge (0.033" thick) 33 KSI steel strap anchor w/ two #10 screws securing the strap to the frame

1.00" thick wood frame

Substrate: CMU Block

Anchor Capacity (Shear of 1/4" Tapcon)

P_{ss} / Ω = 161 lb (NOA-No. 16-1222.06)

Bearing Capacity (of 1/4" Tapcon on strap anchor)

$P_b = 2.7\ D\ t\ F_{tu} = 2.7(0.190")(0.033")(45{,}000\ psi) = 762$ lb

$P_{allow} = 762$ lb / 3.0 = 254 lb

Bearing Capacity (of #10 screw on frame)

$P_b = F_e\ D\ t\ / K_D = (3{,}350\ psi)(0.145")(1.00")/(10(0.164) + 0.5) =$ 227 lb

Bearing Capacity (of #10 screw on strap anchor)

$P_b = 2.7\ D\ t\ F_{tu} = 2.7(0.145")(0.033")(45{,}000\ psi) = 581$ lb

P_{allow} = lb / 3.0 = 194 lb

Bending Capacity (of 1/4" Tapcon)

L = 1/4" (maximum shim space)

$S = \pi\ d^3 / 32 = \pi\ (0.190")^3 / 32 = 0.000673\ in^3$

$F_b = (1.3)(0.6\ F_y) = (1.3)(0.6)(137{,}000\ psi) = 106{,}860\ psi$ (1.3 for weak axis bending)

$F_b = M / S = (V)\ (L/2) / S$ (L/2 for guided bending)

$V = 2\ S\ F_b / L = (2)(0.000673\ in3)(106{,}860\ psi) / 1/4"$

V = 575 lb

Design Capacity of the Connection = 161 lb (one concrete anchor per strap)

Qualifies 1/4" Tapcon if longer length anchor is required to achieve minimum embedment

Alternate Installation – Strap Anchor to Wood (Cap Installation)

Anchor: Two #8 x 1-1/2" Flat head screw securing the strap to the substrate

Details: 20 gauge (0.033" thick) 33 KSI steel strap anchor w/ two #8 screws securing the strap to the frame
1.00" thick wood frame
1/4" max shim space

Substrate: Spruce-Pine-Fir 2x Wood Substrate (G = 0.42 min.)

Wood Screw Capacity (Withdrawal)

W' = 1.6(82 lb/in)(1.5 in) = 197 lb

Pull-over Capacity (of #8 screw on strap)

$P_{nov} = 1.5\ t\ d\ F_{tu} = 1.5\ (0.033")(0.332")(45{,}000\ psi) = 739\ lb$

$P_{allow} = 739\ lb / 3.0 =$ 246 lb

Bearing Capacity (of #8 screw on frame)

$P_b = F_e\ D\ t\ /K_D = (3{,}350\ psi)(0.164")(1.00")/(10(0.164) + 0.5) =$ 257 lb

Bearing Capacity (of #8 screw on strap anchor)

$P_b = 2.7\ D\ t\ F_{tu} = 2.7(0.164")(0.033")(45{,}000\ psi) = 657\ lb$

$P_{allow} = 657\ lb / 3.0 =$ 219 lb

Design Capacity of the Connection = 197 lb (one screw)

Design Capacity of the Connection = 394 lb (two screws)

Anchorage Requirements

Series/Model:	Contours Steel Wood Edge Opaque inswing w/Sidelites OXO
Test Unit Size:	112-1/2" x 81-7/8", 112-1/2" x 80-3/4"
Design Pressure:	+65.0 / -65.0 psf (112-1/2" x 81-7/8")
	+65.0 / -65.0 psf (112-1/2" x 80-3/4")

Through-Frame Installation Method

Through frame installation method is validated by the test

Through Frame Anchor Capacity = 143 lb / anchor

Alternate Installation Methods

Strap Anchor to Wood = 155 lb / anchor

Through-Frame to Concrete = 181 lb / anchor

Through-Frame to CMU Block = 161 lb / anchor

Strap Anchor to Concrete = 181 lb / anchor

Strap Anchor to CMU Block = 161 lb / anchor

Strap Anchor to Wood (Cap Installation) = 197 lb / anchor

Minimum Alternate Installation Capacity = 143 lb / anchor

155 lb > 143 lb **Alternate Anchorages OK at tested spacing**

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	11/17/2023	All	Original Report Issue
1	2/1/2024	All	Added Table 2 for the Plastic Checklist test results
2	4/23/2024	Page 5	Updated Table 2