

# **FG-3000 STOREFRONT** INSTALLATION AND GLAZING MANUAL

NOTE

THE INSTALLATION DETAILS FOUND IN THIS PACKAGE ARE GENERIC AND ARE FOR REPRESENTATION ONLY WITH THE INTENT OF GIVING THE INSTALLATION TEAM A VISUAL REPRESENTATION AS TO HOW THE ASSEMBLIES TYPICALLY INSTALL. THE SHOP SUBMISSION DRAWINGS AND DETAILS ARE THE GOVERNING DOCUMENTS AND AS SUCH THIS PACKAGE IS TO BE USED ONLY AS A RESOURCE. FOLLOW SEALANT MANUFACTURERS' RECOMMENDATIONS FOR USE AND APPLICATION OF ALL STRUCTURAL SILICONE SEALANT AND WEATHER SEAL SILICONE SEALANT.

CUSTOMER / PROJECT QUALITY ASSURANCE PROCEDURES ARE SEPARATE DOCUMENTS AND ARE TO BE FOLLOWED IN CONJUNCTION WITH THIS MANUAL.

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# **GENERAL INFORMATION**

The Oldcastle BuildingEnvelope<sup>®</sup> (2 x 4 1/2) system represents the latest in product development technology complemented by dealer on-the-job input and experience. Proper use of these systems will assure optimum results in erection and long-term performance.

#### **BUILDING CODES**

Oldcastle BuildingEnvelope® does not control the application nor selection of its product configurations, sealant, or glazing materials, and assumes no responsibility thereof. It is the responsibility of the owner, architect, and installer to make these selections in strict compliance with applicable laws and building codes.

#### **INSTALLER QUALIFICATION**

The FG-3000 storefront system is intended for fabrication, assembly, sealing, installation and glazing by professionals with appropriate knowledge and experience of the system(s) and their incorporation into various building conditions.

#### **GLAZING PRACTICES**

The air and water performance of the framing system is directly related to the completeness and integrity of the installation process, including but not limited to the assembly seals of the framing joinery, the installed glazing gaskets, and the alignment of the framing joinery glazing plane. Before glazing, verify the glazing pocket width and glazing infill thickness, as both must be in tolerance to assure adequate edge pressure and to achieve the desired air and water performance levels. (In general, framing systems utilizing 1" insulating glass are designed to accommodate a thickness variance of +/- 1/32"). Note: Excessive pressure can cause glass breakage and/or IGU failure. Consult the glass manufacturer for their recommended edge pressure per lineal inch.

To achieve the designed and tested air and water performance, best practices include:

- Glazing gaskets should be cut ¼" longer per foot, and lay flat, preferably for 24 hours.
- Gaskets should be cut as single monolithic pieces and "crowded" during their installation to avoid corner gaps caused by post-installation relaxation.
- The interior glazing gasket should be installed so as to avoid stretching, buckles, or tears.
- Corners must be cut square, and at a slight angle when required to conform to the bevel on the intersecting gasket; sealed and butted together.
- Gasket corner joinery must also be crowded, and sealant applied onto the gasket contact frame surface and into gasket reglet raceway where applicable.
- Gasket corner seals are to be done just prior to installing glass, while the sealant is still wet and uncured, and ensure exterior gaskets are installed so as to place the glass into it's final in service condition and allow the sealant to conform to optimum configuration. Note: If the sealant cures prior to glazing, the cured sealant could create excessive edge pressure onto the glass and has the potential to cause glass breakage.

# GENERAL INFORMATION CONT.

- The glass must be checked for squareness, size dimension, and thickness along the edges paying attention to any variances from center edge to corner edge.
- Check the placement of the installed glass and verify there is proper edge bite into the pocket, and proper edge clearance from framing elements.

After sealant has set and a representative amount of the wall has been installed and glazed (250 square feet or more) run a water hose test in accordance with AAMA 501.2 specifications to check installation. On large projects the hose test should be repeated during the glazing operation. Consult and follow NGA's GANA Manual and FGMA Glazing Manual for proper glazing technique and procedure.

#### MATERIAL HANDLING, PROTECTION, AND STORAGE:

Handle the material carefully. Do not drop from the truck. Stack with adequate separation so that the material will not rub together. Store material off the ground. Protect against the elements and other construction hazards by using a well-ventilated covering. Remove material from package if it is wet or is located in a damp area.

#### SHOP

- Cardboard wrapped or paper interleaved material must be kept dry.
- Check arriving materials for quantity and keep record of where various materials are stored.

#### JOB SITE

- Material at job site must be stored in a safe place well removed from possible damage by other trades.
- Cardboard wrapped or paper interleaved materials must be kept dry.
- Keep record of where various materials are stored.
- Protect materials after erection. Cement, plaster, and other alkaline solutions are very harmful to the finish.

#### CHECK MATERIAL:

Check all material upon arrival for quality and to assure against shipping damage. Any visible damage must be noted on the freight bill at the time of receipt. If a claim is required, then the receiving party must process a claim with the freight company. Completely check construction which will receive your materials against contract documents. Notify the general contractor by letter of any discrepancies before proceeding with the work. Failure to do so constitutes acceptance of work by other trades.

Check shop drawings and installation instructions to become familiar with the project. The shop drawings take precedence and include specific details for the project. The installation instructions are of a general nature and cover the most common conditions. Due to varying job conditions, all sealants used should be approved by the sealant manufacture, to ensure they will function for conditions shown on instructions and shop drawings. They must be compatible with all surfaces in which adhesion is required, including other sealant surfaces. Use primers where directed by manufacturer of sealants. Be sure to properly store sealants at recommended temperatures and check sealant for remainder of shelf life before using.

# GENERAL INFORMATION CONT.

#### FIELD CONDITIONS:

- Do not install wall if there is a walkway with a downslope towards an entrance or a storefront.
- All materials to be installed plumb, level, and true. Aluminum to be placed in direct contact with the masonry or incompatible materials, should be isolated with a heavy coat of zinc-chromate or bituminous paint.
- After sealant is set and a representative amount of the wall has been glazed (250 square feet or more), run a water hose to check installation. On large jobs, hose test should be repeated during glazing operation. Test should be conducted in accordance with AAMA 501.2 specifications.
- Coordinate protection of installed materials with general contractors and other trades.

#### **CLEANING MATERIALS:**

Cement, plaster, terrazzo, alkaline and acid-based materials used to clean masonry are very harmful to finishes and should be removed with water and a mild soap immediately or permanent staining will occur. A spot test is recommended before any cleaning agent is used.

#### **EXPANSION JOINTS:**

Expansion joints and perimeter seals shown in these instructions and in the shop drawings are shown at normal size. Actual dimensions may vary due to perimeter conditions and/or differences in metal temperature between the time of fabrication and time of installation. For example, a 12-foot unrestrained length of aluminum extrusion can expand or contract 3/32 of an inch over a 50° F change. Any movement potential should be accounted for at the time of the installation.

#### THERMAL IMPROVEMENT SUGGESTIONS:

To maintain or improve your wall installation, the following items should be considered:

- A. Blinds or drapes prevent warm air from washing the window.
- B. Warm air ventilators too far from the window will not adequately wash the window with air to prevent condensation.
- C. In extreme conditions, the fan of the heating system should not cycle on and off but should run continuously.
- D. Some heating systems have a water injection feature that can raise humidity levels. The higher the humidity level the more likely condensation or frost will form. Raising the temperature and reducing the humidity will usually solve the problem.
- E. On rare occasions, an extremely cold storm may cause frost to appear on the glass or framing. A space heater and electric fan blowing along the plane of the window wall can reduce or eliminate this temporary condition.

# GENERAL INFORMATION CONT.

TO DERIVE THE GREATEST BENEFIT FROM YOUR STOREFRONT INSTALLATION, WE RECOMMEND YOU REVIEW THE FOLLOWING.





NOT ENOUGH METAL EXPOSED TO INTERIOR AT X.



# OUTSIDE GLAZE SCREW SPLINE FRAME ASSEMBLY





# OUTSIDE GLAZE SILL FLASHING INSTALLATION



# OUTSIDE GLAZE FRAME INSTALLATION



ANCHOR SIZE AND FREQUENCY SHOULD BE DETERMINED BY STRUCTURAL REQUIREMENTS. SILL ANCHOR FG-2000-FP-3 AND HEAD ANCHOR FG-2122 SHOULD BE LOCATED SO THAT THE ANCHOR IS NOT MORE THAN 4" FROM EACH SIDE OF THE MULLION.

# OUTSIDE GLAZE SILL FLASHING INSTALLATION AND PERIMETER SEAL





APPLY SEALANT ALONG LENGTH OF SUB SILL AT AREAS A & B.

LAY FLASHING ON SLAB AND SHIM ONLY AT LOW AREAS. RESEAL AT SHIM AREAS.

SPACE BETWEEN SILL AND FLASHING (C) TO BE CONTINUOUSLY SEALED EXCEPT FOR 1/2"-3/4" SPACE UNDER VERTICAL MULLIONS FOR WEEPAGE. PRIOR TO INSTALLING FRAME, APPLY SEALANT CONTINUOUSLY ALONG SILL FLASHING (D). THIS WILL PROVIDE CONTINUOUS SEAL BETWEEN SILL AND SILL FLASHING.

THE QUALITY OF THE INSIDE AND OUTSIDE PERIMETER SEALS (C AND E) MAY BE IMPROVED BY USING FG-2188 RIGID PVC FILLER. THE PART MAY BE USED IN FULL LENGTHS OR CUT INTO PIECES. ITS PURPOSE IS TO PROVIDE SUPPORT FOR THE BACKER ROD REGARDLESS OF JOINT OR SIZE. PERIMETED SEAL (F) IS FOR COSMETIC PURPOSES AND IS OPTIONAL.



# OUTSIDE GLAZE SEALANT PROCEDURE FOR DOOR FRAME AT FLASHING



DO NOT FABRICATE 2 PIECE DOOR FRAMES WITH POUR & DEBRIDGE PROFILES.



# INSIDE GLAZE SCREW SPLINE FRAME ASSEMBLY

Most of the extrusions in this system are the same, only the sill and its anchors are different. Note that the tapes used for sealing the horizontals to mullions are located in a different manner.

The sill is designed so that sill anchors may be cap sealed before the frame is installed. The frame is installed over the the sill with twist-in anchors. This prevents any additional screws from penetrating the sill and causing leaks under the sill. Multiple units require the use of split mullions. A minimum of 7/16" clearance between the jamb and sill end dam must be provided. This will allow a minimum of 3/8" clearance to move first unit sideways so the second unit with the same clearance will clear the interlocking legs of the expansion mull. Adjust frame locations before running perimeter seals. OBE recommends using FG-2188 vinyl filler to improve the perimeter seal.



OBE does not recommend the shear block or stack method of assembly for inside glazing.

# INSIDE GLAZE SCREW SPLINE FRAME ASSEMBLY







ANCHOR SIZE AND FREQUENCY SHOULD BE DETERMINED BY STRUCTURAL REQUIREMENTS. HEAD ANCHOR FG-2122 AND ANCHOR BOLT THROUGH SILL FLASHING SHOULD BE LOCATED SO THAT THE ANCHOR SCREW IS NOT MORE THAN 4" FROM EACH SIDE OF MULLION.

# INSIDE GLAZE, NON THERMAL SILL FLASHING INSTALLATION AND PERIMETER SEAL





# STACK SYSTEM FRAME ASSEMBLY AND INSTALLATION

The assembly and sealant procedures are a part of the installation sequence because of the stacking method.

#### HEAD CAN:

Anchor screws should be within 4" of each side of the intended mullion location. Head anchors AC-121-1 should be used if the height x width x design load is 500 lbs. or more for one bay at the top of the mullion. Normally one anchor screw at the middle of the lite or 24" O.C. is adequate for securing the header. For unusual conditions, consult the OBE engineering department.

#### SILL CAN:

Shim can a minimum 1/4". Anchor sill can 24" O.C. and no more than 4" on each side of intended mullion locations. Be sure weeps are located under center line of mullion. Sill both sides of can.

HORIZONTAL HEAD AND SILL INSERT:

Members are cut 1/16" less than daylight opening to allow for incremental expansion.

#### JAMB MEMBERS:

Remember all horizontals are cut 1/16" short. Do not over shim between jamb and structure.

#### MULLIONS

Cut mullion length outside frame dimension 1-1/4". Install mullions by sliding top end over anchor and rotating bottom into position.

#### RECOMMENDATION:

Prior to glazing, fill sill cavity with water to assure that end dams and anchors are sealed. Then, run interior sill bead.

STACK SYSTEM ANCHORING



# STACK SYSTEM FRAME ASSEMBLY AND INSTALLATION



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DOOR FRAME IS ANCHORED BY FASTENERS THROUGH THRESHOLD AND THROUGH DOOR FRAME HEADER.

DO NOT FABRICATE 2 PIECE DOOR FRAMES WITH POUR & DEBRIDGE PROFILE

# STACK SYSTEM GLAZING PROCEDURE



FG-3000 Z X 4-1/Z	Screw Spline System
FG-3100	Open Back Mullion
[]	Open Back Heavy
	Mullion
<b>حوح</b> FG-3102	Mullion Filler
<b>[]</b> FG-3103	Jamb / Outside Glaze Head / Inside Glaze Sill
<b>لہ جا</b>	Expansion Mullion Half
<b>۲۵۰۲</b>	Expansion Mullion
FG-3109	Half
<b>نے۔</b>	Adjustable Mullion
FG-3180	Half
<b>ریٹ</b>	Adjustable Mullion
FG-3181	Half
<b>ل</b>	Mullion for Steel
FG-3135	Reinforcement
<b>جريعہ</b>	Mullion Filler for
FG-3164	Steel Reinforcement
FG-3142	Intermediate Horizontal
<b>لہ۔۔۔۔۔۔</b>	Outside Glaze Sill /
FG-3161	Inside Glaze Head
<b>Г</b>	Glass Stop
FG-3144	(Outside Glaze)

FG-3000 2" x 4-1/2" Screw Spline System

# PARTS LIST

FG-3000 2" x 4-1/2" Screw Spline System



#### FG-3000 2" x 4-1/2" Stack System



# PARTS LIST

#### FG-3000 2 x 4-1/2" Auxiliary Extrusions

<u>ب م</u> FG-2122	Open Back Flat Filler
FG-3110	90° Corner (Self Mating for 180° Post)
FG-3111	90° Split Corner
FG-3201	90° Corner w/ FG-2112 3-Way Post w/ FG-3111
ر آب FG-2112	Corner Post Self Mating
FG-2138	135°/45° Corner use FG-3141 Filler
<b>کہ</b> FG-3141	Deep Pocket Filler for FG-2138
MO-243	4-1/2" Head Receptor (V-11 not included)
MO-244	Head Receptor Face (V-11 not included)
FG-2139	Head Receptor (V-11 not included)

#### FG-3000 2 x 4-1/2" Auxiliary Extrusions

	-⁄] RS-1	Steel Reinforcement for FG-3135 and FG-3164 Only
1	<b>F</b> FG-3126	Snap-In Pocket Filler
J.	FG-3194	Pocket Reducer for 1/4" Glass
Ę	FG-3236	Pocket Reducer for 7/16" Glass
٩Ţ	FG-3237	Pocket Reducer for 5/8" Glass

#### FG-3000 Door Frame Components



# PARTS LIST

#### FG-3000 Door Frame Components

FG-3196	Door Header for OHCC
 FG-1129	Snap-In Filler for FG-3196
 FG-1184	Snap-In Filler for FG-3196 with weathering
۲G-3157	Door Transom Glazing Adaptor
们 FG-3158	Door Transom Glazing Adaptor Stop
<b>FG-2145</b>	1/2" x 1-1/16" Snap-In Door Stop
<b>پ</b> ار FG-2120	1/2" x 1-5/8" Snap-In Door Stop
یے DS-1	1/2" x 1-5/8" Door Stop (Use SC-1 Clips)
DS-108	3/4" x 1-5/8" Door Stop (Use SC-1 Clips)
DS-104	1-3/16" x 1-5/8" Door Stop (Use SC-1 Clips)
<b>رسی</b> FG-1123	Slide-In Pocket FIller

#### FG-3000 Accessories

مرتب مرتب مرتب مرتب مرتب مرتب مرتب مرتب	Shear Block for FG-3103 Header
AC-121-1	Mullion Anchor for FG-3190 and FG-3203
ന്ന് AC-122-1	Shear Block for FG-3192 Horizontal
<mark>∻</mark> FG2000-FP-3	Sill Anchor for FG-3161
لم) AC-119-1	Shear Block for FG-3142 and FG-3161
<b>FG-3218</b>	Vinyl Pocket Filler for Window Applications 12'-0" S/L
<u>د م</u> FG-2188	Vinyl Filler for Caulk stop 12'-0" S/L
DJ-5	Drill Fixture for Screw Spline Assembly FG-3103, FG-3142 & FG-3161
DJ-6	Drill Fixture for Shear Block Assembly AC-119-1 & AC-108-1
<b>رے</b> SC-1	Spring Clip for DS-1, DS-104 and DS-108
 UW-466	Silicone Splice for FG-2246

## PARTS LIST

#### FG-3000 ACCESSORIES

FG-3000 ACCESSORIES		
र्षाह FG-1133	1" Glazing Gasket (3/16" Face Clearance)	
जिट्टे FG-1134	Light Gasket (1/8" Face Clearance)	
بت FG-5125	Heavy Gasket (1/4" Face Clearance)	
<u>الم</u> FG-3129	Heavy Gasket (3/8" Face Clearance)	
ጥ V-11	Gasket for Head Receptor and Expansion Mullions	
FG-3146	Setting Block for FG-3142, FG-3161, FG- 3191 & FG-3192	
HP-17	Setting Block for FG-3142 Inside Glazed	
SM5601	Joint Sealant Tape 1/8" x 1/2"	
FG1000-FP-2	Water Diverter for Center Set Outside Glazed & all Front Set or Back Set	
FG2000-FP-4	End Dam for FG-2169	
FG3000-FP-78	End Dam for FG-2246	
() UW-466	2" Wide Silicone Sheet for splicing of sill receptors	

#### **FG-3000 ACCESSORIES**



#### FG-3000 Fasteners

0)11111	FS-6	#10 x 3/4" PPH Attachment of Sill and horizontal To Shear Block
() Internet	FS-7	#10 X 3/4" PFH Attachment of Head to Shear Block
	FS-8	1/4 X1" HHSTS Screw Spline Assembly Screw
	FS-9	1/4 X 1-1/2" HHSTS Assembly Screw For Shear Block
() 	FS-320	M4 x 16mm headed Helical pin Attachment of FG3000-FP-78 End Dam

Glass Size	Adaptor	Gaskets
1/4"	FG-3194	FG-1133 Both Sides
5/16"	FG-3236	FG-5125 Both Sides
3/8"	FG-3236	FG-1133 & FG-5125
7/16"	FG-3236	FG-1133 Both Sides
1/2"	FG-3237	FG-5125 Both Sides
9/16"	FG-3237	FG-1133 & FG-5125
5/8"	FG-3237	FG-1133 Both Sides
11/16"	FG-3237	FG-1133 & FG-1134
3/4"	FG-3237	FG-1134 Both Sides
13/16"	N/A	Not Available
7/8"	None	FG-5125 Both Sides
15/16"	None	FG-1133 & FG-5125
1"	None	FG-1133 Both Sides
1-1/16"	None	FG-1133 & FG-1134
1-1/8"	None	FG-1134 Both Sides

#### **INFILL THICKNESS OPTIONS**