

INSTALLATION INSTRUCTIONS

SERIES 2780-ZS WINDOW **Zero Sightline**



- Thermally broken casement and awning windows
- Installation preparation
- Window alignment & anchorage
- Glass sizing & setting glass
- Protection & cleaning



INSTALLATION NOTES

All materials should be checked for quantity and quality upon receipt. MPG must be notified immediately of any discrepancies in shipment.

Store units in a dry, safe area. If exposure to rain, condensation or any water contact is likely, then all packaging material should be removed. Wet packaging materials will discolor and may stain finishes and paints. Do not store window units flat or stacked upon each other.

Check the openings and surrounding conditions where you will install the window units. Remember; if the construction is not per the construction documents, it is your responsibility to notify the general contractor in writing. Any discrepancies must be brought to the general contractor's attention before proceeding with the installation. Do not proceed until openings are within specified tolerances and suitable for positive anchorage.

Consult the sealant manufacturer for perimeter sealants and backer rod selection. Install sealants in strict accordance with the manufacturer's recommendations and specifications.

Isolate and protect finished aluminum surfaces from all contact with dissimilar metals, uncured masonry, muriatic acid and other material cleaning compounds or other products / materials that may cause permanent staining or surface destruction. Final cleaning of exposed aluminum surfaces should be done in accordance with AAMA 609.1 for anodized aluminum and AAMA 610.1 for painted aluminum. Refer to the *MPG 2780-ZS Cleaning and Maintenance* document.

Window anchorage fasteners for anchored frames are not supplied by MPG. Due to the varying unit sizes and performance requirements; perimeter anchor fasteners are not specified in these instructions. For perimeter anchor fasteners; refer to installer's shop drawings and consult with the fastener supplier.

Due to the diversity of the local, state and federal building codes; it is the responsibility of the architect, owner or general contractor to assure that the products selected for use on projects comply with all applicable building codes and laws. MPG exercises no control over the use or application of its products, glazing materials and operating hardware and assumes no responsibility thereof.

Cutting tolerances are plus or minus one thirty-second of an inch (1/32") unless noted otherwise.

All windows must be installed plumb, square, level and in accordance with approved shop drawings and these installation instructions.

All sealants, primers, shims, fasteners, glazing tape (if sold unglazed), storefront pocket fillers and accessories are the responsibility of the installing contractor.

NOTE TO CONTRACTOR'S DOING THEIR OWN GLAZING:

Milwaukee Plate Glass has tested and retained documented structural glazing certification for glazing product compatibility and adhesive strength only when the 2780-ZS window is glazed by our factory. This testing and certification is only valid when factory glazed at our facility and is not transferable to glazier installed glass projects.

Structural sealant manufacturers require the submission of metal finish samples, glass sample, glazing tape and setting block samples for compatibility and adhesive strength testing on each project. Sealant manufacturers will determine and advise the necessary glass or metal surface primers as may be required as a result of their testing analysis. These projects must be registered with the sealant manufacturer to qualify for product warranty and support (by the sealant manufacturer).

Standard glazing practices apply for the location of setting blocks for dead load distribution and the method of "cross-blocking" glass should be incorporated on casement style vents. Additional setting blocks are often used at additional glass perimeter locations to help position the glass within the vent. Always use MPG standard silicone setting blocks. Insulated glass units should be ordered with a silicone perimeter edge seal.

Glass Spacer Tape Size: 1/8" X 5/8" MPG uses: **Tremco SGT-922®** (Norton Thermalbond V-2100® also acceptable.)

It is the installer's responsibility to provide the necessary glazing materials and to have them tested and certified by the structural sealant manufacturer for each project. Milwaukee Plate Glass is not responsible for product performance relative to the glazing of the vents and provides no warranty or certification thereof. Please contact MPG for finished aluminum and setting block samples as required for product submission and testing purposes.

Please contact MPG engineering for additional support.

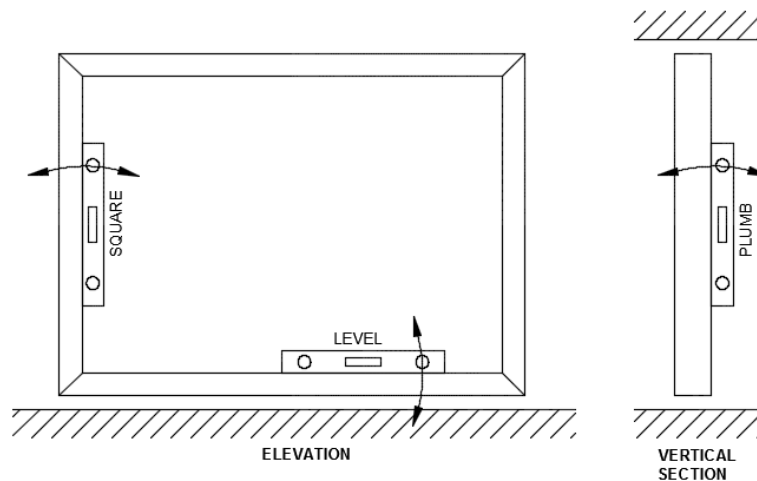
INSTALLATION

Preparation:

1. The rough opening should be checked for the correct size as noted in the building documents. Any discrepancies should be brought to the general contractor's attention before proceeding with the installation.
2. Allow a minimum clearance of 1/4" around the perimeter of the "Glazed Frame" and allow a minimum clearance of 1/8" around the perimeter of the "Anchored Frame". Make sure all wall cavities around the window opening are sealed to prevent air flow.
3. Determine the high point of the opening sill using a level or transit.

Installation:

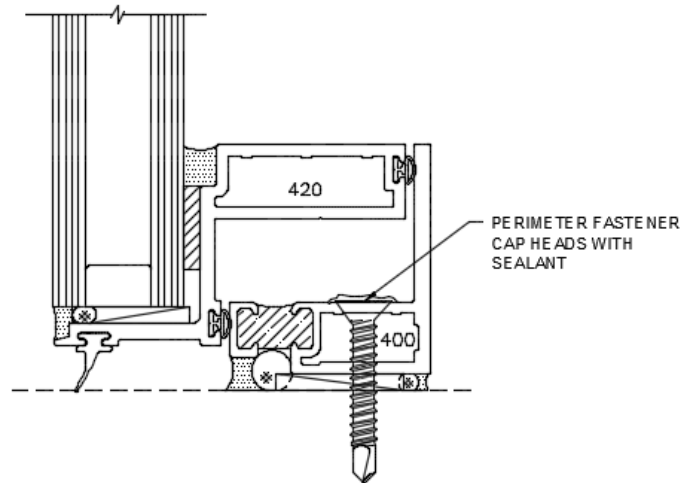
1. Set the window frame into the opening and using a level; make sure the unit is level, square and plumb. Use shim materials that are solid bearing and non-deteriorating. Solid PVC shims are preferable.



2. Shim window under each jamb and at each anchor location.
3. Frame fasteners should be determined by engineering calculation for size, type and location. MPG will not be responsible for providing and/or specifying anchors on windows installed by other contractors. (Anchored frame type only)
4. Review system details for optional anchor locations within the window profile.

INSTALLATION OF ANCHORED FRAMES

Locate fasteners within the frame as shown in the details below. Place fasteners similarly in the jambs and head of the window unit. Do not drill or fasten through the polyurethane thermal break material. All casement windows must be securely anchored at hinged jambs at each hinge location. This will transfer cantilevered sash loads into the building structure.



ANCHORED FRAME

Perimeter Frame Sealants:

1. Prior to installing perimeter sealants; be sure to clear the frame surfaces of any loose dirt or debris. The window or opening surface shall not be wet or contain frost and the temperature should be above 40° Fahrenheit.
2. Install open or closed cell backer rod around the interior and exterior of the window with type as recommended by the sealant manufacturer.
3. Sealants and primers shall be suitable for use considering the materials being caulked. MPG recommends use of 100% silicone sealants.
4. The window units shall be perimeter sealed on both the exterior and interior in compliance with MPG's laboratory test results.

Hardware Adjustments & Maintenance:

1. Hardware has been pre-adjusted in the factory for free and easy operation of the sash assembly. Delivery transportation and installation conditions may require field adjustments following the installation process. Field adjustments are not the responsibility of MPG. Any required adjustments should be made before the installers work is completed.
2. If hardware has been contaminated with dust, dirt or debris; flush the components with clear water. Use mild soap to loosen stubborn dirt. Flush with clear water and then dry. Lubrication may be required after cleaning.

Hardware Adjustments & Maintenance:

Lubrication

After the hardware is clean and dried it must be lubricated to restore the smooth operation, and in some cases corrosion resistance. There are a number of commercially available products which can be used. It is recommended that the replacement lubricant be similar to what was removed. (If the gears were coated with grease before you cleaned them, re-lubricate only with grease, not a spray such as WD40, etc.) The following list of products will help you know where each should be used.

Lithium Grease: Use on all gear drives; such as operators and locks. Best choice due to waterproofness.

WD40 or CD2: Use on all sliding or rotating joints; such as rollers, pivots, brackets, hinges and chains. Another area this lubricant can be used is in the sliding pin inside the bolt and to the lock cylinder on bi-fold door hardware. Attaching a tube to the nozzle will help concentrate the spray and direct it to the appropriate spot. There are access areas on dropbolt products to allow this procedure to be done without having to remove the locks from the doors. These lubricants won't last as long as oil.

Automotive Grease or Petroleum Jelly: Will work in same areas as White Grease, but is not as waterproof and it will attract dust. Be careful when applying grease since it will stain any wood it contacts.

Light Oil such as 3 in 1 Oil: Can be used on sliding or rotating joints. Care must be used when applying due to possible staining of wood parts.

Graphite: Can be used on sliding and rotating joints. Also works well on cam locks and hinges.

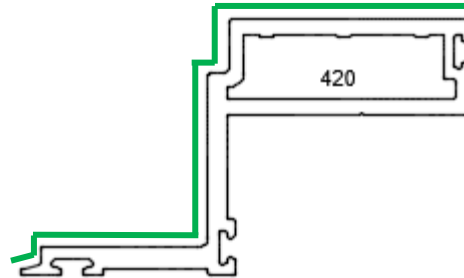
GLAZING

One inch insulated glass units are the standard for the 2780-ZS window system. Windows to be glazed with a narrower glass thickness will require alternate glazing materials. Consult MPG for alternate glass thickness glazing material requirements. Units glazed with non-standard products by other contractors are not covered under warranty.

Sash Preparation:

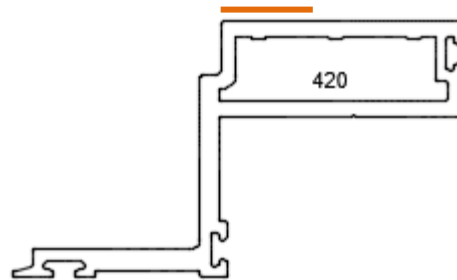
CLEAN

CLEAN SASH SURFACES WITH ISOPROPYL ALCOHOL or XYLENE AS SHOWN



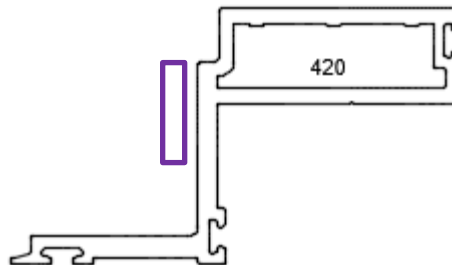
MASK

MASK SURFACE AREA ADJACENT TO STRUCTURAL SEALANT WHERE SHOWN

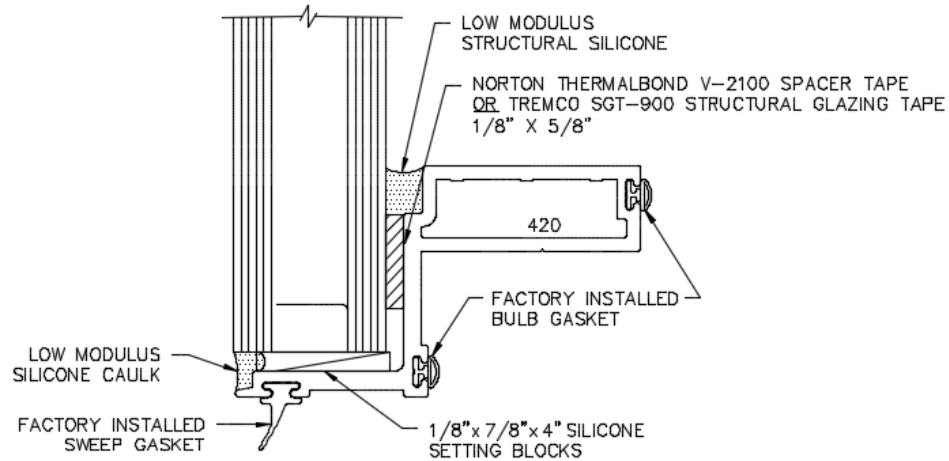


TAPE

APPLY SPECIFIED SPACER TAPE RECOMMEND TREMCO SGT-921 or Norton Thermalbond V2100 1/8" x 5/8" AS SHOWN



GLAZING

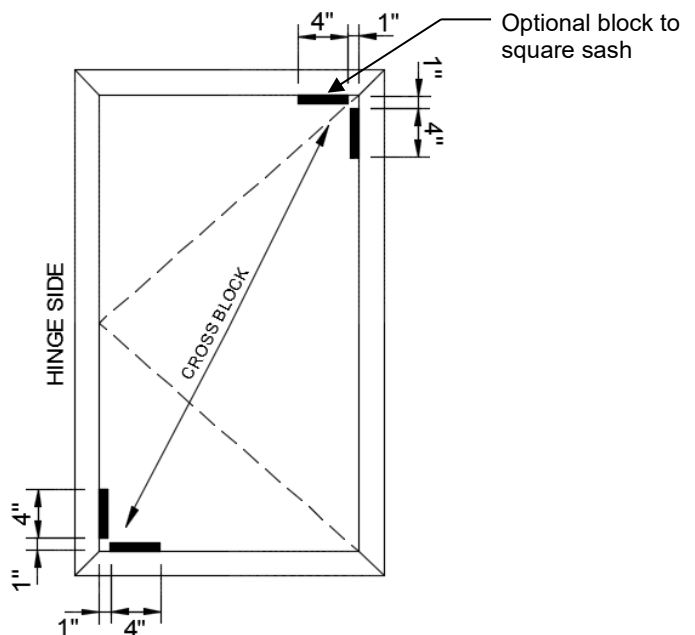


Sash Glazing Detail

Casement Window Glazing:

1. Follow sash preparation instructions as noted on preceding page.
2. Verify that the frame and sash are properly aligned around the entire perimeter of the sash.
3. Place casement glass in sash using the cross-block method of setting block locations. (refer to diagram below) Note that the top of glass setting block is only required to reduce sash sag on larger units. Cross-blocking is required in order to transfer glass loads back to the hinge jamb.
4. Install structural silicone sealant around the interior and exterior perimeter of glass in accordance with the sealant manufacturer's instructions and prior test results.

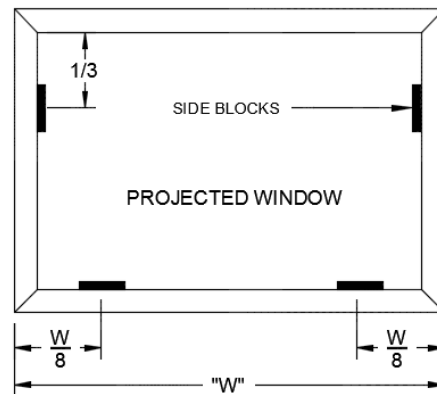
Casement - Glass Blocking Diagram



Projected Window Glazing:

1. Follow sash preparation instructions as noted on page 9.
2. Verify that the frame and sash are properly aligned around the entire perimeter of the sash.
3. Place the glass in the sash on setting blocks at eighth point locations making sure that the glass is centered in the sash opening. Setting blocks placed closer together may cause the center of the sash to sag.

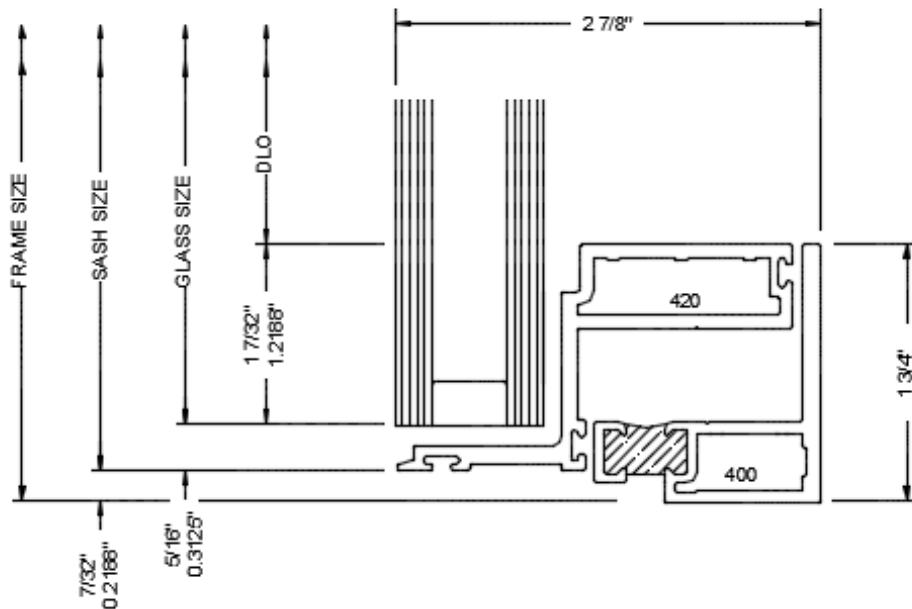
Projected Unit - Glass Blocking



4. Install structural silicone sealant around the interior and exterior perimeter of glass in accordance with the sealant manufacturer's instructions and prior test results.

SIZING FORMULAS

Glass Size Formula
Frame Size (w) or (h) – 1 1/16"

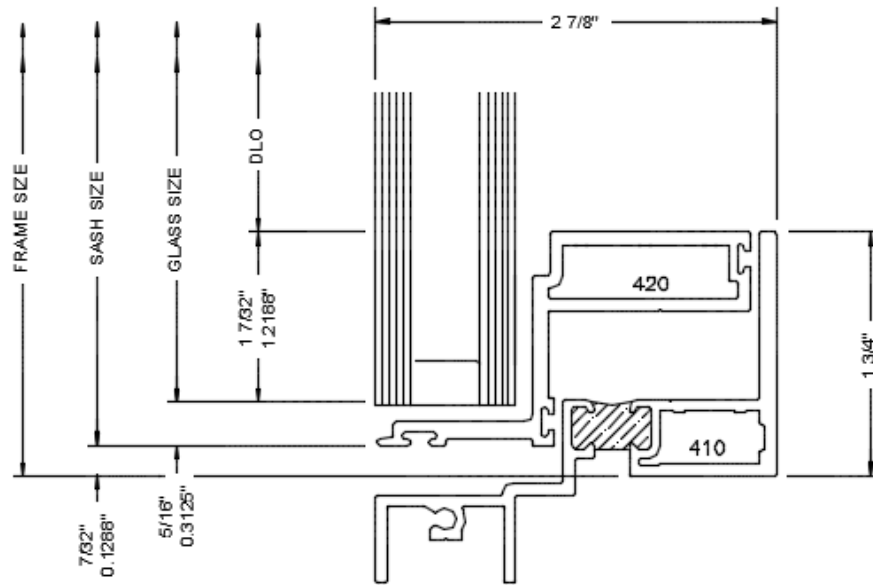


ANCHORED FRAME

FRAME SIZE:	ROUGH OPENING MINUS 1/2" (0.500)
SASH SIZE:	FRAME SIZE (H or W) MINUS 7/16" (0.438)
GLASS SIZE:	SASH SIZE (H or W) MINUS 5/8" (0.625)
SCREEN SIZE:	FRAME SIZE (H or W) MINUS 1 1/16" (1.062)
DAYLIGHT OPENING:	FRAME SIZE (H or W) MINUS 2 7/16" (2.438)
	FRAME SIZE (H or W) MINUS 3 1/2" (3.500)

SIZING FORMULAS

Glass Size Formula
Frame Size (w) or (h) – 1 1/16"



GLAZED FRAME

FRAME SIZE:	ROUGH OPENING MINUS 1/2" (0.500)
SASH SIZE:	FRAME SIZE (H or W) MINUS 7/16" (0.438)
GLASS SIZE:	SASH SIZE (H or W) MINUS 5/8" (0.625)
	FRAME SIZE (H or W) MINUS 1 1/16" (1.062)
SCREEN SIZE:	FRAME SIZE (H or W) MINUS 2 7/16" (2.438)
DAYLIGHT OPENING:	FRAME SIZE (H or W) MINUS 3 1/2" (3.500)

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