

# DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER) NOTICE OF ACCEPTANCE (NOA)

PGT Industries, Inc. 1070 Technology Drive North Venice, FL 34275

### Scope:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami-Dade County) and/or the AHJ (in areas other than Miami-Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance if it is determined by Miami–Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

### **DESCRIPTION:** Series "AW-740" Aluminum Awning Window - L.M.I.

**APPROVAL DOCUMENT:** Drawing No. **MD-AW740LM**, titled "Awning Window Details - LM & SM", sheets 1 through 11 of 11, dated 08/08/12, with revision D dated 03/13/20, prepared by manufacturer, signed and sealed by Anthony Lynn Miller, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

# MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

**LABELING:** Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **revises NOA No. 17-0614.20** and consists of this page 1 and evidence pages E-1, E-2, E-3 and E-4, as well as approval document mentioned above.

The submitted documentation was reviewed by Manuel Perez, P.E.



8/11/20

NOA No. 20-0402.07 Expiration Date: April 11, 2023 Approval Date: August 20, 2020 Page 1

### 1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's

#### A. DRAWINGS

- 1. Manufacturer's die drawings and sections. *(Submitted under NOA No. 12-1218.07)*
- Drawing No. MD-AW740LM, titled "Awning Window Details LM & SM", sheets 1 through 11 of 11, dated 08/08/12, with revision C dated 05/25/17, signed and sealed by Anthony Lynn Miller, P.E. (Submitted under NOA No. 17-0614.20)

### **B. TESTS**

- 1. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
  - 2) Large Missile Impact Test per FBC, TAS 201-94
  - 3) Cyclic Wind Pressure Loading per FBC, TAS 203-94

along with marked-up drawings and installation diagram of a PVC sliding glass door, a PVC fixed window and an aluminum sliding glass door, using: Kodispace 4SG TPS spacer system, Duraseal<sup>®</sup> spacer system, Super Spacer<sup>®</sup> NXT<sup>TM</sup> spacer system and XL Edge<sup>TM</sup> spacer system at insulated glass, prepared by Fenestration Testing Laboratory, Inc., Test Reports No. **FTL-8717**, **FTL-8968** and **FTL-8970**, dated 11/16/15, 06/07/16 and 06/02/16 respectively, all signed and sealed by Idalmis Ortega, P.E.

# (Submitted under previous NOA No. 16-0714.23)

- 2. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
  - 2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
  - 3) Water Resistance Test, per FBC, TAS 202-94
  - 4) Forced Entry Test, per FBC 2411.3.2.1, and TAS 202-94
  - 5) Large Missile Impact Test per FBC, TAS 201-94

6) Cyclic Wind Pressure Loading per FBC, TAS 203-94 along with marked-up drawings and installation diagram of a series CA740P aluminum projected (awning) window, prepared by Fenestration Testing Laboratory, Inc. Test Report No. **FTL-7061**, dated 10/03/12, signed and sealed by Marlin D. Brinson, P.E.

(Submitted under NOA No. 12-1218.07)

# C. CALCULATIONS

- Anchor verification calculations and structural analysis, complying with FBC 5<sup>th</sup> Edition (2014) and FBC 6<sup>th</sup> Edition (2017), dated 06/09/17, prepared by manufacturer, signed and sealed by Anthony Lynn Miller, P.E. (Submitted under NOA No. 17-0614.20)
- 2. Glazing complies with ASTM E1300-04

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Manuel Perez, P.E. Product Control Examiner NOA No. 20-0402.07 Expiration Date: April 11, 2023 Approval Date: August 20, 2020

# 1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's (CONTINUED)

### **D. QUALITY ASSURANCE**

1. Miami-Dade Department of Regulatory and Economic Resources (RER).

# E. MATERIAL CERTIFICATIONS

- 1. Notice of Acceptance No. 16-1117.01 issued to Kuraray America, Inc. for their "Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers" dated 01/19/17, expiring on 07/08/19.
- 2. Notice of Acceptance No. 14-0916.11 issued to Kuraray America, Inc. for their "Kuraray SentryGlas® (Clear and White) Glass Interlayers" dated 06/25/15, expiring on 07/04/18.

# F. STATEMENTS

- Statement letter of conformance, complying with FBC 5<sup>th</sup> Edition (2014) and with FBC 6<sup>th</sup> Edition (2017), dated August 29, 2017, issued by manufacturer, signed and sealed by Anthony Lynn Miller, P.E. (Submitted under NOA No. 17-0614.20)
- Statement letter of no financial interest, dated June 9, 2015, issued by manufacturer,
  - signed and sealed by Anthony Lynn Miller, P.E.

(Submitted under NOA No. 17-0614.20)

Proposal No. 16-0125 issued by the Product Control Section, dated March 09, 2016, signed by Ishaq Chanda, P.E.
 (Submitted under NOA No. 16-0714.23)

# G. OTHERS

1. Notice of Acceptance No. 16-0714.23, issued to PGT Industries, Inc. for their Series "AW-740" Aluminum Awning Window - L.M.I. approved on 09/08/16 and expiring on 04/11/18.

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Manuel Perez, P.E. Product Control Examiner NOA No. 20-0402.07 Expiration Date: April 11, 2023 Approval Date: August 20, 2020

### 2. NEW EVIDENCE SUBMITTED

#### A. DRAWINGS

1. Drawing No. **MD-AW740LM**, titled "Awning Window Details – LM & SM", sheets 1 through 11 of 11, dated 08/08/12, with revision D dated 03/13/20, signed and sealed by Anthony Lynn Miller, P.E.

# **B. TESTS**

- 1. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
  - 2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
  - 3) Water Resistance Test, per FBC, TAS 202-94
  - 4) Large Missile Impact Test per FBC, TAS 201-94
  - 5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
  - 6) Forced Entry Test, per ASTM F588 and TAS 202-94

along with marked-up drawings and installation diagram of all PGT Industries, Inc. representative units listed below and tested to qualify **Dowsil 791** and **Dowsil 983** silicones, prepared by Fenestration Testing Laboratory, Inc., Test Reports No.: **FTL-7897**, PGT PW5520 PVC Fixed Window (unit 6 in proposal), dated 09/03/14 **FTL-20-2107.1**, PGT SGD780 Aluminum Sliding Glass Door (unit 7 in proposal) **FTL-20-2107.2**, PGT CA740 Alum. Outswing Casement Window (unit 8 in proposal) **FTL-20-2107.3**, PGT PW7620A Aluminum Fixed Window (unit 9 in proposal) and **FTL-20-2107.4**, PGT PW7620A Aluminum Fixed Window (unit 10 in proposal) dated 07/13/20, all signed and sealed by Idalmis Ortega, P.E

# C. CALCULATIONS

 Anchor verification calculations and structural analysis, complying with FBC 6<sup>th</sup> Edition (2017), prepared by manufacturer, dated 06/09/17 and revised and updated to the FBC 7<sup>th</sup> Edition (2020) on 03/25/20, signed and sealed by Anthony Lynn Miller, P.E.

# D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER)

# E. MATERIAL CERTIFICATIONS

- 1. Notice of Acceptance No. 19-0305.02 issued to Kuraray America, Inc. for their "Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers" dated 05/09/19, expiring on 07/08/24.
- 2. Notice of Acceptance No. 18-0725.11 issued to Kuraray America, Inc. for their "Kuraray SentryGlas<sup>®</sup> Xtra<sup>™</sup> (SGX<sup>™</sup>) Clear Glass Interlayer" dated 05/23/19, expiring on 05/23/24.

Manuel Perez, P.E. Product Control Examiner NOA No. 20-0402.07 Expiration Date: April 11, 2023 Approval Date: August 20, 2020

# 2. NEW EVIDENCE SUBMITTED (CONTINUED)

### F. STATEMENTS

- 1. Statement letter of conformance, complying with FBC 6<sup>th</sup> Edition (2017) and the FBC 7<sup>th</sup> Edition (2020), dated March 10, 2020, issued by manufacturer, signed and sealed by Anthony Lynn Miller, P.E.
- 2. Statement letter of no financial interest, dated March 10, 2020, issued by manufacturer, signed and sealed by Anthony Lynn Miller, P.E.
- **3.** Proposal No. **19-1155 TP** issued by the Product Control Section, dated January 10, 2020, signed by Ishaq Chanda, P.E.

# G. OTHERS

1. Notice of Acceptance No. **17-0614.20**, issued to PGT Industries, Inc. for their Series "AW-740" Aluminum Awning Window - L.M.I. approved on 09/05/17 and expiring on 04/11/23.

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Manuel Perez, P.E. Product Control Examiner NOA No. 20-0402.07 Expiration Date: April 11, 2023 Approval Date: August 20, 2020

### **GENERAL NOTES: SERIES 740** IMPACT-RESISTANT AWNING WINDOW

1) THIS PRODUCT HAS BEEN DESIGNED & TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, INCLUDING THE HIGH VELOCITY HURRICANE ZONE (HVHZ). FOR INSULATED GLASS INSTALLATIONS ABOVE 30' IN THE HVHZ, THE OUTBOARD LITE (CAP) MUST TEMPERED.

2) SHUTTERS ARE NOT REQUIRED WHEN USED IN WIND-BORNE DEBRIS REGIONS.

3) FOR MASONRY APPLICATIONS IN MIAMI-DADE COUNTY, USE ONLY MIAMI-DADE COUNTY APPROVED MASONRY ANCHORS. MATERIALS USED FOR ANCHOR EVALUATIONS WERE SOUTHERN PINE, ASTM C90 CONCRETE MASONRY UNITS AND CONCRETE WITH MIN. KSI PER ANCHOR TYPE, SEE TABLE 3, SHEET 4.

4) ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED 1X INSTALLATIONS. 1X WOOD BUCKS ARE OPTIONAL IF UNIT IS INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS DEPICTED AS 2X ARE 1-1/2" THICK OR GREATER. 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.

5) ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO. USE ANCHORS OF SUFFICIENT EMBEDMENT AS SPECIFIED ON TABLE 3, SHEET 4. NARROW JOINT SEALANT IS USED ON ALL FOUR CORNERS OF THE FRAME. INSTALLATION ANCHORS SHOULD BE SEALED. OVERALL SEALING/FLASHING STRATEGY FOR WATER RESISTANCE OF INSTALLATION SHALL BE DONE BY OTHERS AND IS BEYOND THE SCOPE OF THESE INSTRUCTIONS.

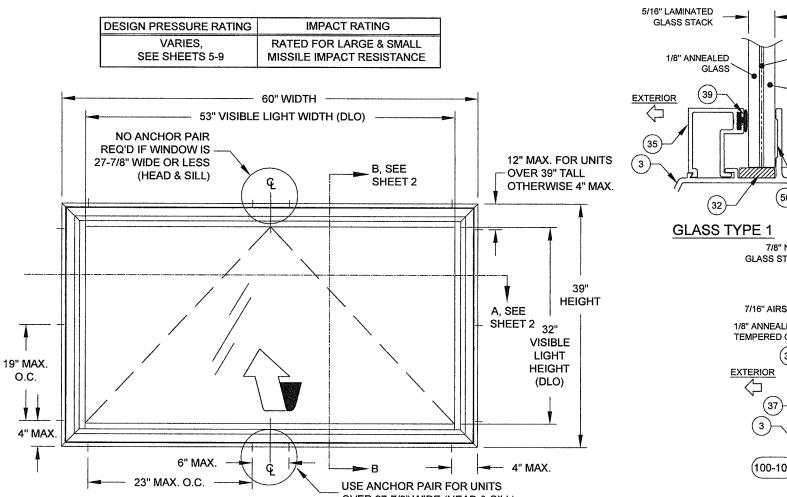
6) SHIMS ARE REQUIRED AT EACH ANCHOR LOCATION WHERE THE PRODUCT IS NOT FLUSH TO THE SUBSTRATE. USE SHIMS CAPABLE OF TRANSFERRING APPLIED LOADS. WOOD BUCKS, BY OTHERS, MUST BE SUFFICIENTLY ANCHORED TO RESIST LOADS IMPOSED ON THEM BY THE GENERAL NOTES. WINDOW.

#### 7) DESIGN PRESSURES:

INSTALLATION ... A. NEGATIVE DESIGN LOADS BASED ON STRUCTURAL TEST ASSEMBLY TUBE DETAILS. PRESSURE, FRAME ANALYSIS AND GLASS PER ASTM E1300. ANCHOR SPECIFICATIONS. **B. POSITIVE DESIGN LOADS BASED ON WATER TEST** ANCHOR QUANTITIES. PRESSURE, STRUCTURAL TEST PRESSURE, FRAME DESIGN PRESSURES. ANALYSIS AND GLASS PER ASTM E1300. ASSEMBLY DETAILS/BOM. C. DESIGN LOADS ARE BASED ON ALLOWABLE STRESS EXTRUSIONS/SPACER ... DESIGN, ASD.

8) THE ANCHORAGE METHODS SHOWN HAVE BEEN DESIGNED TO RESIST THE WINDLOADS CORRESPONDING TO THE REQUIRED DESIGN PRESSURE. THE 33-1/3% STRESS INCREASE HAS NOT BEEN USED IN THE DESIGN OF THIS PRODUCT. THE 1.6 LOAD DURATION FACTOR WAS USED FOR THE EVALUATION OF ANCHORS INTO WOOD. ANCHORS THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE FOR CORROSION RESISTANCE.

9) REFERENCES: TEST REPORTS FTL-7061, 3579, 3580, 3724; DEWALT ULTRACON+ NOA: ELCO ULTRACON NOA: DEWALT/ELCO CRETEFLEX NOA; ANSI/AF&PA NDS FOR WOOD CONSTRUCTION AND ADM ALUMINUM DESIGN MANUAL.



# TYP. ELEVATION OF AWNING WINDOW

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TABI	LE 1:	
	Glass Types	Sheet
1	5/16" Lami (1/8" An090" PVB - 1/8" An)	5
2	7/16" Lami (3/16" An090" SG - 3/16" An)	6
3	7/8" Lami. IG (1/8" An - 7/16" Air - 1/8" An090" PVB - 1/8" An)	7
4	7/8" Lami. IG (1/8" T - 7/16" Air - 1/8" An090" PVB - 1/8" An)	8
5	7/8" Lami. IG (3/16" An - 1/4" Air - 3/16" An090" SG - 3/16" An)	9
6	7/8" Lami. IG (3/16" T - 1/4" Air - 3/16" An090" SG - 3/16" An)	9

"PVB"= TROSIFOL<sup>®</sup> PVB BY KURARAY AMERICA, INC. "SG"= SENTRYGLAS<sup>®</sup> BY KURARAY AMERICA, INC.

#### CODES / STANDARDS USED:

2020 FLORIDA BUILDING CODE (FBC), 7TH EDITION

3

5-9

10

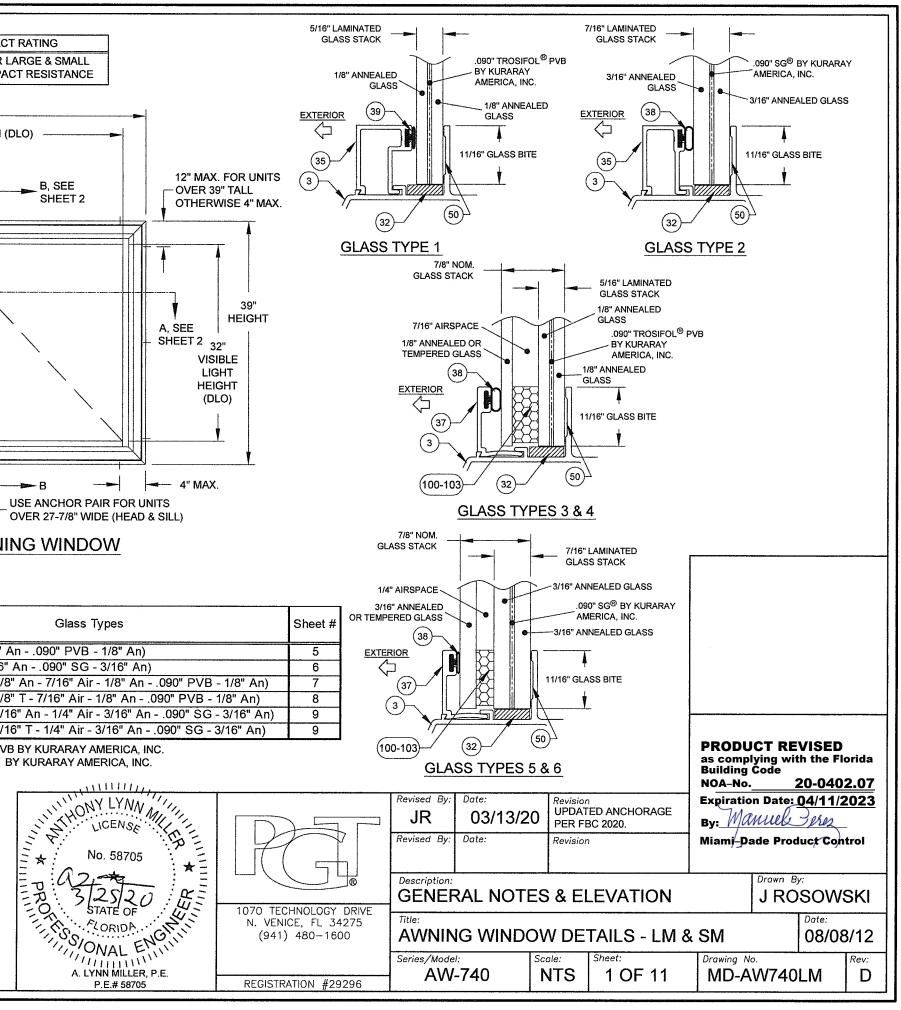
... 11

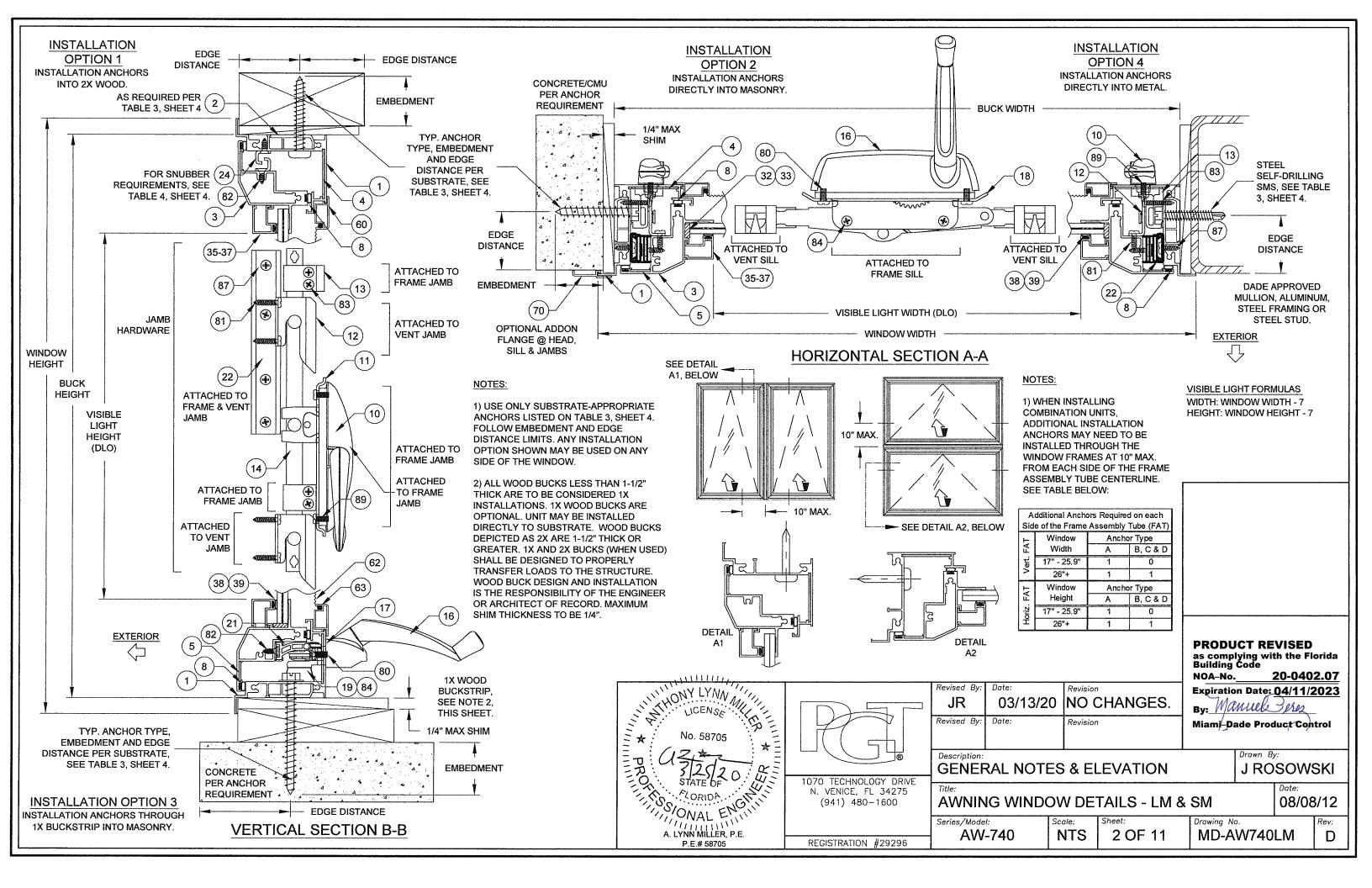
- 2017 FLORIDA BUILDING CODE (FBC), 6TH EDITION
- ASTM E1300-04

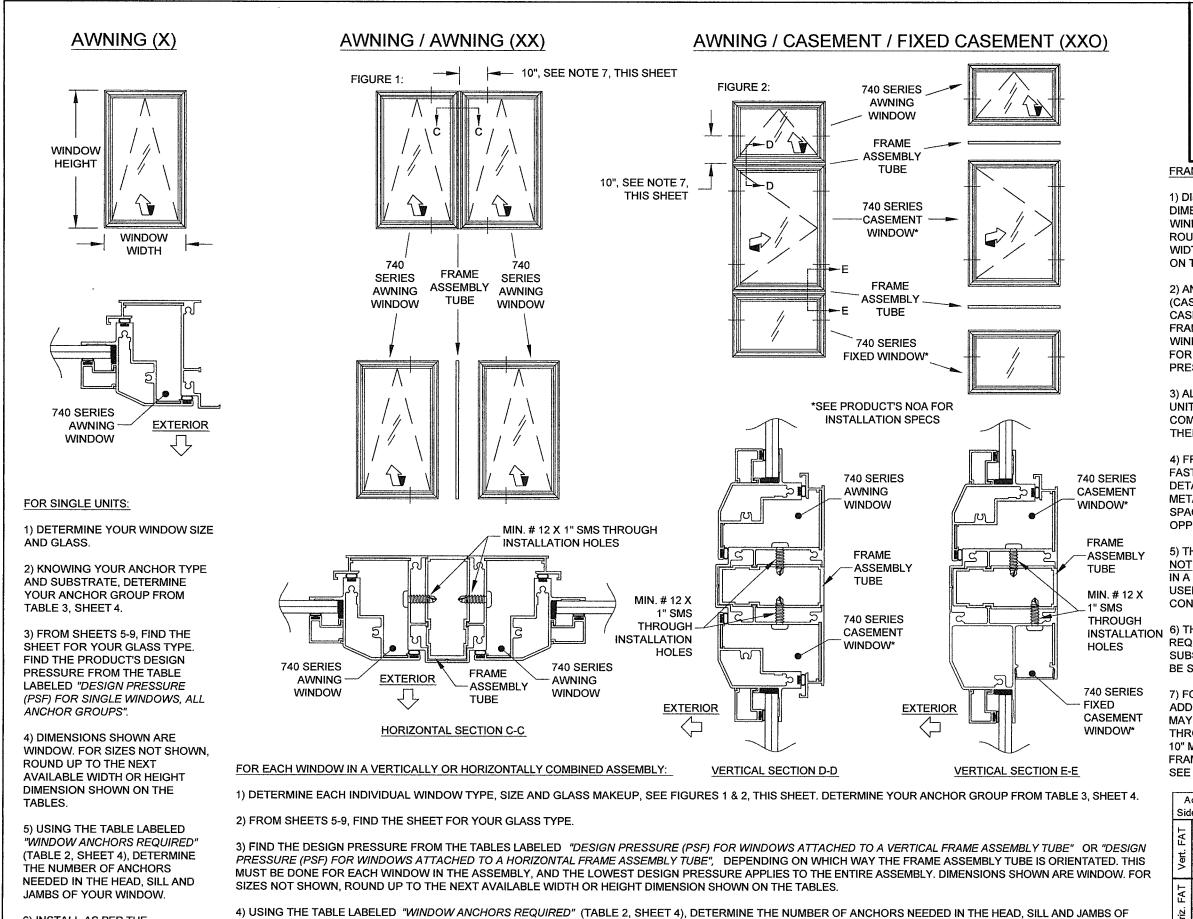
ELEVATION.

GLAZING DETAILS.

- ANSI/AF&PA NDS-2018 FOR WOOD CONSTRUCTION
- ALUMINUM DESIGN MANUAL, ADM-2015
- AISI S100-16
- AISC 360-16







6) INSTALL AS PER THE **INSTRUCTIONS ON SHEET 2.** 

YOUR WINDOW.

5) INSTALL AS PER THE INSTRUCTIONS ON SHEETS 2-3. NOTE THAT ADDITIONAL ANCHORS THROUGH THE WINDOW FRAME INTO THE SUBSTRATE MAY BE REQUIRED (SEE SHEET 2), AND THAT MIN. # 12 X 1" ANCHORS ARE TO BE USED THROUGH THE FRAME INTO THE FRAME ASSEMBLY TUBE (SEE DETAILS ON THIS SHEET).

	PRODUCT REVISED as complying with the Florida Building Code NOA-No. 20-0402.07 Expiration Date: 04/11/2023 By: Manuel Strange Miami-Dade Product Control
<ul> <li>FRAME ASSEMBLY TUBE NOTES:</li> <li>1) DIMENSIONS SHOWN ARE WINDOW DIMENSIONS FOR EACH INDIVIDUAL WINDOW. FOR SIZES NOT SHOWN, ROUND UP TO THE NEXT AVAILABLE WIDTH OR HEIGHT DIMENSION SHOWN ON THE TABLES.</li> <li>2) ANY 740-SERIES PRODUCT (CASEMENT, AWNING OR FIXED CASEMENT, AWNING OR FIXED CASEMENT, AWNING OR FIXED CASEMENT, MAY BE ATTACHED TO THE FRAME ASSEMBLY TUBE. FOR ALL WINDOWS, USE THE WINDOW'S NOA FOR ANCHORAGE, SIZE AND DESIGN PRESSURE LIMITATIONS.</li> <li>3) ALL WINDOWS IN THE COMBINATION UNIT MUST BE ABLE TO INDIVIDUALLY COMPLY WITH THE REQUIREMENTS OF THEIR RESPECTIVE NOA.</li> <li>4) FRAME ASSEMBLY TUBE TO BE FASTENED TO WINDOW, AS SHOW IN DETAILS, WITH MIN. #12 X 1" SHEET METAL SCREWS. USE THE SAME SPACING AND QUANTITY AS THE OPPOSITE FRAME MEMBER.</li> <li>5) THE FRAME ASSEMBLY TUBE MAY NOT EXCEED 62" IN LENGTH (AS USED IN A 63" FLANGED WINDOW) OR BE USED IN TEE OR CROSS CONFIGURATIONS.</li> </ul>	Revised By:     Date:     Date:       J ROSOWSKI     03/13/20     NO CHANGES.       Drawn By:     03/13/20     NO CHANGES.       Drawn By:     03/03/12     NO CHANGES.       Drawn By:     08/08/12     NO CHANGES.       Drawn By:     08/08/12     NO CHANGES.       Drawn By:     08/08/12     Note:       Description:     Date:     NO CHANGES.       Title:     Date:     NO CHANGES.       Title:     Date:     NO CHANGES.       Title:     Date:     Note:       AWNING WINDOW DETAILS     LM & SM       Series/Model:     Scole:     Scole:       AW-740     NTS     Scole:
6) THE FRAME ASSEMBLY TUBE IS NOT REQUIRED TO BE CLIPPED TO THE SUBSTRATE. ALL EXTERIOR JOINTS TO BE SEALED BY INSTALLER. 7) FOR ALL COMBINATION UNITS, ADDITIONAL INSTALLATION ANCHORS MAY NEED TO BE INSTALLED THROUGH THE WINDOW FRAMES AT 10" MAX. FROM EACH SIDE OF THE FRAME ASSEMBLY TUBE CENTERLINE. SEE TABLE BELOW: Additional Anchors Required on each Side of the Frame Assembly Tube (FAT) Window Anchor Type Width A B, C & D 17" - 25.9" 1 0 26"+ 1 1 Window Anchor Type Height A B, C & D 17" - 25.9" 1 0	No. 58705 No. 58705

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		Head/Sill	2	2	2	2	4	2	2	2	4	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	6	4	4	4	6	4	4	4	8	6	4	4	8	6	6	4
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	20-10/10	Head/Sill	2	2	2	2	4	2	2	2	4	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	6	4	4	4	8	4	4	4	8	6	4	4	10	6	6	4
	39"	Jamb	5	3	3	2	5	3	3	2	5	4	3	2	6	4	3	2	6	4	3	2	6	4	3	2	6	4	3	2	6	4	3	2	5	4	3	2	5	3	3	2
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Window Height	67"	Jamb	10	6	5	4	10	7	6	4	11	7	6	4	11	7	6	4	11	7	6	4	11	7	6	4																
	01	Head/Sill	2	2	2	2	4	2	2	2	4	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4																
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	84"	Jamb	12	8	7	5	14	9	7	5	14	9	8	5						T		T		Τ										1				T		T		Γ
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USE THIS TABLE FOR ALL WINDOWS PER THE ELEVATIONS ON SHEET 1. DIMENSIONS SHOWN ARE WINDOW TIP-TO-TIP. FOR SIZES NOT SHOWN, ROUND UP TO THE NEXT AVAILABLE WIDTH OR HEIGHT DIMENSION SHOWN ON THE TABLE.

TABLE 3:

			Min.	Min.	Min.	Anchor
Group	Anchor	Substrate	Edge	O.C.	Embedment	Plate
			Distance	Distance	Linbedmein	Required
	#12 steel SMS (G5) or	S. Pine	5/8"	1"	1-3/8"	No
	#12 steel SMS (G5) or #14 steel SMS (G5) or	6063-T5 Alum.	3/8"	5/8"	.063"	No
	#14 410 SS SMS	A36 Steel	3/8"	5/8"	.050"	No
А	#14 410 00 0000	A653 Stud, Gr. 33	3/8"	5/8"	.045", 20 Ga.	No
1		3k Concrete	1"	3"	1-3/4"	No
	1/4" steel Ultracon+	Hollow Block	1"	3"	1-1/4"	No
		S. Pine	1"	1"	1-3/8"	No
		2.85k Concrete	2-1/2"	4"	1-3/8"	No
в	1/4" steel Ultracon	Hollow Block	1"	6"	1-1/4"	No
		Hollow Block	2-1/2"	5"	1-1/4"	No
	1/4" steel Ultracon	Hollow Block	1"	6"	1-1/4"	Yes
	1/4" steel Ultracon+	3k Concrete	1"	4"	1-3/8"	Yes
С	1/4 Steel Ollacon+	Hollow Block	1"	3"	1-1/4"	Yes
	1/4" 410 SS CreteFlex	3.35k Concrete	1"	5"	1-3/4"	No
	1/4 410 55 Creterlex	Hollow Block	2-1/2"	5"	1-1/4"	No
	#12 steel SMS (G5) or	S. Pine	5/8"	1"	1-3/8"	Yes
	#12 410 SS SMS or	6063-T5 Alum.	3/8"	5/8"	.0713"	Yes
	#14 steel SMS (G5) or	A36 Steel	3/8"	5/8"	.050"	Yes
	#14 410 SS SMS	A653 Stud, Gr. 33	3/8"	5/8"	.045", 18 Ga.	Yes
		2.85k Concrete	1"	<b>4</b> "	1-3/4"	Yes
	1/4" steel Ultracon	2.85k Concrete	2-1/2"	4"	1-3/8"	Yes
	1/4 steel Offiacon	Hollow Block	2-1/2"	5"	1-1/4"	Yes
		Filled Block	2-1/2"	4۳	1-3/4"	Yes
D		3.35k Concrete	1"	6"	1-3/4"	Yes
	1/4" 410 SS CreteFlex	3.35k Concrete	2-1/2"	6"	1"	Yes
		Hollow Block	2-1/2"	6"	1-1/4"	Yes
		3.5k Concrete	1-1/4"	5"	1-3/4"	No
	5/16" steel Ultracon	Hollow Block	3-1/8"	5"	1-1/4"	No
		Filled Block	2-1/2"	5"	1-3/4"	No
		3k Concrete	1-5/16"	4"	1-3/8"	Yes
	1/4" steel Ultracon+	Hollow Block	1-3/4"	3"	1-1/4"	Yes
		S. Pine	1"	1"	1-3/8"	Yes

1) WHERE SUBSTRATE CONDITIONS REQUIRE ANCHORAGE FROM MORE THAN ONE OF THE ANCHOR GROUPS ABOVE, CHOOSE THE ANCHOR GROUP OF THE LOWEST LETTER FOR ALL SUBSEQUENT TABLES IN THIS APPROVAL.

2) ANCHOR MUST EXTEND A MIMIMUM OF 3 THREADS BEYOND ANY METAL SUBSTRATE. 3) ANCHORS MAY BE HEXHEAD, PANHEAD OR FLATHEAD.

4) FOR STEEL STUDS, MIN. FU = 45 KSI, MIN FY = 33 KSI.

EXAMPLE 1: FOR WINDOW COMBINATION SHOWN BELOW; 7/16" ANNEALED LAMINATED GLASS, 1/4" MASONRY ANCHORS INTO CONCRETE, +70/-70 PSF DP REQUIRED

AWNING ANCHORS:

A) FROM TABLE 9, ANCHORS C & D ALLOW A DP OF +70/-90.

B) FOR THE JAMB, FROM TABLE 3, ANCHORS IN GROUP C HAVE THE ANCHOR AND SUBSTRATE DESIRED AND DOES NOT REQUIRE THE ANCHOR PLATE IF USING THE CRETEFLEX ANCHOR.

C) FROM TABLE 2, 6 ANCHORS ARE REQUIRED IN EACH JAMB.

C) SIMILARLY, 2 ANCHORS ARE REQUIRED IN THE HEAD & SILL.

D) DISTRIBUTE ANCHORS FOLLOWING GUIDELINES FROM ELEVATION ON SHEET 1.

E) PER RULES ON SHEETS 2 & 3, INSTALL 1 ADDITIONAL ANCHOR ON THE FRAME ASSEMBLY TUBE SIDE OF THE AWNING (HEAD & SILL).

#### FIXED CASEMENT ANCHORS:

A) FROM TABLE 9, A 34" X 61" FIXED CASEMENT WINDOW HAS A DESIGN PRESSURE EXCEEDING THE REQUIREMENT OF +70/-70 USING ANCHORS C OR D.

B) FOR THE JAMB, FROM TABLE 3, ANCHOR TYPE C HAS THE ANCHOR AND SUBSTRATE DESIRED AND DOES NOT REQUIRE THE ANCHOR PLATE IF USING THE CRETEFLEX ANCHOR.

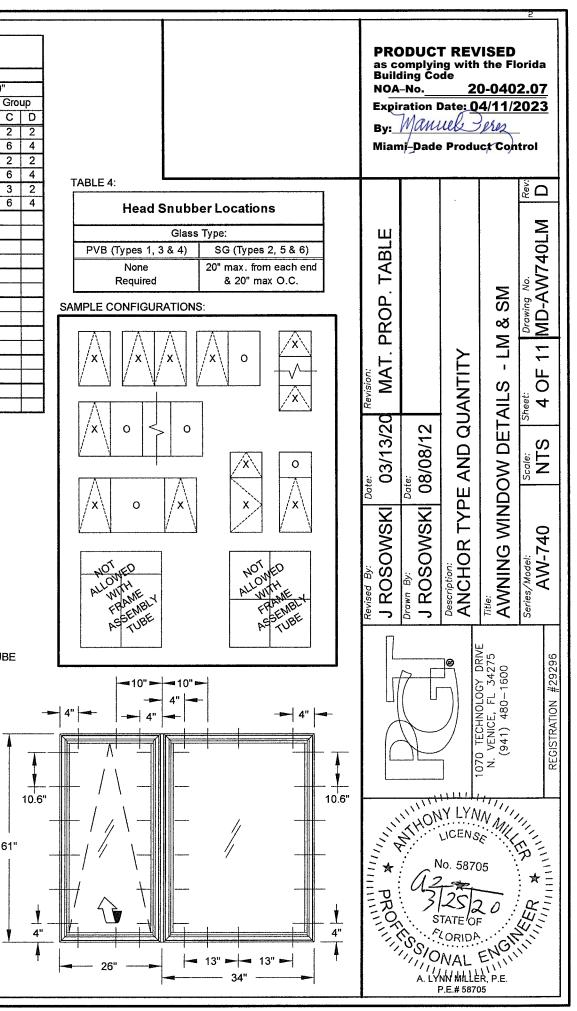
C) FROM TABLE 2A, 6 ANCHORS ARE REQUIRED IN EACH JAMB.

D) SIMILARLY, 3 ANCHORS ARE REQUIRED IN THE HEAD & SILL.

E) DISTRIBUTE ANCHORS FOLLOWING GUIDELINES FROM ELEVATION ON SHEET 1.

F) PER RULES ON SHEET 2, INSTALL 1 ADDITIONAL ANCHOR ON THE FRAME ASSEMBLY TUBE SIDE OF THE FIXED CASEMENT (HEAD & SILL).

Material	Min. Fy	Min. Fu
Steel Screw	92 ksi	120 ksi
410 Screw	90 ksi	110 ksi
Elco UltraCon®	155 ksi	177 ksi
1/4" DeWalt UltraCon+®	148 ksi	164 ksi
410 SS DeWalt/Elco CreteFlex®	127.4 ksi	189.7 ksi
6063-T5 Aluminum	16 ksi	22 ksi
A36 Steel	36 ksi	58 ksi
Gr. 33 Steel Stud	33 ksi	45 ksi



1) 5/16" LAMI (1/8 AN - .090" PVB - 1/8 AN)

"PVB"= TROSIFOL<sup>®</sup>PVB BY KURARAY AMERICA, INC.

"P						
•		60"	53-1/8"	46"	37"	
		+70/- 90	+70/- 90	+70/- 90	+70/- 90	90
	1	+70/- 90	+70/- 90	+70/~ 90	+70/- 90	90
		+70/-71.2	+70/-81.1	+70/- 90	+70/- 90	90
· · · · · · · · · · · · · · · · · · ·	·····			+70/-77.9	+70/-89.2	30
	WINDOW				+70/-74.3	9.6
	HEIGHT				+70/- 70.1	5.6
	The lot in					.4
	l					

TABLE 5:

under 23"

25-15/16"

27-7/8"

	under 23"	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/
	25-15/16"	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70
	39"	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/-81.1	+70/-
Height	50-5/8"	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/- 90	+70/-89.2	+70/-77.9		
Ξ	60"	+70/- 90	+70/- 90	+70/- 90	+70/-86.5	+70/-83.7	+70/-79.6	+70/-74.3			
ð	63"	+70/- 90	+70/- 90	+70/- 90	+70/-82.3	+70/-79.4	+70/-75.6	+70/- 70.1			
Windov	67"	+70/- 90	+70/- 90	+70/- 83.5	+70/- 76.3	+70/- 73.4	+/- 69.4				
_	72"	+70/- 90	+70/-87.2	+70/- 77.4	+/- 69.3	+/- 65.4					1
	76"	+70/- 90	+70/- 84.6	+70/- 75.2	+/- 65			····			
	84"	+70/- 90	+70/- 80.4	+70/- 70.8						······································	İ

30-3/4"

Design Pressure (psf) for Single Windows, All Anchor Groups Window Width

34"

32"



**SEE SHEETS 1** & 4 FOR

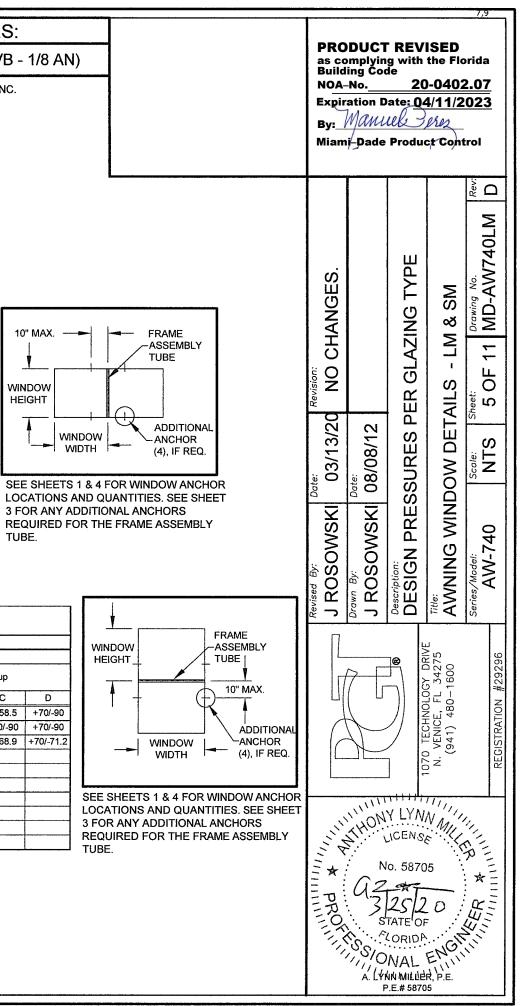
TABLE 6:

									Desigr	) Pressure (	psf) for Wi	ndows Atta	ched to a V	ertical Fran	ne Assemb	ly Tube							
	· · · · · · · · · · · · · · · · · · ·											Window	v Width		·								
			unde	r 23"			25-15/16"			27-7/8"		30-	3/4"	32	2"	3	4"	3	7"	4	6"	53-1/8"	60"
			Anchor	Group		A	nchor Grou	р	A	nchor Grou	p	Ancho	Group	Anchor	Group	Anchor	Group	Ancho	Group	Ancho	Group	Anchor Group	Ancho Group
		Α	В	С	D	A	В	C&D	А	В	C&D	A	B, C & D	А	B, C & D	А	B, C & D	Α	B, C & D	А	B, C & D	All	All
	under 23"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-9
5	25-15/16"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-9
Ĩ [	39"	+70/-90	+70/-75.2	+70/-89.9	+70/-90	+70/-83.1	+70/-90	+70/-90	+70/-77.4	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-87.4	+70/-90	+70/-90	+70/-90	+70/-81.1	+70/-71.
§ [	50-5/8"	+70/-72.3	+/-57.9	+/-69.3	+70/-90	+/-64	+70/-90	+70/-90	+/-59.6	+70/-90	+70/-90	+70/-81	+70/-90	+70/-77.9	+70/-90	+70/-73.3	+70/-90	+/-67.3	+70/-89.2	+/-54.2	+70/-77.9		
	60"	+/-61	+/-48.9	+/-58.5	+70/-90	+/-54	+70/-86.6	+70/-90	+/-50.3	+70/-80.6	+70/-90	+/-68.4	+70/-86.5	+/-65.7	+70/-83.7	+/-61.8	+70/-79.6	+/-56.8	+70/-74.3				
ſ	63"	+/-58.1	+/-46.5	+/-55.7	+70/-88.7	+/-51.5	+70/-82.5	+70/-90	+/-47.9	+70/-76.8	+70/-90	+/-65.1	+70/-82.3	+/-62.6	+70/-79.4	+/-58.9	+70/-75.6	+/-54.1	+70/-70.1				

10" MAX. -----WINDOW HEIGHT WINDOW WIDTH **3 FOR ANY ADDITIONAL ANCHORS** 

TUBE.

TABLE 7: Design Pressure (psf) for Windows Attached to a Horizontal Frame Assembly Tube Window Width under 23" 25-15/16" 27-7/8" 30-3/4" 32" 34" 53-1/8" 37" 46" 60" Anchor Anchor Anchor Anchor Anchor Anchor Group Anchor Group Anchor Group Anchor Group Anchor Group Group Group Group Group Group All All All All All C&D в C&D Α А в Α В С D А в С D Α в С D +70/-90 under 23" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-86.2 +70/-90 +70/-90 +70/-79.2 +70/-90 +70/-79.5 +/-63.7 +70/-76.3 +70/-90 +/-68.9 +/-55.2 +/-66 +70/-90 +/-61 +/-48.9 +/-58.5 +70/-90 25-15/16" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-87.6 +70/-70.5 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +/-61 +70/-90 +70/-90 +70/-90 +/-54 +70/-86.6 +70/-90 +70/-90 39" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-87.4 +70/-90 +70/-90 +70/-70.3 +70/-75.1 +70/-89.9 +70/-90 +/-50.7 +/-65.1 +70/-77.8 +70/-81.1 +/-44.9 +/-57.6 +/-68.9 +70/-71.2 50-5/8" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-85.5 +70/-90 +70/-90 +70/-78.6 +70/-89.2 +70/-89.2 +/-63.2 +70/-77.9 +70/-77.9 +70/-77.9 60" +70/-90 +70/-90 +70/-90 +70/-86.5 +70/-83.7 +70/-79.6 +70/-79.6 +70/-79.6 +70/-74.3 +70/-74.3 +70/-74. 63" +70/-90 +70/-90 +70/-90 +70/-82.3 +70/-79.4 +70/-75.6 +70/-75.6 +70/-75.6 +70/-70.1 +70/-70.1 +70/-70. 67" +70/-90 +70/-90 +70/-83.5 +70/-76.3 +70/-73.4 +/-69.4 +/-69.4 +/-69.4 72" +70/-90 +70/-87.2 +70/-77.4 +/-69.3 +/-65.4 76" +70/-90 +70/-84.6 +70/-75.2 +/-65 84" +70/-90 +70/-80.4 +70/-70.8



2) 7/16" LAMI (3/16" AN - .090" SG - 3/16" AN)

"SG"= SENTRYGLAS<sup>®</sup>BY KURARAY AMERICA, INC.

SEE SHEETS 1 & 4 FOR

WINDOW

ANCHOR

LOCATIONS AND

QUANTITIES.

WINDOW

HEIGHT

\_\_WINDOW\_\_\_

WIDTH

Г				De	esign Pressure	e (psf) for Singl	e Windows, A	II Anchor Group	S		
L						Window	v Width				
		under 23"	25-15/16"	27-7/8"	30-3/4"	32"	34"	37"	46"	53-1/8"	60"
	under 23"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130
	25-15/16"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130
	39"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-128.8
Height	50-5/8"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130		
	60"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130			
Nor	63"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-129.6			
Window	67"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130				
~	72"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130			<b></b>		<u> </u>
	76"	+90/-130	+90/-130	+90/-130	+90/-130						
	84"	+90/-130	+90/-130	+90/-130							

10" MAX.		
l l		
 WINDOW HEIGHT	<b> </b>	
	Į	ŀ€
	WINDOW WIDTH	-

TABLE 9:

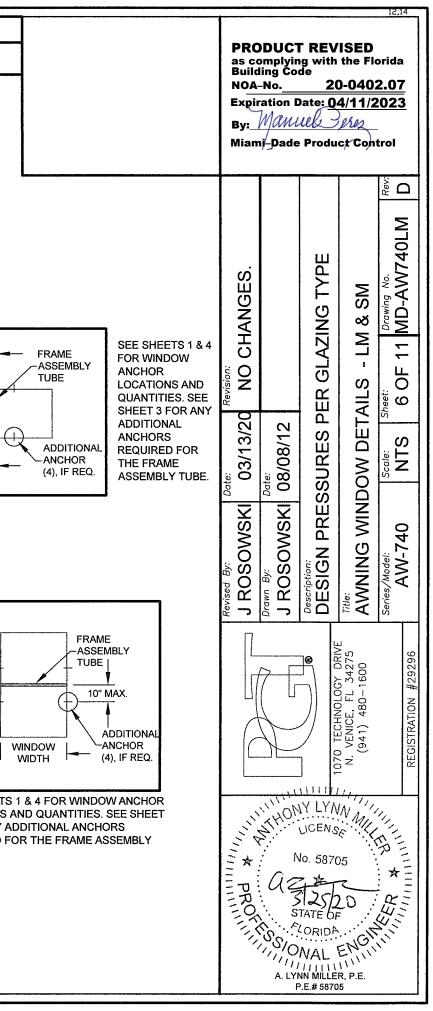
TABLE 8:

									Desigr	n Pressure	(psf) for Wi	ndows Atta	ached to a \	/ertical Frai	ne Assemi	ly Tube								
												Windo	w Width	··· ·· ·· ···										10" MAX
			unde	er 23"			25-15/16"			27-7/8"		30	-3/4"	3	2"	3	4"		37"		46"	53-1/8"	60"	
			Ancho	r Group		A	nchor Grou	ıp	A	Inchor Grou	ıp.	Ancho	or Group	Ancho	r Group	Ancho	r Group	A	nchor Grou	ip	Anchor Group	Anchor Group	Anchor Group	<u> </u>
		Α	В	С	D	A	В	C&D	A	В	C & D	A	B, C & D	A	B, C & D	A	B, C & D	A	В	C&D	All	All	All	WINDOW
Τ	under 23"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	HEIGHT
Ē,	25-15/16"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	- <u></u> -
Ë	39"	+70/-90	+70/-75.2	+70/-89.9	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	1 1
ŝ	50-5/8"	+70/-72.3	+/-57.9	+/-69.3	+70/-90	+70/-90	+70/-90	+70/-90	+70/-89.4	+70/-90	+70/-90	+70/-81	+70/-90	+70/-77.9	+70/-90	+70/-73.3	+70/-90	+70/-89.8	+70/-90	+70/-90	+70/-90			<b>→</b>
Ē	60"	+/-61	+/-48.9	+/-58.5	+70/-90	+70/-81.1	+70/-86.6	+70/-90	+70/-75.5	+70/-80.6	+70/-90	+/-68.4	+70/-90	+/-65.7	+70/-90	+/-61.8	+70/-90	+70/-75.8	+70/-90	+70/-90				
- 1	63"	+/-58,1	+/-46.5	+/-55.7	+70/-88.7	+70/-77.2	+70/-82.5	+70/-90	+70/-71.9	+70/-76.8	+70/-90	+/-65.1	+70/-90	+/-62.6	+70/-90	+/-58.9	+70/-90	+70/-72.2	+70/-86.7	+70/-90				

TABLE 10:

									De	esign Press	sure (psf) fo	rWindows	Attached to	a Horizon	al Frame A	ssembly T	ube									
Ιſ											1.0	v	Vindow Wid	lh												<u></u>
		under 23"	25-15/16"	27-7/8"	30-3/4"	32"		34"			37"			4	5"			53-	1/8"			6	)"		WIND	•
		Anchor Group	Anchor Group	Anchor Group	Anchor Group	Anchor Group	A	nchor Grou	ıp	A	nchor Grou	ıp		Ancho	Group			Ancho	r Group			Anchor	Group		HEIGI	+⊤↓
		All	All	Álí	All	All	A	В	C & D	A	В	C&D	A	В	С	D	A	В	С	D	A	В	С	D		
	under 23'	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-86.2	+70/-90	+70/-90	+70/-79.2	+70/-90	+70/-79.5	+/-63.7	+70/-76.3	+70/-90	+/-68.9	+/-55.2	+/-66	+70/-90	+/-61	+/-48.9	+/-58.5	+70/-90		+
	25-15/16	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-88.1	+70/-90	+70/-90	+70/-90	+70/-76.3	+70/-90	+70/-90	+70/-90	+/-67.5	+70/-86.6	+70/-90	+70/-90	( <b> </b>	
1	39"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-82	+70/-90	+70/-90	+70/-90	+70/-71	+70/-81.3	+70/-90	+70/-90	+/-62.9	+70/-72	+70/-86.2	+70/-90	1	
- Fig	50-5/8"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90										
Ť	60"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90														1
b	63"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90														
NIN NIN	67"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90																, <b>L</b>	
-	72"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90																			SEE SH	IEETS
	76"	+70/-90	+70/-90	+70/-90	+70/-90																					IONS /
L	84"	+70/-90	+70/-90	+70/-90																					3 FOR / REQUI	
																									TUBE.	

1) SEE SHEET 4 FOR ADDITIONAL SAMPLE CONFIGURATIONS. 2) SEE SHEET 4 FOR SNUBBER REQUIREMENTS.



3) 7/8" LAMI. IG: (1/8" AN - 7/16" AIR - 1/8" AN - .090" PVB - 1/8" AN)

"PVB"= TROSIFOL<sup>®</sup>PVB BY KURARAY AMERICA, INC,

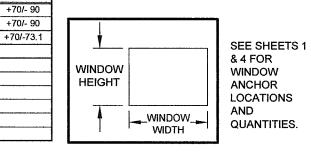


TABLE 11:

under 23"

25-15/16"

39"

50-5/8"

60"

63"

67"

72"

76"

84"

under 23"

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

25-15/16"

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

27-7/8"

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/-85.6

+70/-89.5 +70/-79.4

+70/-86.8 +70/-77.2

+70/- 82.5 +70/- 72.7

30-3/4"

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/-88.8

+70/-84.4

+70/-78.3

+70/- 71.1

+/- 66.6

										Design	Pressure	(psf) for Wi	ndows Atta	ched to a V	ertical Fran	ne Assemb	ly Tube								
													Window	w Width											
			unde	r 23"			25-15/16"			27-7/8"		30-	3/4"	3	2"	3	4"	3	7"	4	6"	53-	1/8"	60	ט"
			Ancho	r Group		A	Inchor Grou	ıp	A	Anchor Grou	ıp.	Ancho	r Group	Ancho	r Group	Ancho	r Group	Ancho	r Group	Ancho	r Group	Anchor	r Group	Anchor	r Group
		Α	В	С	D	Α	В	C & D	A	В	C&D	A	B, C & D	A	B, C & D	А	B, C & D	А	B, C & D	А	B, C & D	A	B, C & D	А	B, C &
	under 23"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-9
Ē.	25-15/16"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-9
ξſ	39"	+70/-90	+70/-75.2	+70/-89.9	+70/-90	+70/-83.1	+70/-90	+70/-90	+70/-77.4	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-87.4	+70/-90	+70/-90	+70/-90	+70/-81.2	+70/-83.2	+70/-71.9	+70/-73
§Г	50-5/8"	+70/-72.3	+/-57.9	+/-69.3	+70/-90	+/-64	+70/-90	+70/-90	+/-59.6	+70/-90	+70/-90	+70/-81	+70/-90	+70/-77.9	+70/-90	+70/-73.3	+70/-90	+/-67.3	+70/-90	+/-54.2	+70/-80				1
ξſ	60"	+/-61	+/-48.9	+/-58.5	+70/-90	+/-54	+70/-86.6	+70/-90	+/-50.3	+70/-80.6	+70/-90	+/-68.4	+70/-88.8	+/-65.7	+70/-85.8	+/-61.8	+70/-81.7	+/-56.8	+70/-76.2						[
	63"	+/-58.1	+/-46.5	+/-55.7	+70/-88.7	+/-51.5	+70/-82.5	+70/-90	+/-47.9	+70/-76.8	+70/-90	+/-65.1	+70/-84.4	+/-62.6	+70/-81.5	+/-58.9	+70/-77.5	+/-54.1	+70/-71.9					· · · · · · · · · · · · · · · · · · ·	

53-1/8"

+70/- 90

+70/- 90

+70/-83.2

46"

+70/- 90

+70/- 90

+70/- 90

+70/-80

60"

Design Pressure (psf) for Single Windows, All Anchor Groups

Window Width

34"

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/-81.7

+70/-77.5

+70/- 71.2

37"

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/-76.2

+70/-71.9

32"

+70/- 90

+70/- 90

+70/- 90

+70/- 90

+70/-85.8

+70/-81.5

+70/- 75.3

+/- 67.1

TUBE.

								D	esign Press	ure (psf) fo	Windows	Attached to	a Horizoni	tal Frame A	ssembly Ti	ube							
		* * * *									v	/indow Wid	h										
	under 23"	25-15/16"	27-7/8"	30-3/4"	32'		34"			37"			4	6"			53-	1/8"			6	)"	
	Anchor Group	Anchor Group	Anchor Group	Anchor Group	Anchor Group	A	nchor Grou	ip	А	nchor Grou	ip		Ancho	Group		:	Anchor	Group			Ancho	Group	
	All	All	All	Ali	All	A	В	C&D	A	В	C & D	А	В	С	D	A	В	С	D	А	В	С	D
under 23"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-86.2	+70/-90	+70/-90	+70/-79.2	+70/-90	+70/-79.5	+/-63.7	+70/-76.3	+70/-90	+/-68.9	+/-55.2	+/-66	+70/-90	+/-61	+/-48.9	+/-58.5	+70/-90
25-15/16"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-87.6	+70/-90	+70/-90	+70/-70.5	+70/-90	+70/-90	+70/-90	+/-61	+70/-90	+70/-90	+70/-90	+/-54	+70/-86.6	+70/-90	+70/-90
39"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-87.4	+70/-90	+70/-90	+70/-70.3	+70/-75.1	+70/-89.9	+70/-90	+/-50.7	+/-65.1	+70/-77.8	+70/-83.2	+/-44.9	+/-57.6	+/-68.9	+70/-73.1
50-5/8"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-85.5	+70/-90	+70/-90	+70/-89.8	+70/-90	+70/-90	+/-63.2	+70/-80	+70/-80	+70/-80								
60"	+70/-90	+70/-90	+70/-90	+70/-88.8	+70/-85.8	+70/-81.7	+70/-81.7	+70/-81.7	+70/-75.8	+70/-76.2	+70/-76.2												
63"	+70/-90	+70/-90	+70/-90	+70/-84.4	+70/-81.5	+70/-77.5	+70/-77.5	+70/-77.5	+70/-71.9	+70/-71.9	+70/-71.9												
67"	+70/-90	+70/-90	+70/-85.6	+70/-78.3	+70/-75.3	+70/-71.2	+70/-71.2	+70/-71.2															
72"	+70/-90	+70/-89.5	+70/-79.4	+70/-71.1	+/-67.1																		
76"	+70/-90	+70/-86.8	+70/-77.2	+/-66.6			*****																
84"	+70/-90	+70/-82.5	+70/-72.7																				

NOTES 1) SEE SHEET 4 FOR ADDITIONAL SAMPLE CONFIGURATIONS. 2) SEE SHEET 4 FOR SNUBBER REQUIREMENTS.

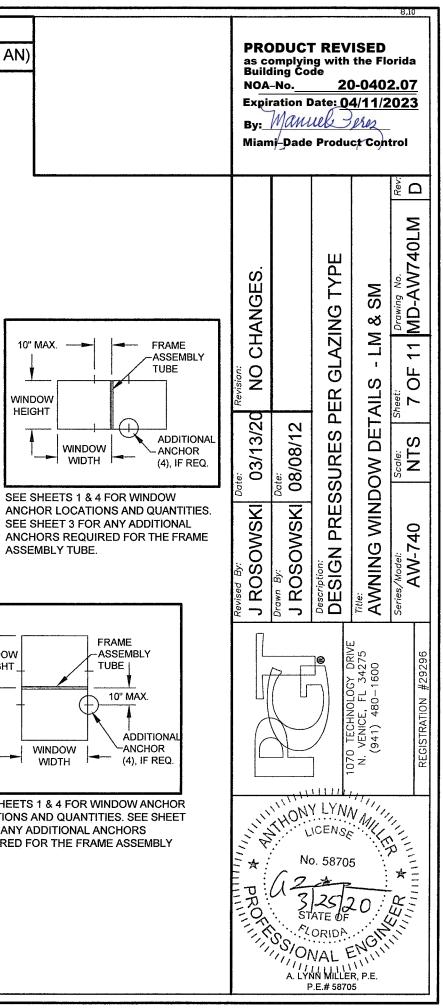


TABLE 14:

under 23"

25-15/16" 39"

50-5/8"

60"

63"

67"

72"

76"

84"

# FOR GLASS TYPES:

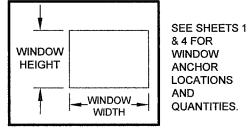
4) 7/8" LAMI. IG: (1/8" T - 7/16" AIR - 1/8" AN - .090" PVB - 1/8" AN)

"PVB"= TROSIFOL<sup>®</sup>PVB BY KURARAY AMERICA, INC.

	under 23"	25-15/16"	27-7/8"	30-3/4"	32"	34"	37"	46"	53-1/8"	60"	
**	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	
**	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	
	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-81.2	
	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-88.8			I
	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-84.6				WINDOW
	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-86.1	+70/-79.9				HEIGHT
	+70/-90	+70/-90	+70/-90	+70/-87	+70/-83.6	+70/-79.1					TILIGITI
	+70/-90	+70/-90	+70/-88.2	+70/-79	+70/-74.6						
	+70/-90	+70/-90	+70/-85.8	+70/- 74					v		
	+70/-90	+70/-90	+70/-80.8								

Design Pressure (psf) for Single Windows, All Anchor Groups

Window Width



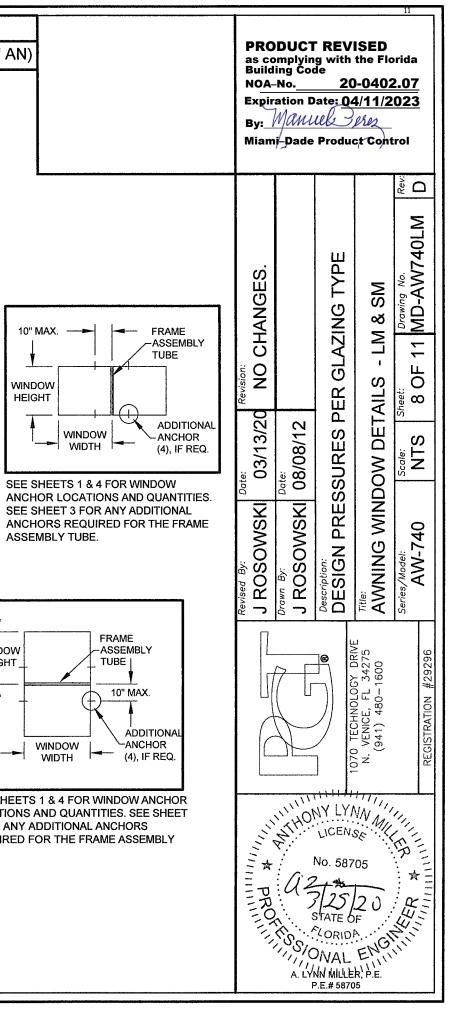
TADIE 16

TABLE 16

										Design	Pressure	(psf) for Wi	ndows Atta	ched to a V	ertical Frar	ne Assemb	ly Tube								
<u> </u>												· · · · · · · · · · · ·	Windov	v Width			• • • • •	· · · ·							
			unde	r 23"			25-15/16"			27-7/8"		30-	3/4"	3:	2"	34	P	3	7"		46"		53-1	1/8"	60"
			Anchor	Group		А	nchor Grou	р	Д	nchor Grou	р	Ancho	Group	Anchor	Group	Anchor	Group	Ancho	Group	A	nchor Grou	ıp	Anchor	Group	Anchor Group
		A	В	С	D	А	В	C&D	Α	В	C&D	A	B, C & D	А	B, C & D	A	B, C & D	А	B, C & D	Α	В	C&D	А	B, C & D	All
	under 23"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90
đ	25-15/16"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90
Ĩ	39"	+70/-90	+70/-75.2	+70/-89.9	+70/-90	+70/-83.1	+70/-90	+70/-90	+70/-77.4	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-87.4	+70/-90	+70/-90	+70/-90	+70/-90	+70/-81.2	+70/-90	+70/-81
§	50-5/8"	+70/-72.3	+/-57.9	+/-69.3	+70/-90	+/-64	+70/-90	+70/-90	+/-59,6	+70/-90	+70/-90	+70/-81	+70/-90	+70/-77.9	+70/-90	+70/-73.3	+70/-90	+/-67.3	+70/-90	+70/-72.2	+70/-86.8	+70/-88.8			[
Š	60"	+/-61	+/-48.9	+/-58.5	+70/-90	+/-54	+70/-86.6	+70/-90	+/-50.3	+70/-80.6	+70/-90	+/-68.4	+70/-90	+/-65.7	+70/-90	+/-61.8	+70/-90	+/-56.8	+70/-84.6						
<b>_</b>	63"	+/-58.1	+/-46.5	+/-55.7	+70/-88.7	+/-51.5	+70/-82.5	+70/-90	+/-47.9	+70/-76.8	+70/-90	+/-65.1	+70/-90	+/-62.6	+70/-90	+/-58.9	+70/-86.1	+/-54.1	+70/-79.9						

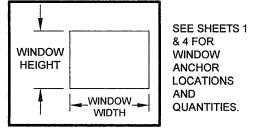
TUBE.

		·		•							V	Vindow Wid	th										
	under 23"	25-15/16"	27-7/8"	30-3/4"	32'		34"			37"			4	6"			53-	1/8"			60	)"	
	Anchor Group	Anchor Group	Anchor Group	Anchor Group	Anchor Group	A	nchor Grou	p	A	nchor Grou	ıp		Ancho	r Group			Anchor	Group			Anchor	Group	
	All	All	All	All	All	А	В	C&D	A	В	C&D	A	В	С	D	A	В	С	D	А	В	С	D
under 23	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-86.2	+70/-90	+70/-90	+70/-79.2	+70/-90	+70/-79.5	+/-63.7	+70/-76.3	+70/-90	+/-68.9	+/-55.2	+/-66	+70/-90	+/-61	+/-48.9	+/-58.5	+70/-90
25-15/16	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-87.6	+70/-90	+70/-90	+70/-70.5	+70/-90	+70/-90	+70/-90	+/-61	+70/-90	+70/-90	+70/-90	+/-54	+70/-86.6	+70/-90	+70/-90
39"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-87.4	+70/-90	+70/-90	+70/-70.3	+70/-75.1	+70/-89.9	+70/-90	+/-60.9	+/-65.1	+70/-77.8	+70/-90	+/-44.9	+/-57.6	+/-68.9	+70/-81.2
50-5/8"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-85.5	+70/-90	+70/-90	+70/-89.8	+70/-90	+70/-90	+70/-72.2	+70/-86.8	+70/-88.8	+70/-88.8								
60"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-87.6	+70/-90	+70/-90	+70/-90	+70/-84.6	+70/-84.6	+70/-84.6												
63"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-86.1	+70/-86.1	+70/-86.1	+70/-79.9	+70/-79.9	+70/-79.9											i i	
67'	+70/-90	+70/-90	+70/-90	+70/-87	+70/-83.6	+70/-79.1	+70/-79.1	+70/-79.1															
72"	+70/-90	+70/-90	+70/-88.2	+70/-79	+70/-74.6																		
76"	+70/-90	+70/-90	+70/-85.8	+70/-74																			
84"	+70/-90	+70/-90	+70/-80.8																				



5) 7/8" LAMI. IG: (3/16" AN - 1/4" AIR - 3/16" AN - .090" SG - 3/16" AN) 6) 7/8" LAMI. IG: (3/16" T - 1/4" AIR - 3/16" AN - .090" SG - 3/16" AN)

"SG"= SENTRYGLAS<sup>®</sup>BY KURARAY AMERICA, INC.



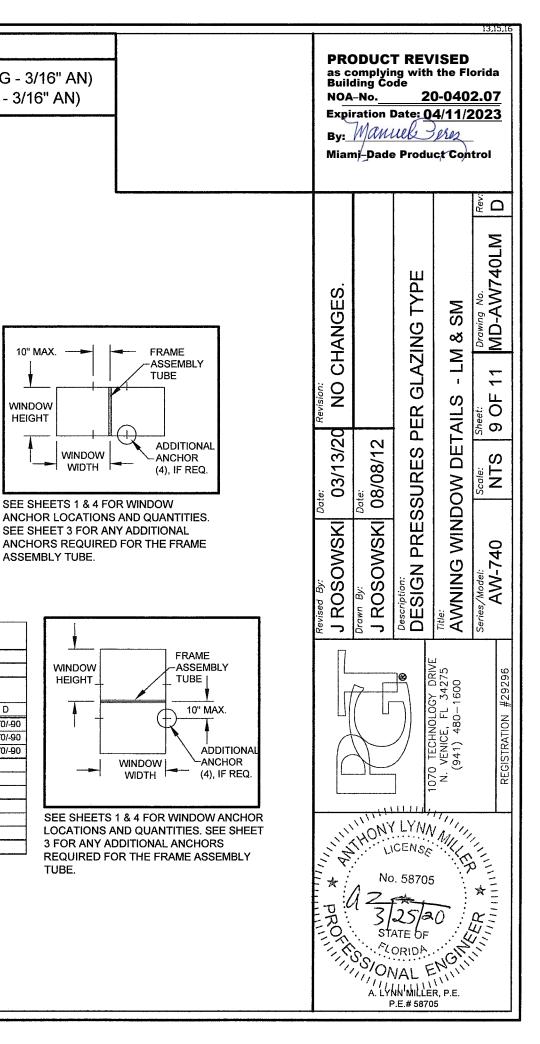
Г				Desigr	n Pressure (j	psf) for Singl	e Windows,	All Anchor C	Groups		
	]					Windov	v Width			· · · · · · · ·	
		under 23"	25-15/16"	27-7/8"	30-3/4"	32"	34"	37"	46"	53-1/8"	60"
	under 23"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130
	25-15/16"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130
	39"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130
Height	50-5/8"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130		
	60"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130			
Window	63"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130			
Vin Vin	67"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130				
~	72"	+90/-130	+90/-130	+90/-130	+90/-130	+90/-130					
	76"	+90/-130	+90/-130	+90/-130	+90/-130						
	84"	+90/-130	+90/-130	+90/-130							

-	-	_		
1 4	BL	F	1 >	ł.

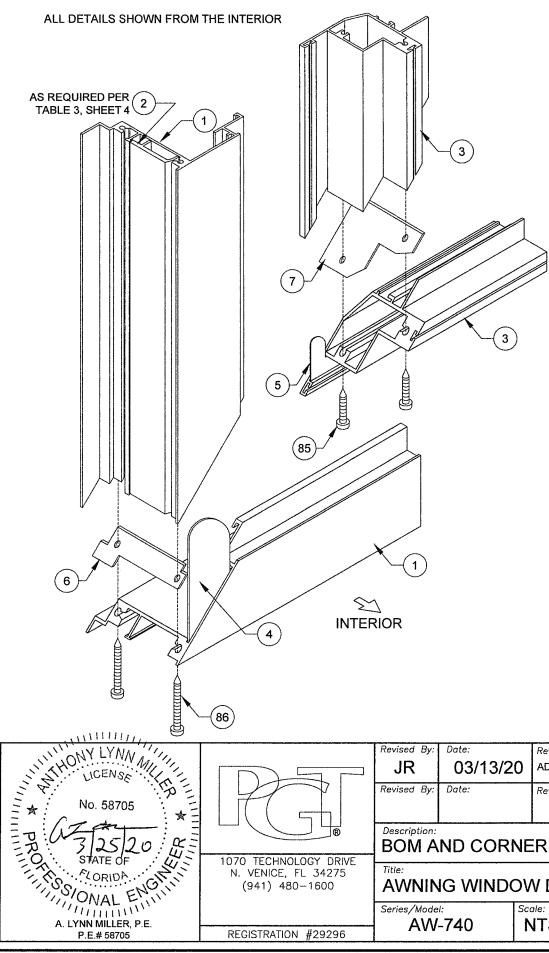
									Desigr	Pressure	(psf) for Wi	ndows Atta	ched to a \	ertical Fran	ne Assemt	oly Tube							
												Windov	v Width										
			unde	er 23"			25-15/16"			27-7/8"		30-	3/4"	3:	2"	3	4"		37"		46"	53-1/8"	60"
			Ancho	r Group		А	nchor Grou	p	А	nchor Grou	ıp	Anchor	Group	Anchor	Group	Ancho	r Group	A	nchor Grou	p	Anchor Group	Anchor Group	Anchor Group
		А	В	С	D	Α	В	C&D	A	В	C&D	A	B, C & D	A	B, C & D	A	B, C & D	A	В	C&D	All	All	All
	under 23"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90
5	25-15/16"	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90
	39"	+70/-90	+70/-75.2	+70/-89.9	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90	+70/-90
	50-5/8"	+70/-72.3	+/-57.9	+/-69.3	+70/-90	+70/-90	+70/-90	+70/-90	+70/-89.4	+70/-90	+70/-90	+70/-81	+70/-90	+70/-77.9	+70/-90	+70/-73.3	+70/-90	+70/-89.8	+70/-90	+70/-90	+70/-90		
	60"	+/-61	+/-48.9	+/-58.5	+70/-90	+70/-81.1	+70/-86.6	+70/-90	+70/-75.5	+70/-80.6	+70/-90	+/-68.4	+70/-90	+/-65.7	+70/-90	+/-61.8	+70/-90	+70/-75.8	+70/-90	+70/-90			
ľ	63"	+/-58.1	+/-46.5	+/-55.7	+70/-88.7	+70/-77.2	+70/-82.5	+70/-90	+70/-71.9	+70/-76.8	+70/-90	+/-65.1	+70/-90	+/-62.6	+70/-90	+/-58.9	+70/-90	+70/-72.2	+70/-86.7	+70/-90			

TABLE 19: Design Pressure (psf) for Windows Attached to a Horizontal Frame Assembly Tube Window Width WINDOW under 23" 25-15/16" 27-7/8" 30-3/4" 32" 34" 37" 46" 53-1/8" 60" HEIGHT Anchor Anchor Anchor Anchor Anchor Anchor Group Anchor Group Anchor Group Anchor Group Anchor Group Group Group Group Group Group All All All All Âll Α B C&D Α 8 C&D Α B С D Α R С D А в С n +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-86.2 +70/-90 +70/-79.2 +70/-90 +70/-79.5 +/-63.7 +70/-76.3 +70/-90 +/-61 +/-48.9 +/-58.5 +70/-90 under 23' +/-68.9 +/-55.2 +/-66 +70/-90 +70/-90 +70/-90 25-15/16" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-88.1 +70/-90 +70/-90 +70/-90 +70/-76.3 +70/-90 +70/-90 +70/-90 +/-67.5 +70/-86.6 +70/-90 +70/-90 39" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-82 +70/-90 +70/-90 +70/-90 +70/-71 +70/-81.3 +70/-90 +70/-90 +/-62.9 +70/-72 +70/-86.2 +70/-90 50-5/8" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 60" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 63" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 67" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 72" +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 +70/-90 76" +70/-90 +70/-90 +70/-90 84\* TUBE.

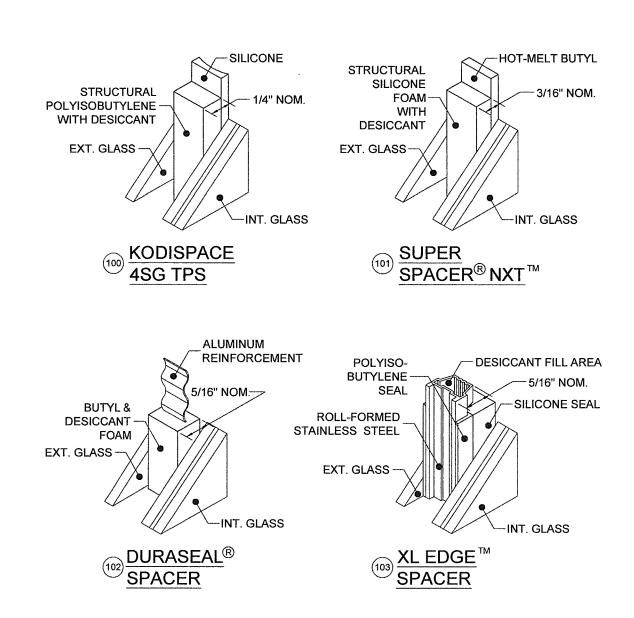
NOTES 1) SEE SHEET 4 FOR ADDITIONAL SAMPLE CONFIGURATIONS. 2) SEE SHEET 4 FOR SNUBBER REQUIREMENTS.



ltem	Dwg. #	Description	Mat.
1	7002	Main Frame Head, Sill & Jamb	6063-T6 Alum
2	7071	Anchor Plate	6063-T6 Alum
3	7003	Sash Top, Bottom & Side Rail	6063-T6 Alum
4	7008	Frame Corner Key	Steel
5	7009	Sash Corner Key	Steel
6	7078	Frame Gasket	Vinyl Foam
7	7072	Sash Corner Gasket	Vinyl Foam
8	7070	Bulb Weatherstrip .187" x .275"	Flex PVC 70
10	7024	Maxim Multi-Point Lock	Steel
11	7026	Lock Support Plate	Steel
12	7014	Multi-Lock Keeper	Steel
13	7013	Tie Bar Guide	Nylon
14	7015	Tie Bar Assembly	Steel or SS
16	7029	Maxim Projected Operator	Steel
17	7030	Operator Gasket	Vinyl Foam
18	7031	Operator Backing Plate	Steel
19	7051	Operator Spacer Block	Nylon
21	7034	Operator Track & Slider	Steel
22	7023	Projected Hinge, Manuf. by Truth	Steel
24		Snubber, Anti-blowout Clip	Steel
32	1713	Setting Block 5/32" x 3/16" x 1-1/4"	EPDM
33	1714	Setting Block 5/32" x 7/16" x 1-1/4"	EPDM
35	7036	Bead B	6063-T6 Alum
36	7042	Bead C	6063-T6 Alum
37	7059	Bead D	6063-T6 Alum
38	1224	Vinyl Bulb Wstp (Thick)	Flex PVC 70
39	1225	Vinyl Bulb Wstp (Thin)	Flex PVC 70
50		Dow 791, 899 or 983 Backbedding	Silicone
60	7006	Screen Frame	3105-H14 Alun
61	7040	Screen Corner Key	Polypropolene
62		Screen Cloth	Fiberglass
63	1635	Screen Spline	EM. PVC
64	320	Casement Screen Spring	Stainless Stee
70	134	Add-on Flange	6063-T6 Alum
71	7004	Frame Assy Tube	6063-T6 Alum
72		Maxim Pivot Slider Assembly	Steel
80		#8-32 x 1/2" Ph. Pn. Mach. Scr Type B	Stainless Stee
81	1157	#8 x 1/2" Ph. Pn. SMS	Stainless Stee
82		#8 x 5/8" FI. Ph. SMS	Stainless Stee
83		#8 x 7/8" F.H. Ph. SMS	Stainless Stee
84		#8 x 1" Fl. Ph. TEK	Stainless Stee
85		#8 x 1" Quad Pn SMS	Stainless Stee
86		#8 X 1-1/2" Quad Pn SMS	Stainless Stee
87		#10 x 1/2" Ph. Pn./ TEK	Stainless Stee
89		#10-24 x 9/16" Ph. Pn. TYPE F	Stainless Stee
90		#12 x 1" Ph. Pn. TEK	Stainless Stee



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10	<sup>Scale:</sup> NTS	<sup>Sheet:</sup> 10 OF 11	Drawing N MD-A	。 W740	LM	<sup>Rev:</sup> D
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Part #	Description	Material
100	Kommerling 4SG TPS Spacer System	
101	Quanex Super Spacer nXT with Hot Melt Butyl	See this Sheet for
102	Quanex Duraseal Spacer	Materials
103	Cardinal XL Edge Spacer	Materials

REFERENCE TEST REPORTS: FTL-8717, 8968 & 8970

