

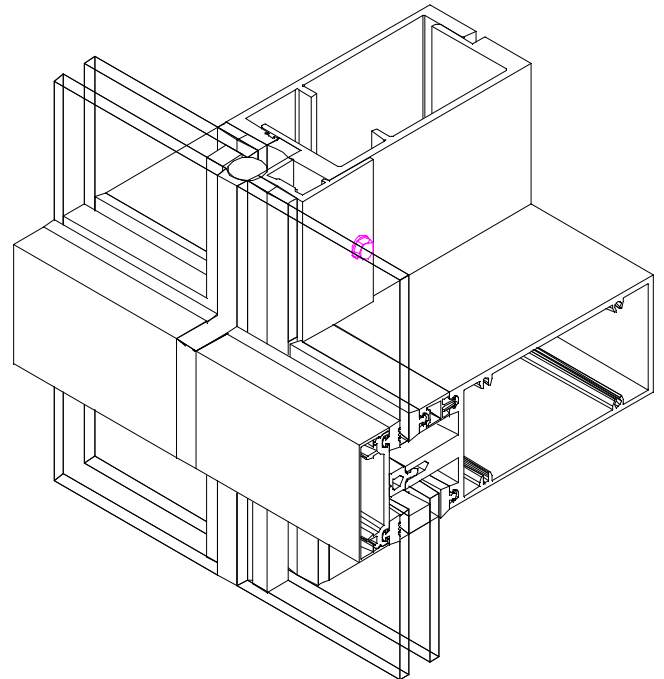
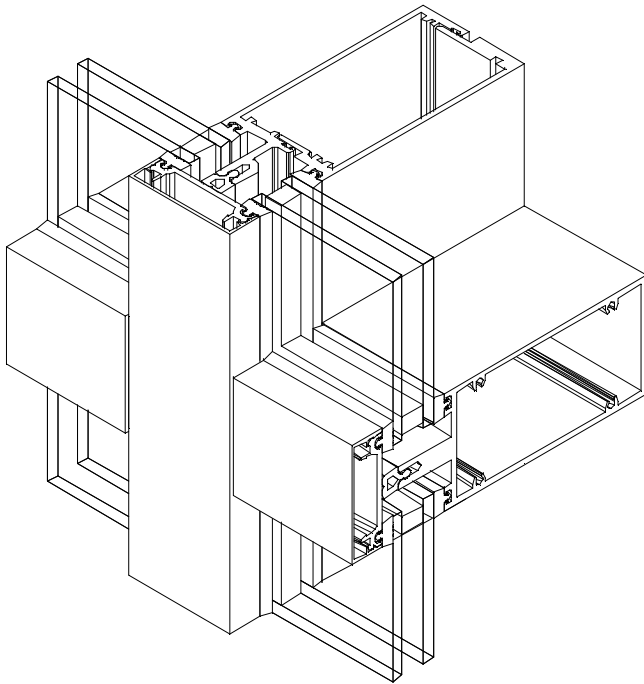
PART# 146243

Revised (6-15-12) RKB

# Field Glazing & Re-Glazing Manual

## Series: Superwall and Pressure Wall

## Curtainwall



Note: This manual should only be used for reference. Review the project drawings for specific part numbers and instructions. The project drawings supersede this manual.



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# PART# 146243

Revised (6-15-12) RKB

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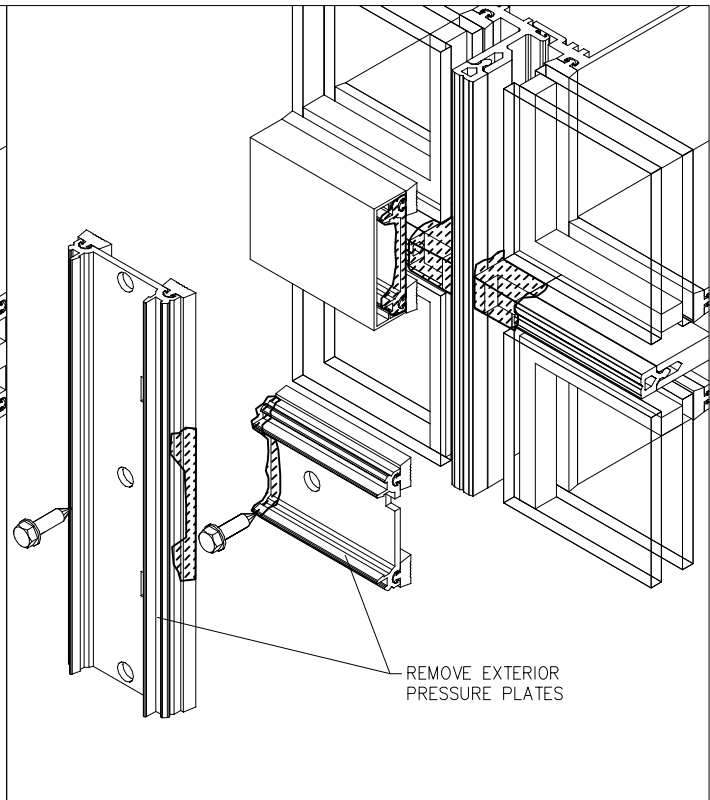
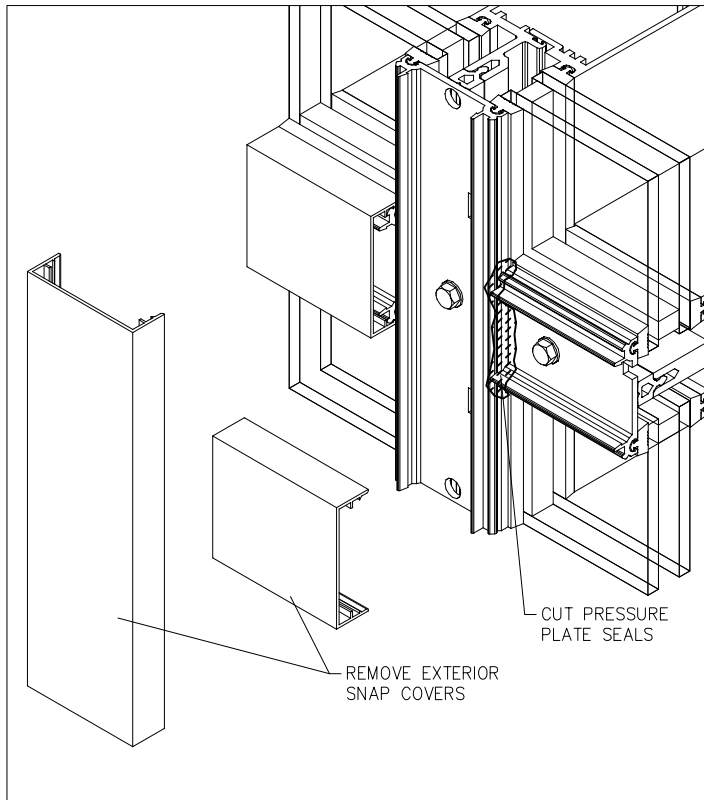
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SUBJECT

# Glass Removal & Clean Up Captured Glazing

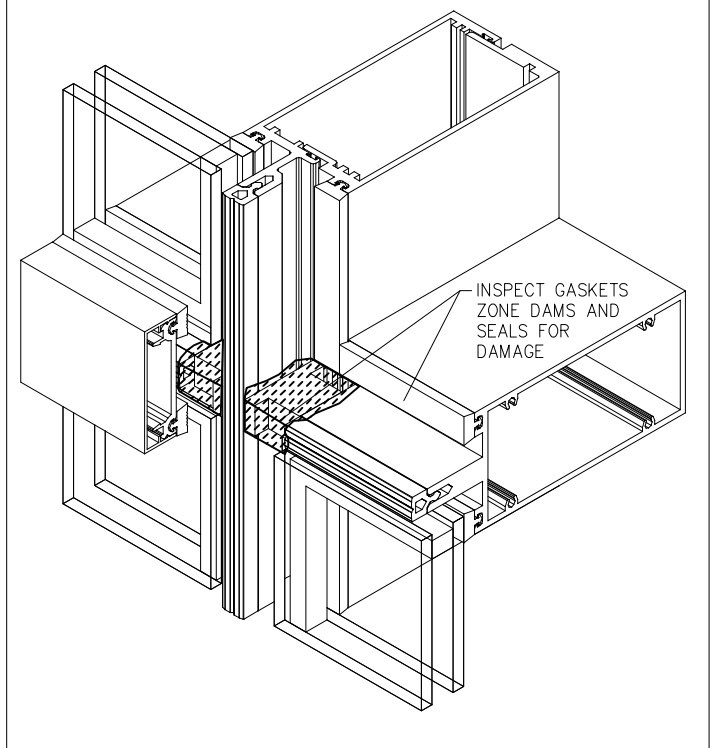
DRAWN BY: RKB  
ISSUE DATE: 3-2-11

SCALE: Full

REVISION By :  
REVISION DATE:

- 1) Remove the exterior snap covers from the perimeter of the glass lite. Check the covers for fasteners or pins before removing.
- 2) Cut the silicone seals at the ends of the horizontal pressure plates.
- 3) Remove the pressure plates around the perimeter of the lite.
- 4) Carefully mark the location of the glass setting blocks prior to removal of the glass. It is critical they are relocated correctly during re-glazing.
- 5) Remove the insulated glass unit from the frame and dispose of properly.
- 6) Using a scraper and knife, remove residual silicone from the pressure plates. It is not necessary to remove all silicone sealant as the replacement silicone will bond to the existing material.

Critical Note: Inspect gaskets, zone dams and silicone seals, replace prior to re-glazing if damaged.

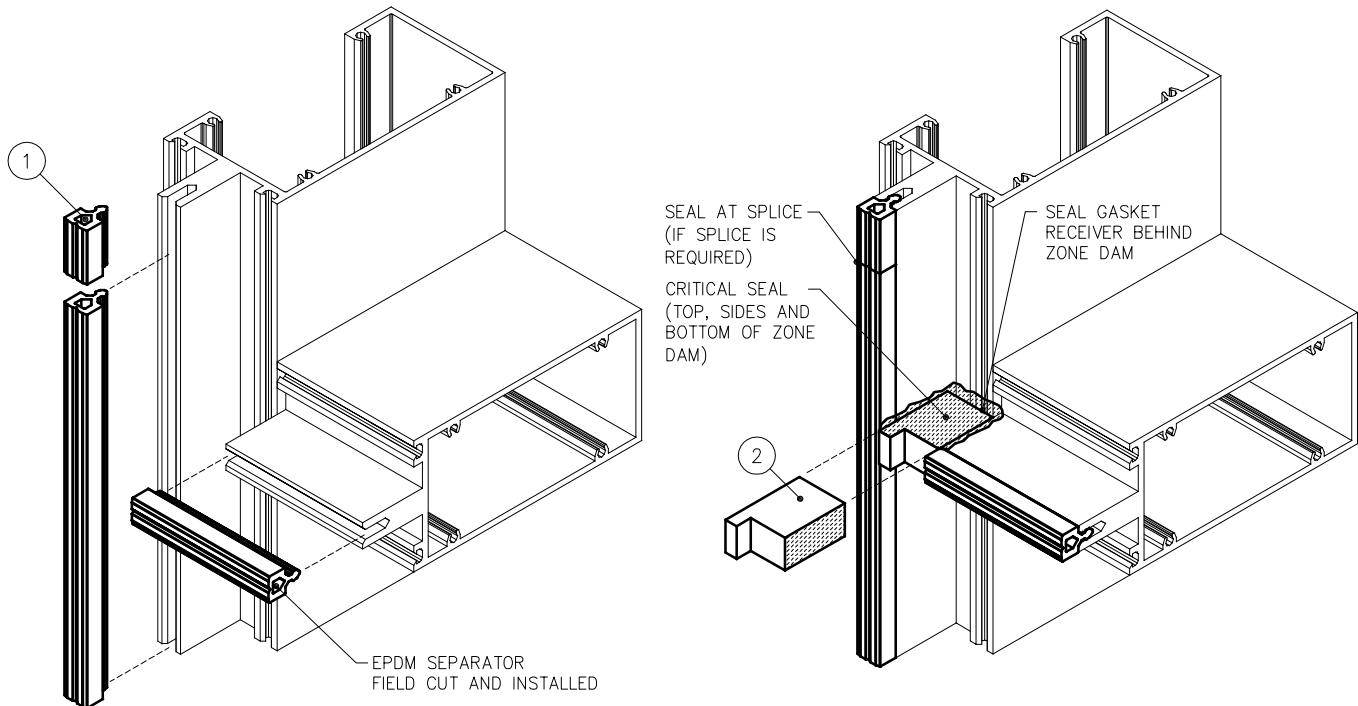


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SUBJECT

**Superwall – Exterior Glazed  
Separator and Zone Dams**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By : RKB  
REVISION DATE: 6/8/12

- 1) Using the two cloth alcohol wipe method, clean the entire glazing pocket.
- 2) All frame and perimeter sealing must be complete prior to glazing.
- 3) Install EPDM Separator ①. Do not splice horizontally. Vertical pieces may require splicing and sealing. Use finger pressure to press the EPDM Separator into the frame. Do not hammer the EPDM Separator into the frame.
- 4) Seal the gasket race of the vertical mullion at the Zone Dam locations. Zone Dams ② are inserted where horizontal mullions join vertical mullions.
- 5) Using a neutral cure silicone, butter the sides and back of the Zone Dam ② before installation. The top and bottom of the zone dam must be completely covered with silicone after installation. Carefully tool the silicone surface so a sufficient area is provided for air and water to pass around the glass corner once the glass is set.

**Warning: Sealing of Zone Dams is a very critical process that needs to be done with care!**

① SEPARATOR, EPDM, SUPERWALL (#5037)

② ZONE DAM, NEOPRENE SPONGE

Glazing sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. Wausau Window & Wall Systems recommends that the glazer consult their sealant manufacturer to ensure proper compatibility. Wausau Window & Wall Systems is not responsible for glazing sealant compatibility testing.

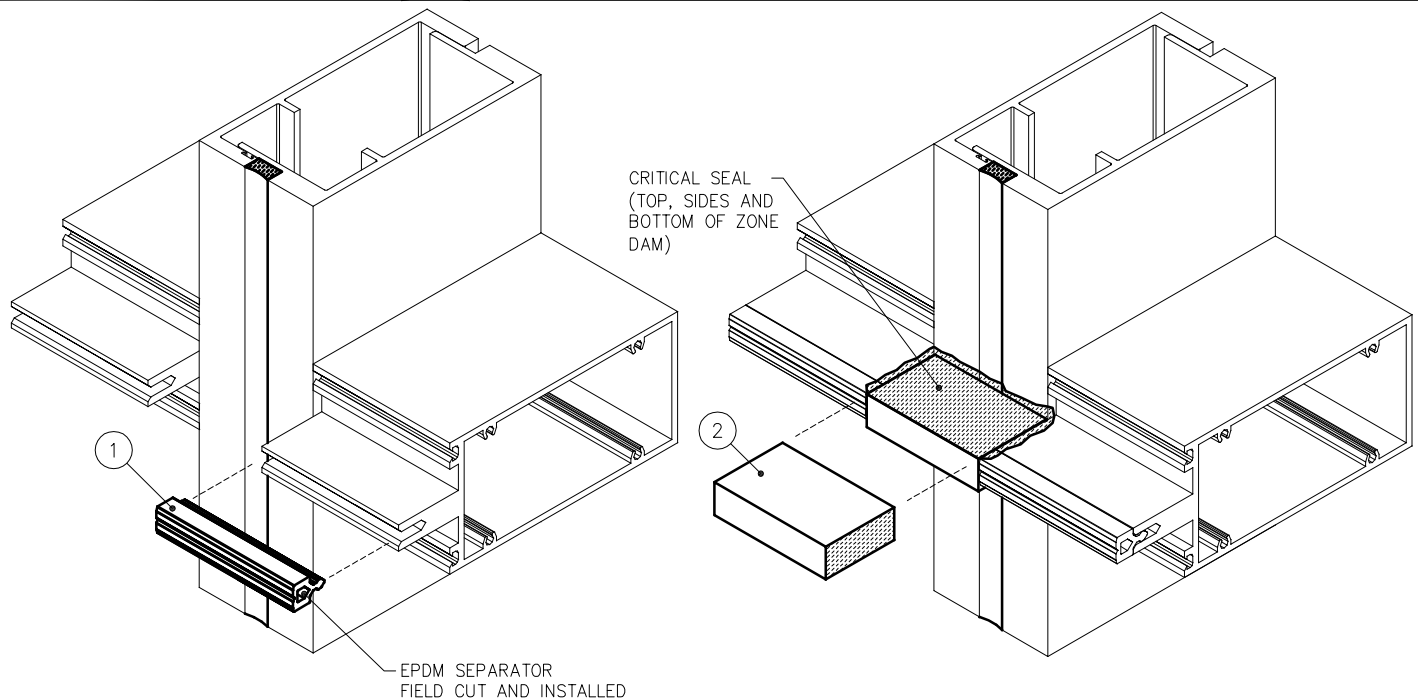
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SUBJECT

# Superwall – Exterior Glazed Separator and Zone Dams

DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By :  
REVISION DATE:

- 1) Using the two cloth alcohol wipe method, clean the entire glazing pocket and perimeter.
- 2) All frame and perimeter sealing must be complete prior to glazing.
- 3) Install EPDM Separator ①. Do not splice horizontally. Use finger pressure to press the EPDM Separator into the frame. Do not hammer the EPDM Separator into the frame.
- 4) Zone Dams ② are inserted where horizontal mullions join vertical mullions.
- 5) Using a neutral cure silicone, butter the sides and back of the Zone Dam ② before installation. The top and bottom of the Zone Dam must be completely covered with silicone after installation. Carefully tool the silicone surface so a sufficient area is provided for air and water to pass around the glass corner once the glass is set.

**Warning: Sealing of Zone Dams is a very critical process that needs to be done with care!**

① SEPARATOR, EPDM, SUPERWALL (#5037)

② ZONE DAM, NEOPRENE SPONGE

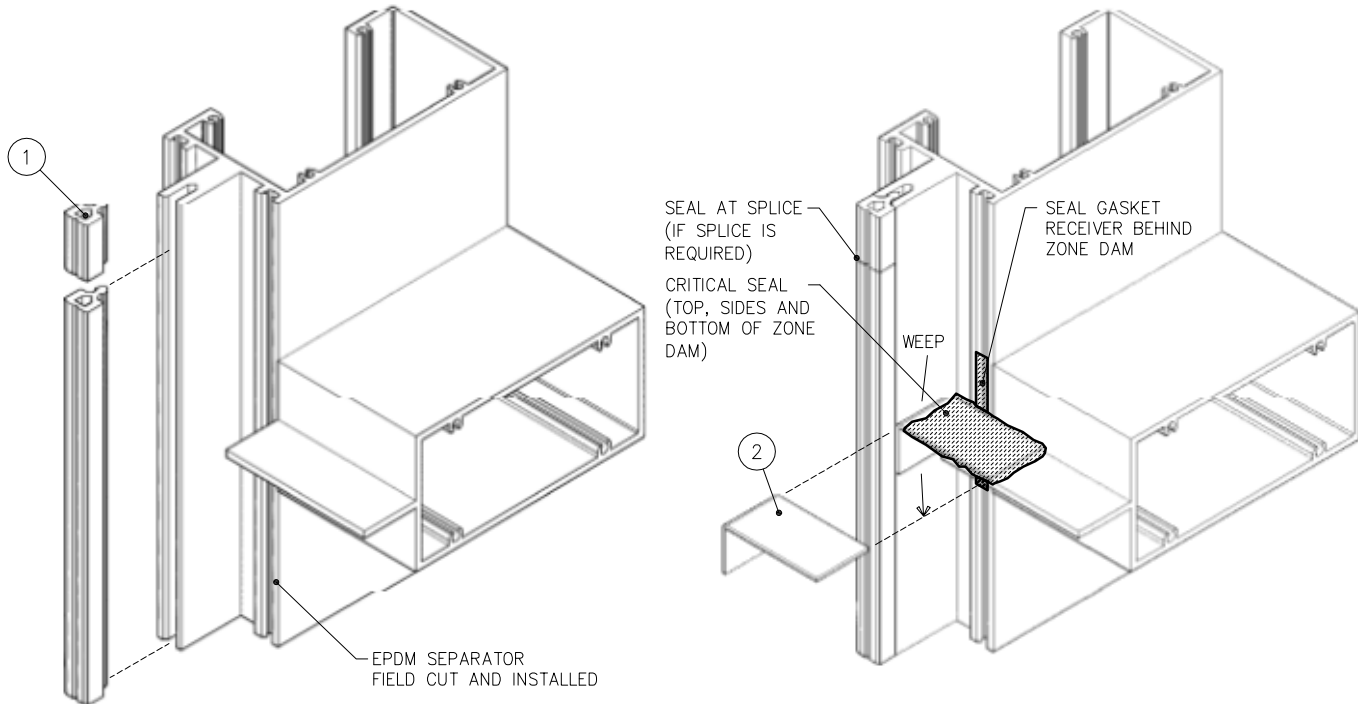
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SUBJECT

**Superwall – Exterior Glazed  
Separator and Zone Dams**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By :  
REVISION DATE:

- 1) Using the two cloth alcohol wipe method, clean the entire glazing pocket and perimeter.
- 2) All frame and perimeter sealing must be complete prior to glazing.
- 3) Install EPDM Separator ①. Vertical pieces may require splicing and sealing. Use finger pressure to press the EPDM Separator into the frame. Do not hammer the EPDM Separator into the frame.
- 4) Seal the gasket race of the vertical mullion at the Zone Dam locations. Zone Dams ② are inserted where horizontal mullions join vertical mullions. Leave an  $\frac{1}{8}$ " joint between the end of the Zone Dam and Vertical Extrusion stem to allow water to pass.
- 5) Using a neutral cure silicone, butter the bottom of the Zone Dam ② before installation. The top and bottom of the zone dam must be completely covered with silicone after installation. Carefully tool the silicone surface so a sufficient area is provided for air and water to pass around the end once the glass is set.

**Warning: Sealing of Zone Dams is a very critical process that needs to be done with care!**

① SEPARATOR, EPDM, SUPERWALL (#5037)

② 2"x7/8"x1/16" x 1 1/8" LONG BRAKE METAL ZONE DAM

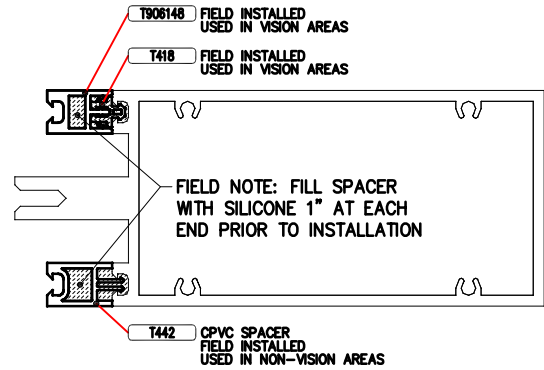
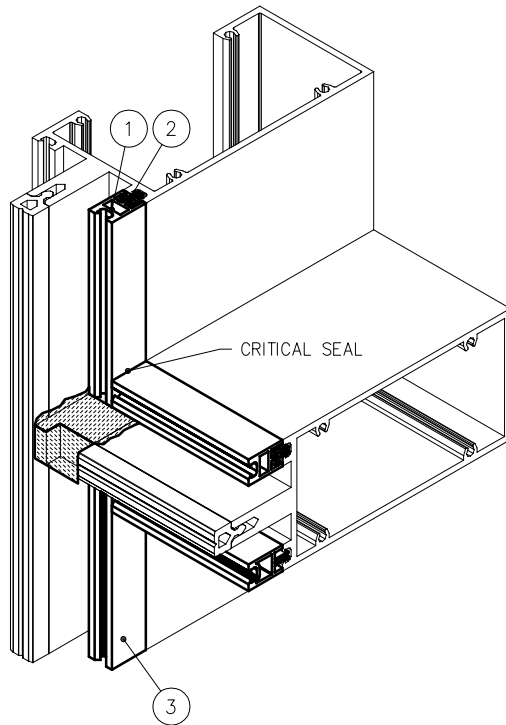
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SUBJECT

**Superwall – Exterior Glazed  
Spacers**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

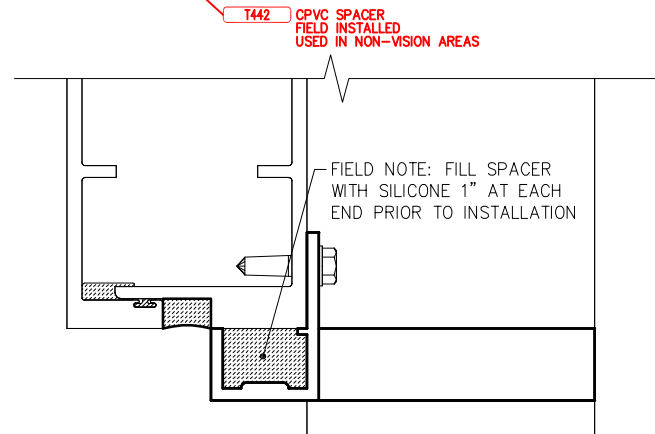
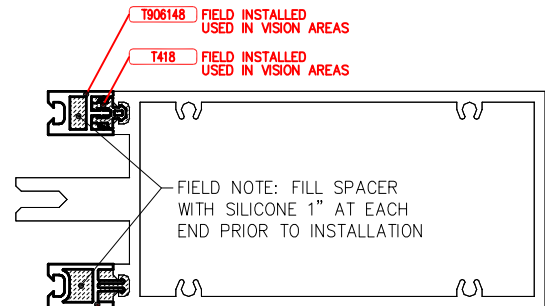
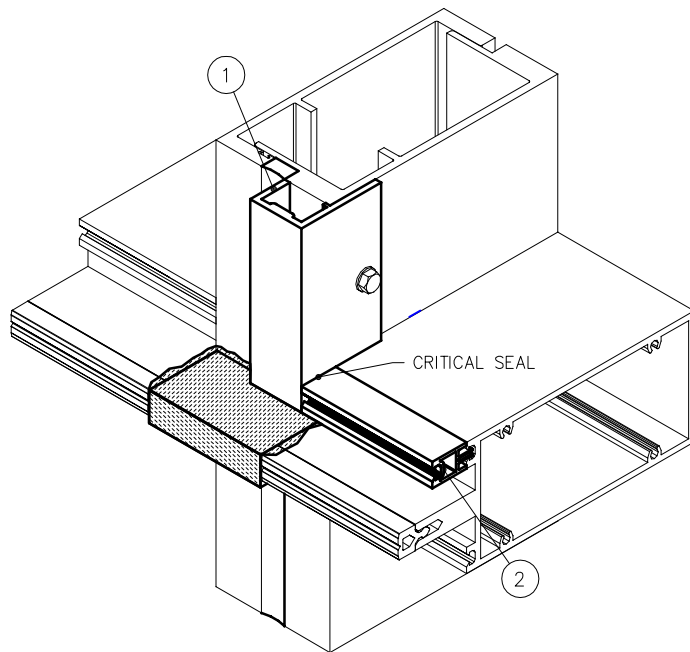
SCALE: Full

REVISION By :  
REVISION DATE:

- 1) Using the two cloth alcohol wipe method, clean the entire glazing pocket, inserts and spacers.
- 2) When  $\frac{1}{4}$ " glass is required, install spacers after frame assembly and sealing is complete.
- 3) Seal inserts with neutral cure silicone.
- 4) Aluminum spacers are finished to match and are used in vision areas.
- 5) CPVC spacers are used in non-vision areas.

- ① SUPERWALL, GLAZING ADAPTOR (T906148)
- ② KB, ADAPTER, INSERT, 85, DURO (T418)
- ③ INSERT, RIGID CPVC, SUPERWALL (T442)

Glazing sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. Wausau Window & Wall Systems recommends that the glazer consult their sealant manufacturer to ensure proper compatibility. Wausau Window & Wall Systems is not responsible for glazing sealant compatibility testing.

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www.wausauwindow.com**SUBJECT** Superwall – Exterior Glazed  
Spacers**DRAWN BY:** RKB  
**ISSUE DATE:** 3/2/11**SCALE:** Full**REVISION By :**  
**REVISION DATE:**

- 1) Using the two cloth alcohol wipe method, clean the entire glazing pocket, inserts and spacers.
- 2) When  $\frac{1}{4}$ " glass is required, install spacers after frame assembly and sealing is complete.
- 3) Seal inserts with neutral cure silicone.
- 4) Aluminum spacers are finished to match and are used in vision areas.
- 5) CPVC spacers are used in non-vision areas.

① TRIM, INSERT, (825553)

② INSERT, RIGID CPVC, SUPERWALL (T442)

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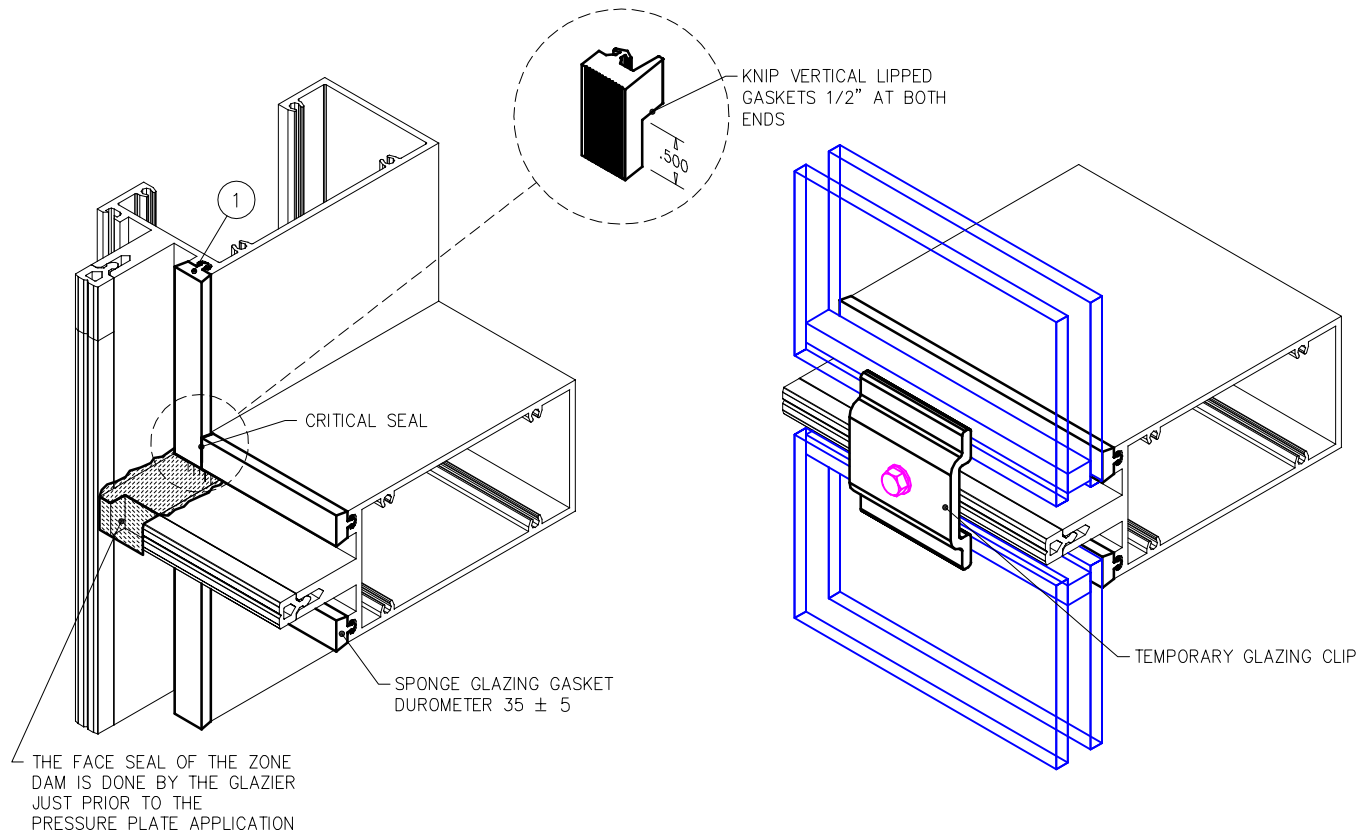


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SUBJECT

**Superwall – Exterior Glazed  
Interior Gasket & Temporary Clips**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By : RKB  
REVISION DATE: 7/9/12

- 1) Using the two cloth alcohol wipe method, clean the entire glazing pocket.
- 2) Glazing gaskets are supplied for field installation.
- 3) Butter all interior gasket butt joints with sealant and crowd the gasket to prevent shrinkage. The vertical interior gaskets are to extend only to the upper and lower edges of the horizontal gaskets (approx. 1/2" beyond the DLO). Set the ends of the gaskets in sealant (approx. 2 inches). If gaskets have a lip, knip both ends of the vertical gaskets.
- 4) Glazing must immediately follow sealing. If the sealant is allowed to set up prior to glazing, adequate glazing compression may not be achieved.
- 5) Full depth setting blocks are required and are typically supplied by the glazier. Check with the glass fabricator to determine if side blocking is required. Setting blocks are typically located at 1/4 points. Check glazing details and window elevations for non-typical location requirements.
- 6) Ensure that proper gasket type is used at the interior (typically sponge). Exterior and Interior gaskets typically differ in durometer.
- 7) Remove oil, dirt and debris from the glazing tongue area. Place full depth setting blocks and install glass or panels. Ensure that the glass and panels are set tightly against the sill gaskets to avoid "hang up" of the infill on sill setting blocks. Apply short pieces of gasketed pressure plate to act as temporary clips retaining the infill.
- 8) At a minimum, the temporary clips must be located at each corner and along each edge a maximum of 30" on center. This will ensure that adequate compression is achieved.
- 9) Apply a silicone face seal on the zone dam prior to application of the pressure plate.

**① GASKET, 0.250" GAP, SUPERWALL SPONGE**

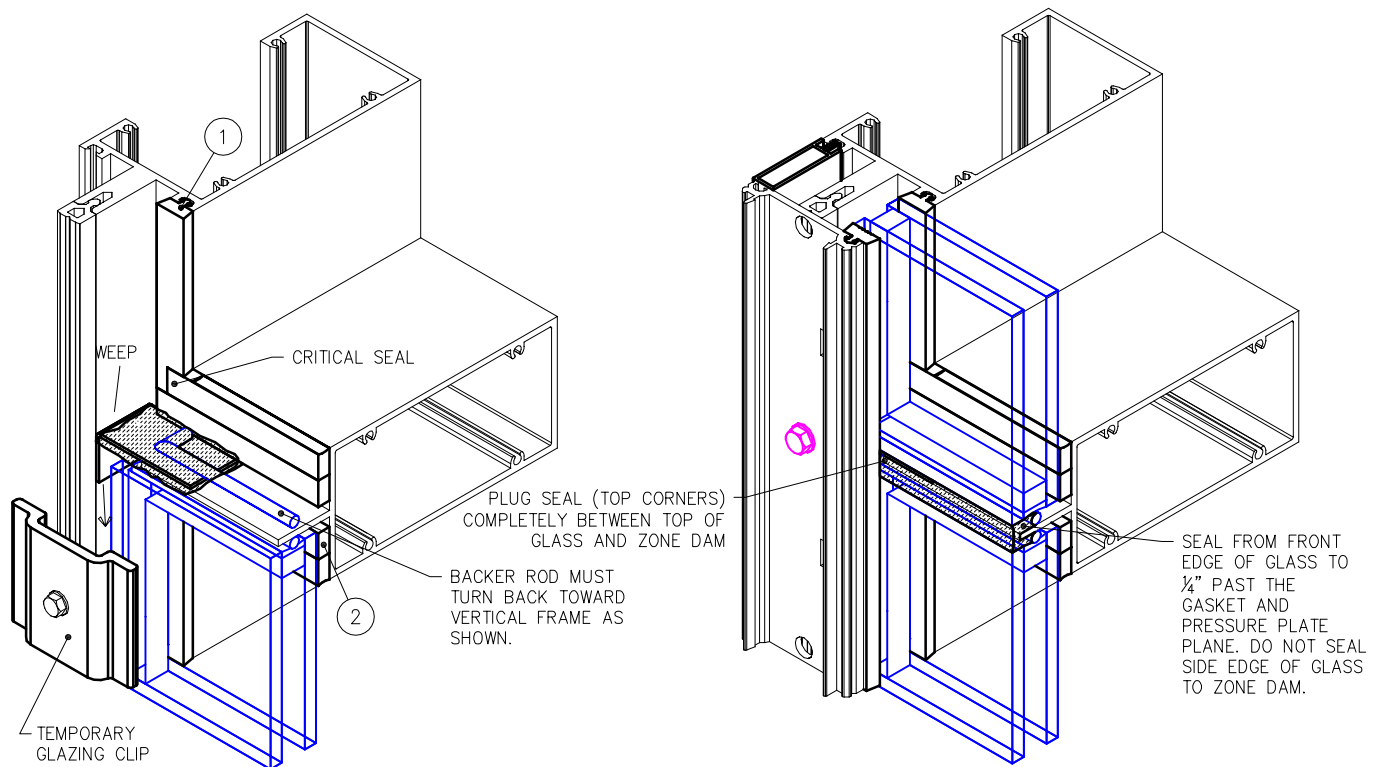
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SUBJECT

**Superwall – Exterior Glazed  
Interior Gasket & Temporary Clips**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By : RKB  
REVISION DATE: 6/8/12

- 1) Using the two cloth alcohol wipe method, clean the entire glazing pocket.
- 2) Glazing gaskets and glazing tape are supplied for field installation.
- 3) Butter all interior gasket butt joints with sealant and crowd the gasket to prevent shrinkage. The vertical gaskets are to extend only to the upper and lower edges of the horizontal gaskets (approx.  $\frac{1}{2}$ " beyond the DLO). Set the ends of the gaskets in sealant (approx. 2 inches).
- 4) Glazing must immediately follow sealing. If the sealant is allowed to set up prior to glazing, adequate glazing compression may not be achieved.
- 5) Ensure that proper gasket type is used at the interior (typically sponge). Exterior and Interior gaskets typically differ in durometer.
- 6) Glazing tape is applied with a minimum  $\frac{5}{16}$ " sealant joint setback from the vertical DLO. See a Structural Engineer to determine the required sealant joint.
- 7) Leave the glazing tape release paper in place and pig tail the ends.
- 8) Full depth setting blocks are required and are typically supplied by the glazier. Check with the glass fabricator to determine if side blocking is required. Setting blocks are typically located at  $\frac{1}{4}$  points. Check glazing details and window elevations for non-typical location requirements.
- 9) Remove oil, dirt and debris from the glazing tongue area. Place full depth setting blocks and install glass or panels. Ensure that the glass and panels are set tightly against the sill gaskets to avoid "hang up" of the infill on sill setting blocks. Apply short pieces of gasketed pressure plate to act as temporary clips retaining the infill.
- 10) At a minimum, the temporary clips must be located at each corner and along each edge a maximum of 30" on center. This will ensure that adequate compression is achieved.

① GASKET, 0.250" GAP, SUPERWALL SPONGE

② KB, TAPE, TREMCO, 0.250" X 0.500" (#142712)

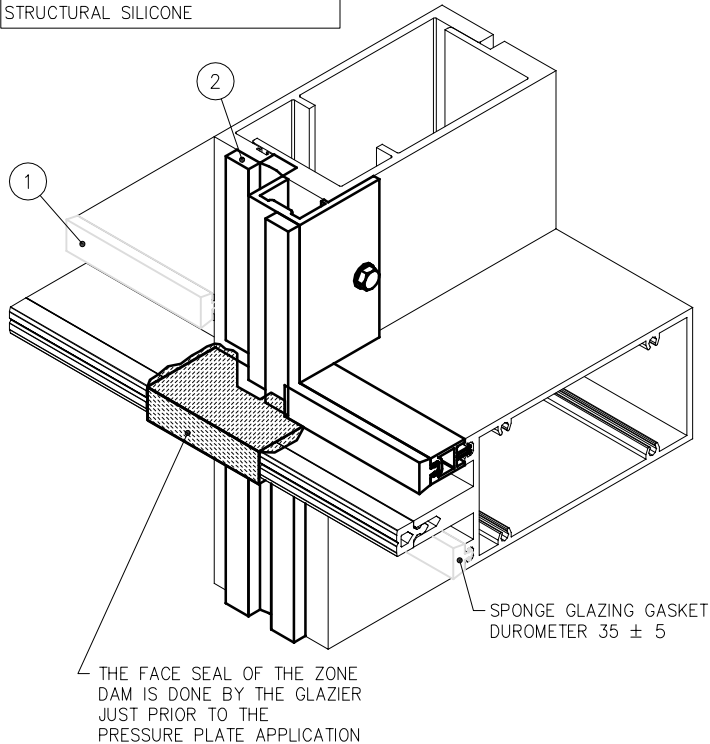
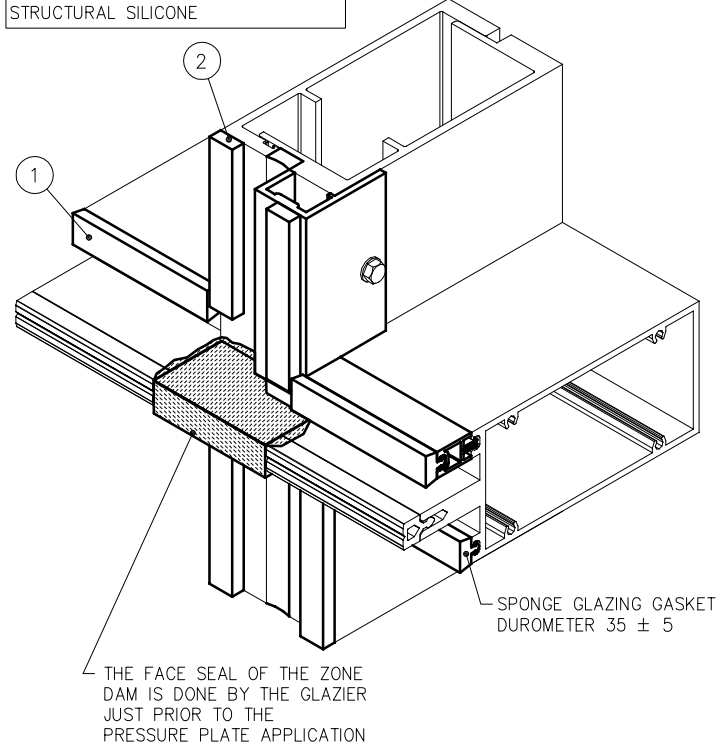
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SUBJECT

**Superwall – Exterior Glazed  
Tape & Gasket**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By : RKB  
REVISION DATE: 6/8/12TAPE, GASKET & SEALANT LOCATIONS  
FOR INTERIOR APPLICATION OF  
STRUCTURAL SILICONETAPE, GASKET & SEALANT LOCATIONS  
FOR EXTERIOR APPLICATION OF  
STRUCTURAL SILICONE

- 1) Using the two cloth alcohol wipe method, clean the entire glazing pocket.
- 2) Glazing gaskets and glazing tape are supplied for field installation.
- 3) Glazing must immediately follow sealing. If the sealant is allowed to set up prior to glazing, adequate glazing compression may not be achieved.
- 4) Ensure the proper gasket type is used at the interior (typically sponge). Exterior and Interior gaskets typically differ in durometer. Crowd the glazing gaskets to prevent shrinkage.
- 5) Glazing Tape is applied with a minimum  $\frac{5}{16}$ " sealant joint setback from the vertical DLO. See a Structural Engineer to determine the required sealant joint.
- 6) Leave the glazing tape release paper in place and pig tail the ends.
- 7) Glazing gaskets are used horizontally, fill the ends of the gasket race with silicone to marry with the glazing tape. Tool the sealant after application.
- 8) Apply a silicone face seal on the zone dam prior to application of the pressure plate.
- 9) Full depth setting blocks are required and are typically supplied by the glazier. Check with the glass fabricator to determine if side blocking is required. Setting blocks are typically located at  $\frac{1}{4}$  points. Check glazing details and window elevations for non-typical location requirements.
- 10) Remove oil, dirt and debris from the glazing tongue area. Place full depth setting blocks and install glass or panels. Ensure that glass and panels are set tightly against the sill gaskets to avoid "hang up" of the infill on sill setting blocks. Apply short pieces of gasketed pressure plate to act as temporary clips retaining the infill.

① GASKET, 0.250" GAP, SUPERWALL SPONGE

② KB, TAPE, TREMCO, 0.250" X 0.500" (#142712)

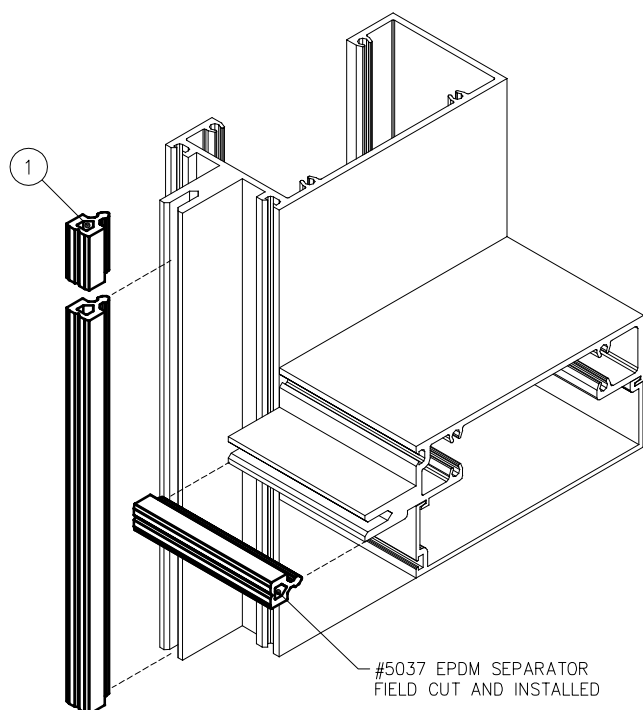
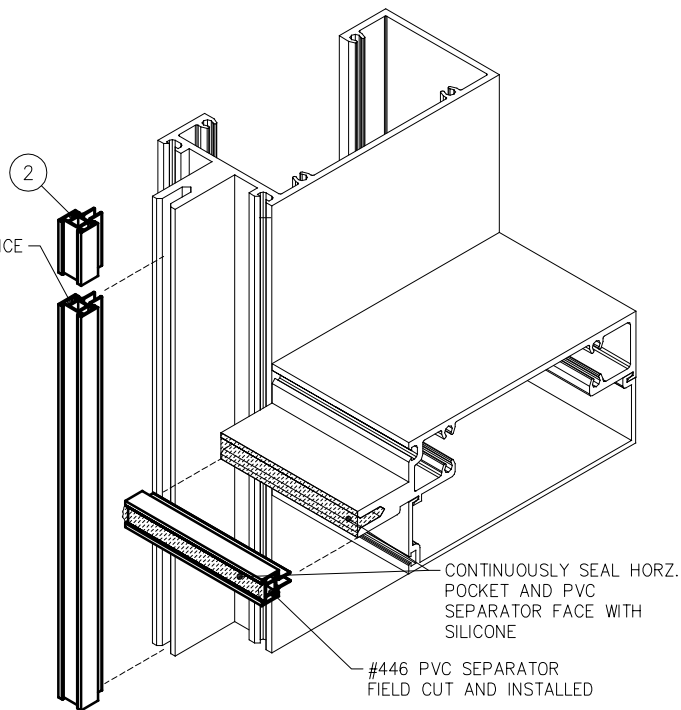
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SUBJECT

**Superwall – Int. Glazing Bead Separators**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By :  
REVISION DATE:**Initial Glazing from Exterior****Initial Glazing from Interior**

- 1) Using a two cloth alcohol wipe method, clean the entire glazing pocket and perimeter edge of frame. All frame and perimeter sealing must be complete prior to glazing.
- 2) If using the PVC Separator (2). Place a continuous Silicone Seal in all horizontal PVC Separator pockets prior to installation. After installation, apply a continuous Silicone Seal to the face of the horizontal PVC Separators just prior to installing the pressure plates.
- 3) Install EPDM Separator (1) or PVC Separator (2). Do not splice horizontally. Vertical pieces may require splicing and sealing. Use finger pressure to press the Separator into the frame. Do not hammer the Separator into the frame.

**Note:**

- 4) If the glass is initially set from the exterior, use EPDM separator (#5037).
- 5) If the glass is re-glazed from the exterior, use EPDM separator (#5037).
- 6) If the glass is initially set from the interior, use PVC separator (#446).
- 7) If the glass is re-glazed from the interior, leave the existing separator in place.

Note: Superwall with removable interior beads can be initially glazed either entirely from the interior, or entirely from the exterior as shown, but a combination of both is not recommended, except as necessary for re-glazing.

Special anchor details may be required for inside glazing of spandrels at anchorage conditions. Insulating spandrel glass is recommended.

It is especially critical to ensure 100% tooled seals at interior glazing gasket races and zone dams above removable interior beads, as well as bead-to-frame joints. Refer to Wausau installation instructions for more information.

① SEPARATOR, EPDM, SUPERWALL (#5037)

② SEPARATOR, PVC, SUPERWALL (#446)

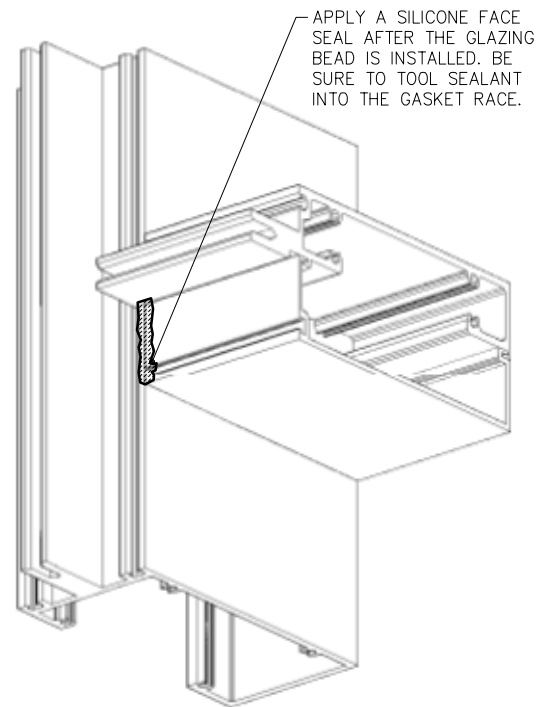
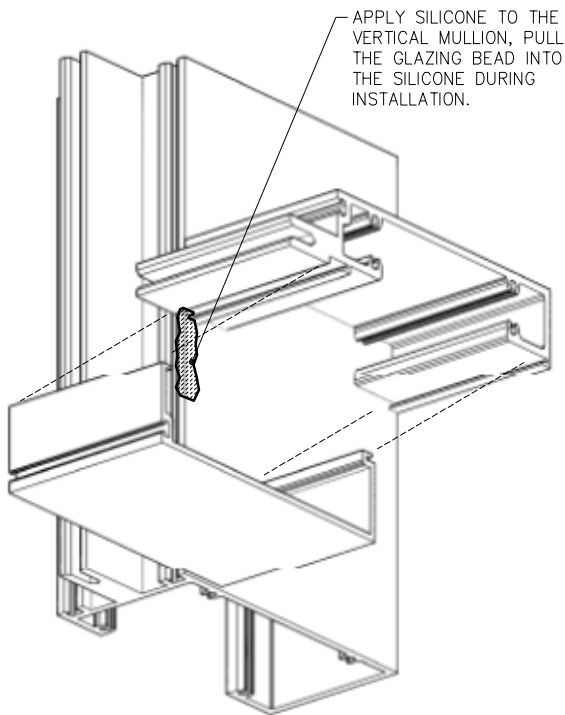
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SUBJECT

**Superwall – Interior Glazing Bead Sealing**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By :  
REVISION DATE:**EXTERIOR GLAZED GLASS**

- 1) Using a two cloth alcohol wipe method, clean the entire glazing pocket, perimeter edge of frame and glazing bead ends. All frame and perimeter sealing must be complete prior to glazing.
- 2) If the curtainwall unit is exterior glazed. Apply a silicone seal to the edge of the vertical frame member. The seal must be long enough to reach to the DLO.
- 3) Install the glazing bead by pulling the ends of the bead into the vertical frame member silicone seal. Wipe off excess visible silicone sealant.
- 4) Apply a face seal to the ends of the beads. Tool the sealant into the joint between the vertical frame member and the glazing bead. Be sure to tool sealant into the end of the gasket race completely sealing the end of the gasket race. This seal must be completed prior to glazing.

**INTERIOR GLAZED GLASS**

- 1) Using a two cloth alcohol wipe method, clean the entire glazing pocket, perimeter edge of frame and glazing bead ends. All frame and perimeter sealing must be complete prior to glazing.
- 2) If the curtainwall unit is interior glazed, the glass unit is set prior to sealing and glazing bead installation.
- 3) Apply a silicone seal to the edge of the vertical frame member. The seal must be long enough to reach to the DLO.
- 4) Install the glazing bead by pulling the ends of the bead into the vertical frame member silicone seal. Wipe off excess visible silicone sealant.
- 5) Using a sealant tooling knife, apply a face seal to the ends of the beads. Tool the sealant into the joint between the vertical frame member and the glazing bead. Be sure to tool the sealant into the end of the gasket race, completely sealing the end of the gasket race. This blind seal will be difficult, but it is very critical. If installed incorrectly, there is the potential for air and/or water leakage at this location.

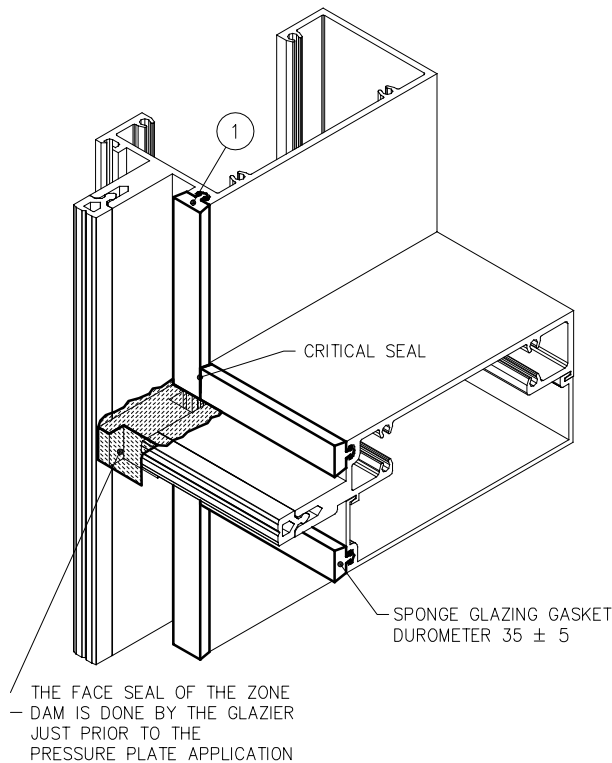
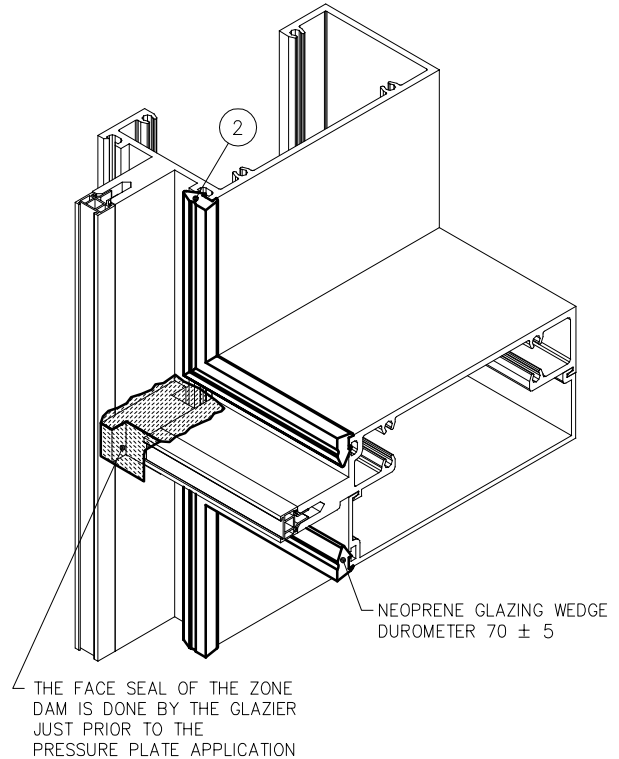
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SUBJECT

**Superwall – Interior Glazing Beads  
Interior Gasket or Wedge**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By :  
REVISION DATE:**Initial Glazing from Exterior****Initial Glazing from Interior**

- 1) Using a two cloth alcohol wipe method, clean the entire glazing pocket.
- 2) Glazing gaskets and wedge are supplied for field installation.
- 3) Butter all interior gasket butt joints with sealant and crowd the gasket to prevent shrinkage. The vertical gaskets are to extend only to the upper and lower edges of the horizontal gaskets (approx.  $\frac{1}{2}$ " beyond the DLO). Set the ends of the gaskets in sealant (approx. 2 inches).
- 4) Butter all interior wedge corner joints with sealant and crowd the wedge to prevent shrinkage.
- 5) Glazing must immediately follow sealing. If the sealant is allowed to set up prior to glazing, adequate glazing compression may not be achieved.
- 6) Full depth setting blocks are required and are typically supplied by the glazier. Check with the glass fabricator to determine if side blocking is required. Setting blocks are typically located at  $\frac{1}{4}$  points. Check glazing details and window elevations for non-typical location requirements.
- 7) Ensure that proper gasket type is used at the interior. Exterior and Interior gaskets typically differ in durometer.
- 8) If glazing from the interior, the sponge gasket will be installed in the pressure plate (exterior). Using molded corner glazing wedge at the interior is the most robust installation.
- 9) Remove oil, dirt and debris from the glazing tongue area. Place full depth setting blocks and install glass or panels. Ensure that glass and panels are set tightly against the sill gaskets to avoid "hang up" of the infill on sill setting blocks. Apply short pieces of gasketed pressure plate to act as temporary clips retaining the infill.

**Note:**

- 1) If the glass is initially set from the exterior, use gasket (#5141).
- 2) If the glass is re-glazed from the exterior, use gasket (#5141).
- 3) If the glass is initially set from the interior, use wedge (#6212).
- 4) If the glass is re-glazed from the interior, use wedge (#6212).

Note: Superwall with removable interior beads can be initially glazed either entirely from the interior, or entirely from the exterior as shown, but a combination of both is not recommended, except as necessary for re-glazing.

Special anchor details may be required for inside glazing of spandrels at anchorage conditions. Insulating spandrel glass is recommended.

It is especially critical to ensure 100% tooled seals at interior glazing gasket races and zone dams above removable interior beads, as well as bead-to-frame joints. Refer to Wausau installation instructions for more information.

- ① GASKET, EPDM, 0.250" GAP, SUPERWALL SPONGE (#5141)
- ② WEDGE, NEOPRENE, 0.250" GAP, 70 DUROMETER (#6212)

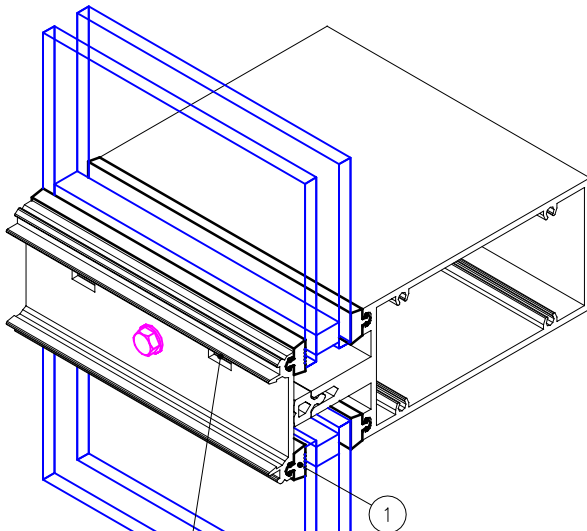
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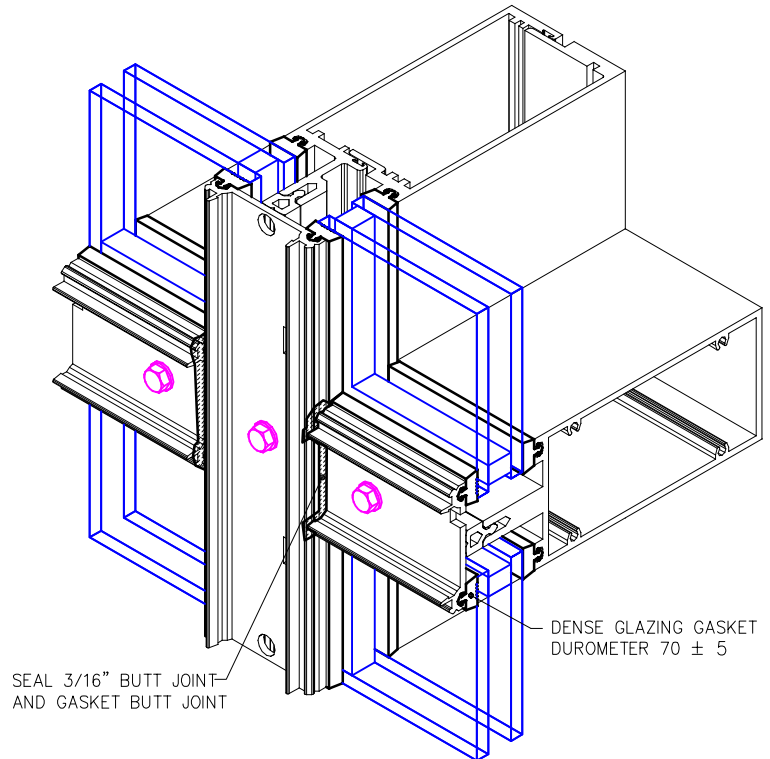
SUBJECT

**Superwall – Interior or  
Exterior Glazed Pressure Plate**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By : RKB  
REVISION DATE: 6-1-12

HORIZONTAL PRESSURE PLATE IS INSTALLED WITH WEEP HOLES ON THE TOP SIDE OF THE FRAME STEM. JAMB PRESSURE PLATES ARE INSTALLED WITH WEEP HOLES TOWARD THE GLASS SIDE.



- 1) Weep slots in the horizontal pressure plate must be on the top side of the frame tongue.
- 2) Allow 3/16" clearance between the horizontal and vertical pressure plates.
- 3) Insert the Exterior Gaskets ① into the pressure plate.
- 4) Pressure plates are pre-punched with  $\frac{3}{8}$ " holes – 4" o.c., The EPDM Separator or PVC Separator are not pre-punched or drilled. The fastener will thread itself through the separator with driving pressure. Do not attempt to drive the fastener with a hammer.
- 5) Attach the pressure plate and gasket using a #14 SS HWH SMS. Use a six point socket and a torque wrench. Pressure plate fasteners are installed 8" o.c., starting a maximum of 4" from each end. Torque the fasteners 80 to 100 in-lbs on exterior glazed pressure plate. Torque the fasteners 80 to 100 in-lbs on interior glazed pressure plate.
- 6) Tighten the fasteners evenly to uniformly compress the gasket. Start at one end and work toward the opposite end. If the glass is not properly seated, the pressure plates may bow in excess of  $\frac{1}{6}$ ". If this occurs, ensure that the glass is firmly bedded and not "hung-up" on the setting blocks. Then use additional fasteners and fill in the pre-punched holes at the location of the bows.
- 7) Using the two cloth alcohol wipe method, clean dirt and oil substrates before sealing.
- 8) Following the sealant manufacturers instructions, thoroughly seal the joint between the horizontal and vertical pressure plates. Use a medium modulus neutral cure silicone. This seal must be done just prior to the application of the snap-on covers.

① GASKET, 0.250" GAP, SUPERWALL DENSE (#6183)

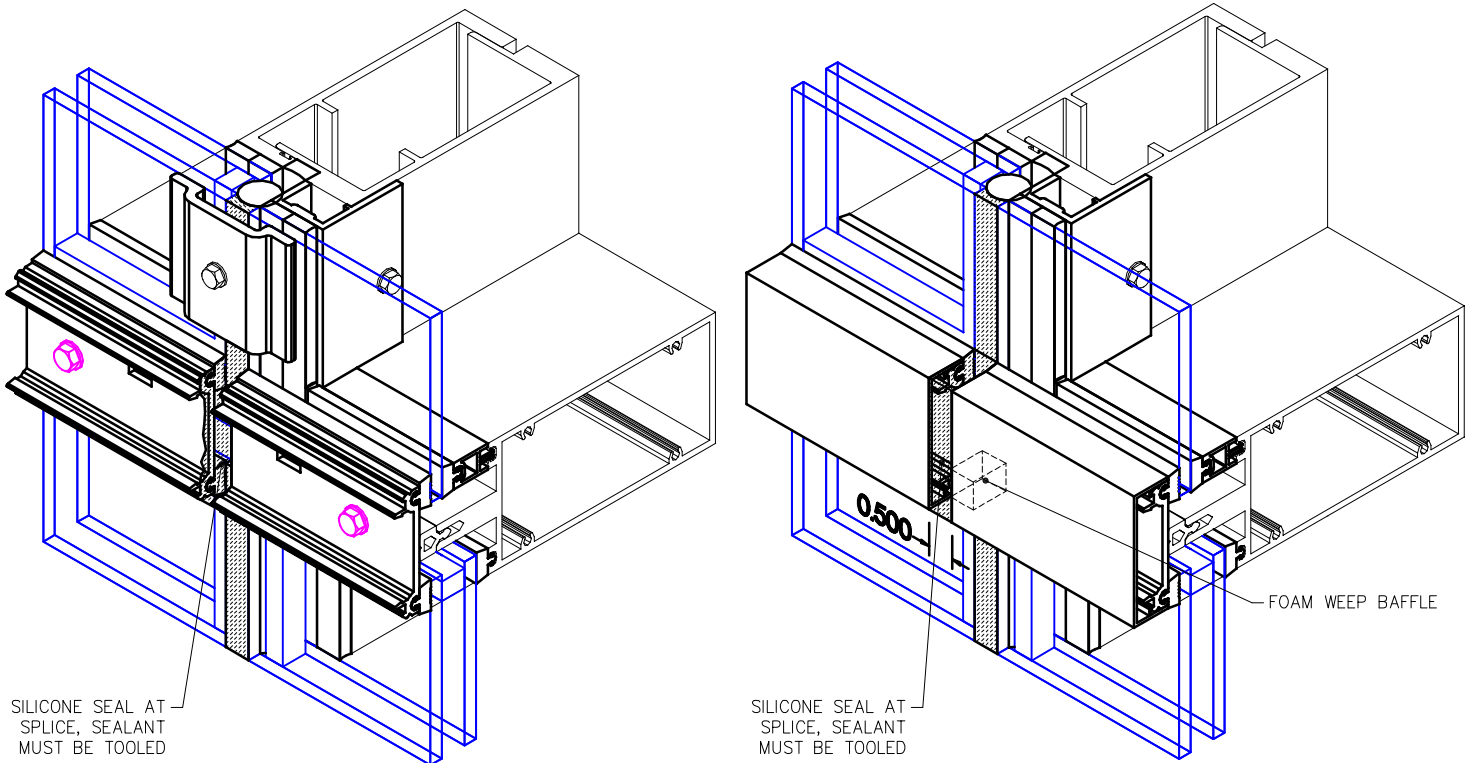
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SUBJECT

**Superwall – Exterior Glazed  
Pressure Plate & Cover**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By :  
REVISION DATE:

- 1) Pressure plate standard length is 24'-2" (290"). Splices can be located to minimize the number of different lengths.
- 2) Snap-on cover standard length is 24'-2" (290"). Splices can be located to minimize the number of different lengths.
- 3) Using the two cloth alcohol wipe method, clean dirt and oil substrates before sealing. Mask joints where necessary before sealing for proper appearance. Provide appropriate sealant backers and tool all sealant.

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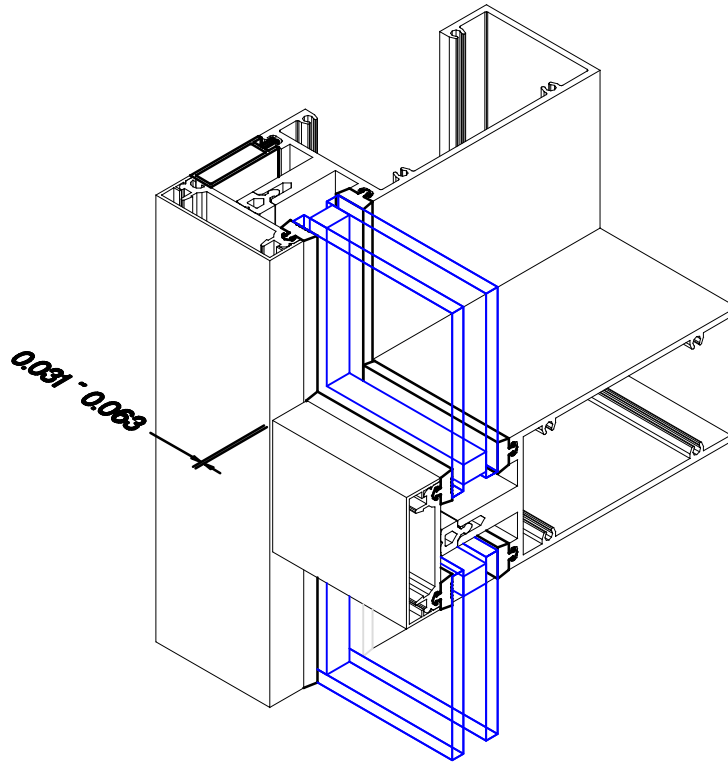


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SUBJECT

**Superwall – Exterior Glazed  
Pressure Plate Cover**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By :  
REVISION DATE:

- 1) Apply snap-on covers immediately after sealing the pressure plates. Use a rubber mallet and wood block to avoid denting the cover or damaging the finish.
- 2) Typically the vertical covers run through and are applied first.
- 3) Pin the vertical covers in an inconspicuous location to prevent them from "walking" downward over time. Pinning is not required if perimeter sealant contacts the cover.
- 4) Apply horizontal covers. Allow a  $\frac{1}{32}$ " to  $\frac{1}{16}$ " gap at each end of the cover to allow for expansion and water drainage. Trim the covers as necessary to maintain this allowance. Non-typical or deep horizontal covers may require drilled weeps and/or pinning.

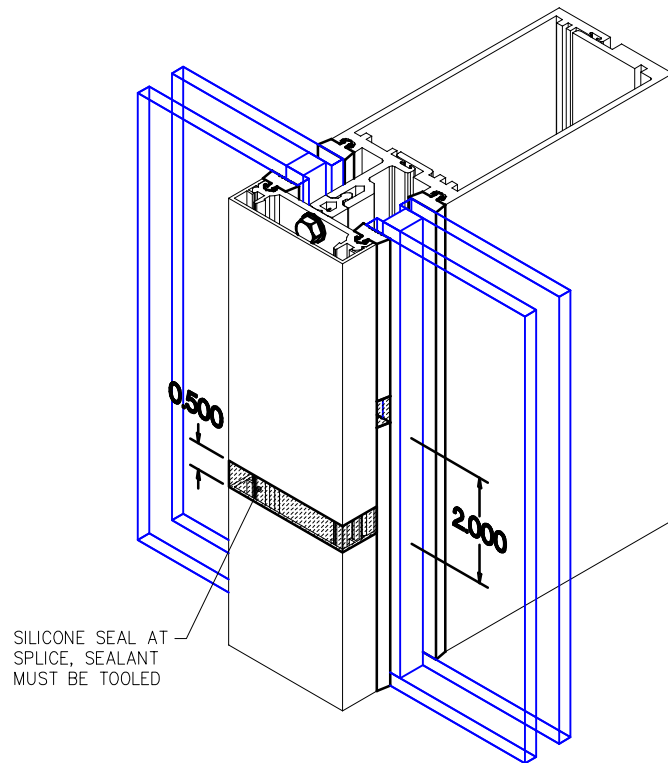
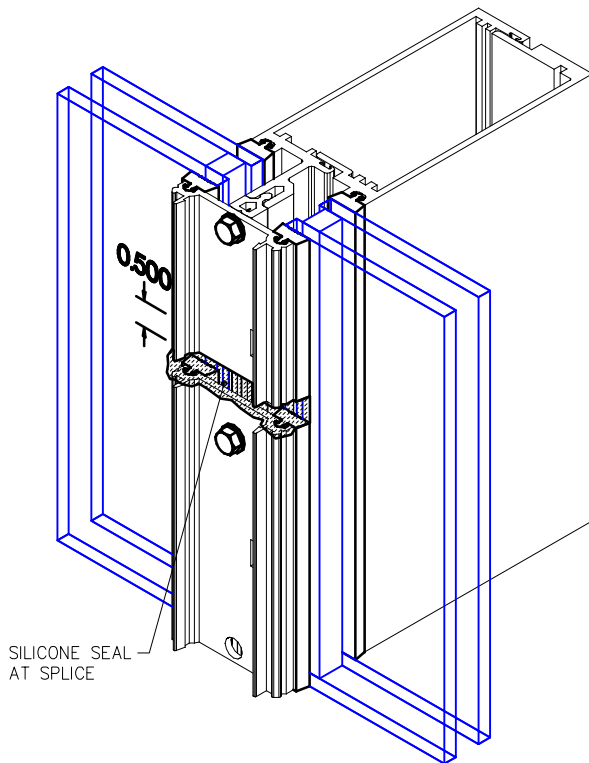
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SUBJECT

**Superwall – Exterior Glazed  
Pressure Plate & Cover Splice**DRAWN BY: RKB  
ISSUE DATE: 3/2/11

SCALE: Full

REVISION By :  
REVISION DATE:

- 1) Pressure plate standard length is 24'-2" (290"). Splices can be located to minimize the number of different lengths.
- 2) Snap-on cover standard length is 24'-2" (290"). Splices can be located to minimize the number of different lengths.
- 3) Where frame splices occur, stagger pressure plate and snap on cover splices as shown.
- 4) Using the two cloth alcohol wipe method, clean dirt and oil substrates before sealing. Mask joints where necessary before sealing for proper appearance. Provide appropriate sealant backers and tool all sealant.

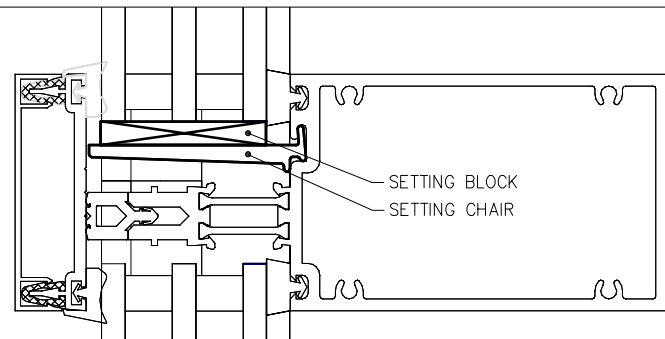
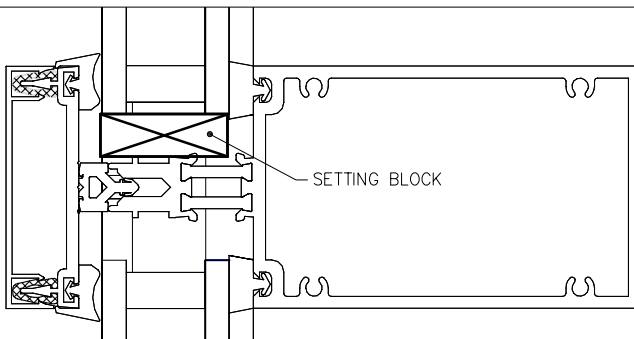
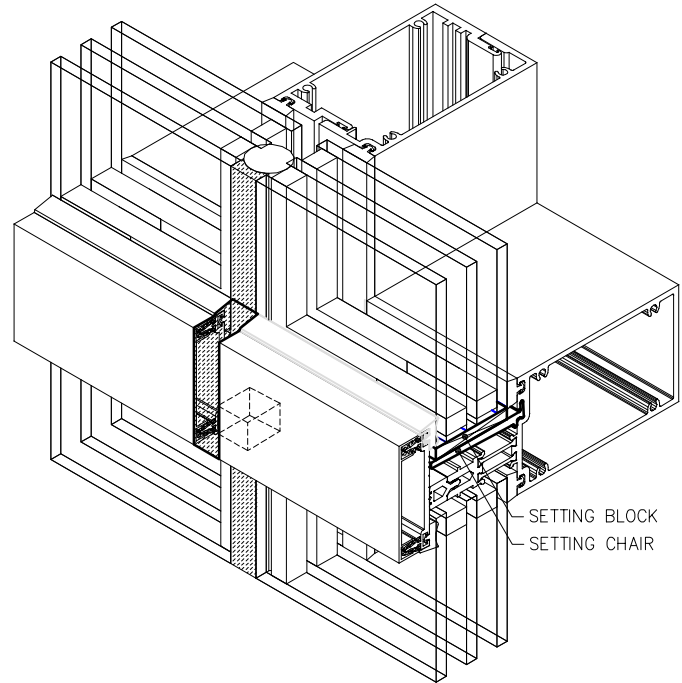
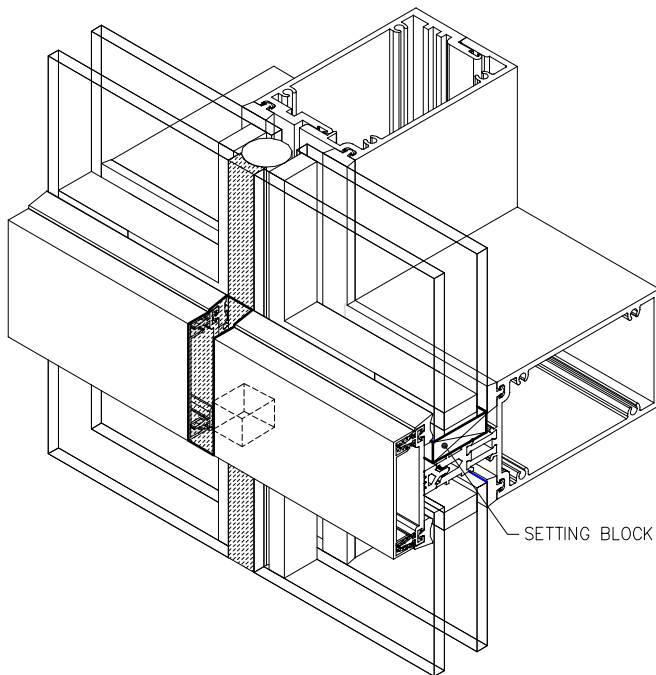
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SUBJECT

**HP-Wall – Exterior Glazed  
Setting Blocks & Chair**DRAWN BY: RKB  
ISSUE DATE: 4/2/12

SCALE: Full

REVISION By :  
REVISION DATE:

Setting blocks are used to locate and support glass or other glazing material. Setting blocks are typically made of silicone and vary in thickness, width and length. See GLZ-29 for detailed information on setting blocks.

Installation of setting blocks on HP-Wall varies depending on glazing make-up. Setting blocks at Insulated glass units ( $1 \frac{5}{16}$ " ) can set directly on horizontal frame stem. Setting blocks at triple insulated units ( $1 \frac{3}{4}$ " ) must be set on a setting chair.

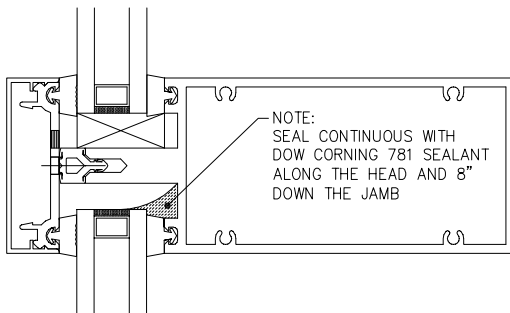
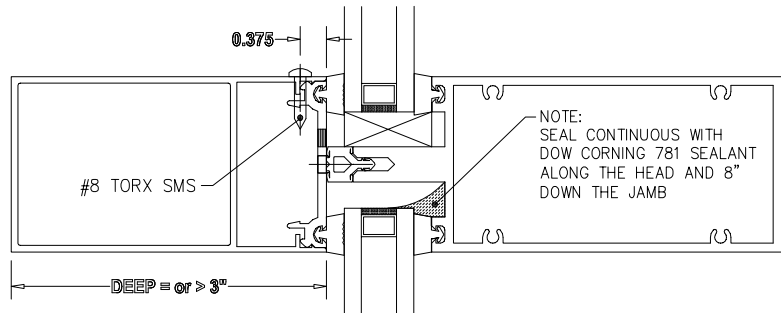
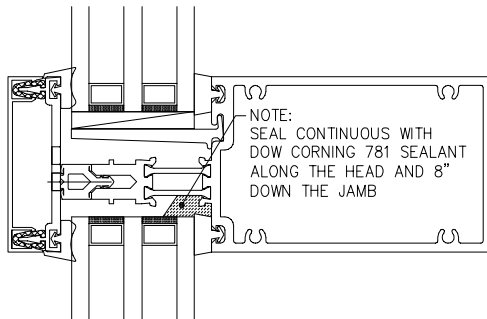
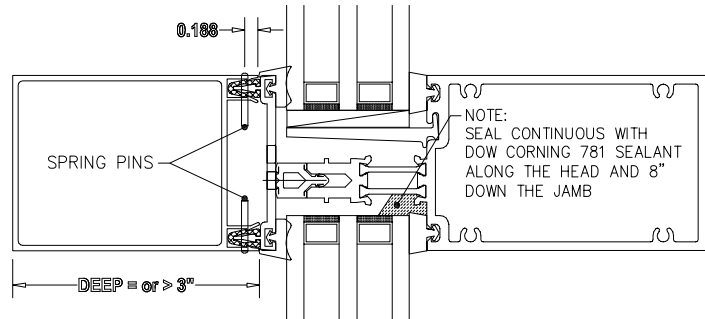
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SUBJECT

**Superwall & HP-Wall  
Cover Attachment & Safety Seal**DRAWN BY: RKB  
ISSUE DATE: 4/2/12

SCALE: Full

REVISION By :  
REVISION DATE:**Superwall Shallow Depth Cover  
Superwall Intermediate Depth Cover****Superwall Deep Cover****HP-Wall Shallow Depth Cover  
HP-Wall Intermediate Depth Cover****HP-Wall Deep Cover**

- 1) All Superwall deep covers need to be secured to the pressure plate with (1) #8 waxed sheet metal screw (SMS).
- 2) All HP-Wall deep covers need to be secured to the pressure plate with a spring pin.
- 3) Deep and Intermediate covers have disengagement vulnerabilities. Note: Covers are most vulnerable on projects where swing stages are used and most often disengagements occur when stage is moving upward.
- 4) On projects with vertical covers, remember to consider ways to counteract the effects of covers sliding down. Possible preventative measures include:
  - a) Silicone Covers in place.
  - b) Locate pins or screws, on vertical covers, under horizontal covers.
- 5) HP-Wall thermal clips should be placed in standard locations on all cover pieces. Clips should be located at 2" from both ends and then 12" on center in between. These clips should be used on both dart locations and should remain aligned across from one another.
  - a) If reglazing, thermal clips should be replaced and relocated before reapplying the cover. Re-use of original clips is not recommended. Replacing and Moving the clips ensures a robust application.
- 6) When using deep covers at locations with thermal clips, the following adjustments must be made to ensure safe installation.
  - a) Fill cover receiver cavities with silicone for 8" to 10", between PVC clips, at center of length prior to snapping cover.
  - b) Always locate spring pin at thermal clip location.
- 7) Glass Safety Seal; seal glass and frame continuous with Dow Corning 781 sealant along the head and 8" down the jamb. Tool sealant after installation to optimize performance.

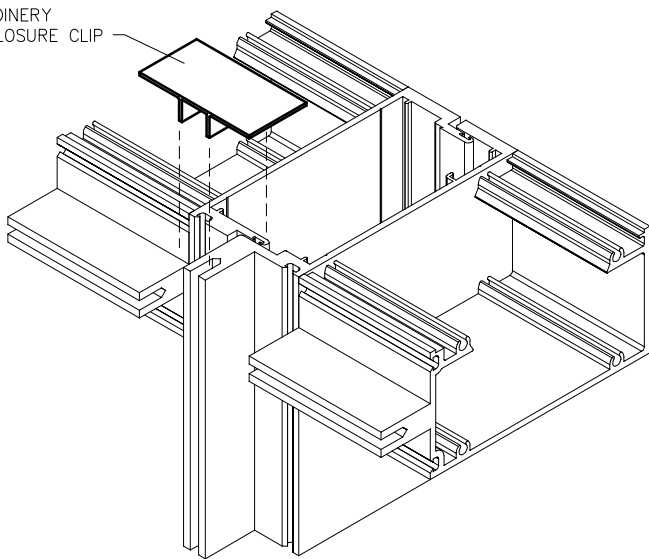
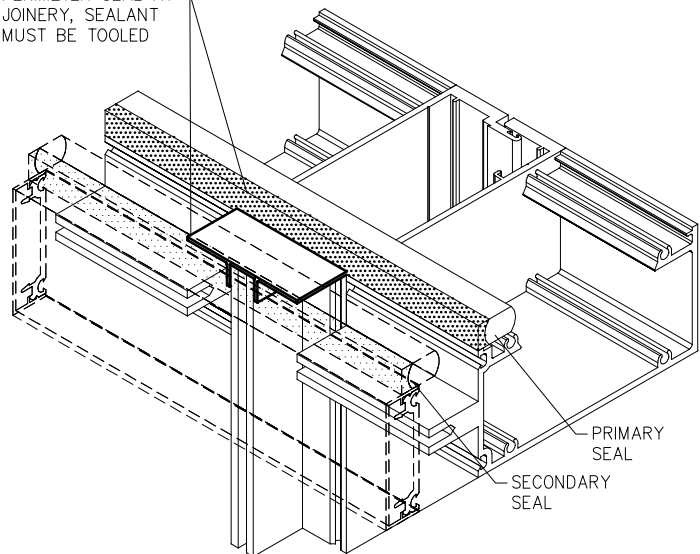
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SUBJECT

**Perimeter Secondary Seal  
Closure Clip**DRAWN BY: RKB  
ISSUE DATE: 6/21/12

SCALE: Full

REVISION By : RKB  
REVISION DATE: 7-5-12JOINERY  
CLOSURE CLIPPERIMETER SEAL AT  
JOINERY, SEALANT  
MUST BE TOOLED

- 1) Cut joinery closure clip long enough to span the glazing pocket.
- 2) Insert over the stem of the vertical mullion stack. Slide toward the interior until the clip is bearing against the mullion.
- 3) Using the two cloth alcohol wipe method, clean dirt and oil substrates before sealing. Mask joints where necessary before sealing for proper appearance. Provide appropriate sealant backers and tool all sealant.

The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. Wausau Window and Wall Systems recommends that the caulker consult their sealant manufacturer to insure proper compatibility. Wausau Window and Wall Systems is not responsible for perimeter sealant compatibility testing.

## GLAZING GUIDELINES

### References

In addition to the guidelines provided in this manual, Wausau Window & Wall Systems recommends that Installers and General Contractors familiarize themselves with the latest editions of the following industry guidelines:

- ASTM E1300-04 Standard Practice for Determining Load Resistance of Glass in Buildings
- AAMA Commercial Installation Manual – Chapter 24
- AAMA 800-05 Voluntary Spec. & Test Method for Sealants
- AAMA 850-91 Fenestration Sealants Guide Manual
- AAMA CW-13-85 Structural Sealant Glazing Systems
- AAMA GAG-1-97 Glass & Glazing
- AAMA CW-RS-1-04 The Rain Screen Principle
- AAMA GDSG-1-87 Glass Design for Sloped Glazing
- AAMA TIR-A7-83 Sloped Glazing Guidelines
- Wausau Technical Bulletin #22 – Rain Screen Design and Pressure Equalization
- Viracon Tech Tasks

## SEALANT GUIDLINES

### Compatibility Issues

Sealants may not adhere or maintain long-term adhesion to substrates if the surface is not prepared and cleaned properly before sealant application. Using proper materials and following prescribed surface preparation and cleaning procedures is vital for sealant adhesion. Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. In all cases it is important to confirm the acceptability of each sealant-substrate combination with a lab or site adhesion test prior to proceeding with project installation. Sealant manufacturers can provide lab and field adhesion testing information and suggestions.

### Surface Preparation

#### Non-Porous Materials (Glass, Metals, Plastics, Ceramics, etc.)

- Clean by using a two-cloth alcohol wipe method – wet one cloth with solvent and wipe the surface with it, then use the second cloth to wipe the wet solvent from the surface before it evaporates (allowing the solvent to dry on the surface without immediately wiping with a second cloth can negate the cleaning procedure because the contaminants may simply be re-deposited as the solvent dries). In all cases where used, solvents should be wiped dry with a clean, white cloth or other lint-free wiping materials.
- Isopropyl Alcohol (IPA) is a common-used solvent and has been proven useful for most non-porous substrates encountered in architectural construction applications. When handling solvents, refer to the manufacturers MSDS for information on handling, safety and personal protective equipment.
- Frost is difficult or nearly impossible to see on a joint substrate, and is likely to develop on substrates when temperatures drop near the freezing point. Since frost and moisture will interfere with proper sealant adhesion, it is important to confirm that substrates are dry prior to application of the sealant.

### Joint Movement

- All moving joints should be designed so as not to allow three-sided adhesion of the sealant to occur. Three-sided adhesion hinders the ability of the sealant to extend and compress freely as desired and can lead to early joint failure.

## PART# 146243

Revised (6-15-12) RKB

### Joint Width

- The recommended sealant profile is an hourglass shape with the depth of the sealant over the crown of the backer to be no thinner than  $\frac{1}{4}$ " and no thicker than  $\frac{1}{2}$ "
- A minimum of  $\frac{1}{4}$ " of adhesive bonding contact must be made to all surfaces to which the sealant is intended to adhere.

### Joint Backer Materials

Backer materials, typically backer rod, provide the following benefits to aid in the correct application of sealants.

- Control and provide the desired sealant depth.
- Create a formed joint cavity that allows for the desired sealant shape.
- Provide a firm backup which helps attain full wetting of the substrates when the sealant is tooled.
- Act as a bond breaker to eliminate adhesion on the backside of a joint (three-sided adhesion)

### Tooling

- Tool or strike the sealant with a concave tool applying light pressure to spread the material against the back-up material and the joint surfaces to ensure a void-free application.
- On sill applications, tool the sealant to shed water and to eliminate ponding.
- Tooling agents such as water, soap, or detergent solutions are not recommended.

### Masking

Masking tape is recommended where appropriate to ensure a neat job and to protect adjoining surface from over-application of sealant. Masking tape should be removed immediately after tooling the sealant and before the sealant begins to skin over (tooling time).

## GLAZING IDENTIFICATION

Glass by Wausau Window and Wall Systems must include the glass specification. Glass by others only needs to identify the overall unit thickness, weight and unit type.

The glazing identification symbol is shown on each lite.

- The "Glazing Method" is shown as the upper value.
  - See the Glazing Details for an accurate drawing and breakdown of the Glazing Method.
  - The glazing method is identified alphabetically.
- The "Glazing Type" is shown as the lower value.
  - See the Glazing Details for an accurate description of the glass unit.
  - The glazing type is required by purchasing to identify the different make-up on each project.
  - The glazing type is identified numerically. If the glazing type is panel or stone, the number typically will have an alphabetical prefix ("P" for Panel or "S" for Stone).



GLASS TYPE (1)  
1" INSULATED VISION GLASS MANUFACTURED BY VIRACON CONSISTING OF:  
1/4" CLEAR ANNEALED VE1-2M (#2 SURFACE)  
1/2" AIRSPACE WITH ARGON GAS FILL AND STAINLESS STEEL SPACER  
1/4" CLEAR ANNEALED



PANEL TYPE (P1)  
1" INSULATED BREAK METAL PANEL MANUFACTURED BY WAUSAU CONSISTING OF:  
1/8" BREAK METAL AND END CAPS  
1" CW90 THERMAFIBER INSULATION BACKING





## GLASS SAFETY

**The Golden Rule of Glass Safety: Treat every piece of glass as if it were about to break. (Treat glass like a loaded gun)**

The handling of glass, Lexan or other glazing infill requires special knowledge. It is important to understand safe handling procedures and how the material will be installed.

**Moving glass requires careful attention to safety issues. Glass can be dangerous in two ways:**

- The edge of glass is sharp. It is important to use caution whether handling a cut-glass surface, broken glass or coming in contact with breaking glass as it falls.
- Glass is heavy – A typical ¼” piece of glass weighs 3.3 pounds per square foot.

**Glass Damage:**

- Glass is most fragile near the edges. Glass damage usually occurs when the edge or corner comes in contact with hard surfaces
- When struck on the edge glass will chip or crack. If the impact is significant, it may crack. In extreme cases, glass will break into pieces and fall.

**Types of Breakage:**

- If glass is struck or flexed hard enough, it will break into smaller pieces. The size of these pieces often depends on glass type. For example:
  - Annealed and Heat Strengthened Glass – Breakage results in long cracks, large pieces and numerous chunks of irregular shapes. Broken glass can be very dangerous.
  - Tempered Glass – Breakage results in small cube like pieces. Although not as dangerous as broken annealed glass; each piece is still very sharp.

**Safety Tips**

**Wear personal protection equipment at all times:**

- Always wear safety glasses.
- Always wear Kevlar gloves with wrist guards when handling glass.

**Stay out from underneath glass at all times:**

- Never work under a window when setting glass.
- Never carry glass over your head.
- Never lift glass over or behind another person. Make sure everyone is ready and watching in case of a sudden fall or breakage.

**Never set glass on concrete, metal or other hard surfaces.**

**Leave yourself an out:**

- Never get trapped by falling glass in a confined space. If possible, lift, move and turn glass in a large unobstructed area.
- Always ask, “If glass breaks or falls; how will I escape?”

**Skids, crates and other glass storage containers:**

- Keep glass secured with straps, wrap or braces when not in use.
- Protect exposed edges – turn away from high traffic areas.
- Mark protruding edges with high visibility materials.
- Avoid placing protruding glass in confined areas.

**Keep work areas clean:**

- Always eliminate trip hazards
- Clutter makes chaos – chaos causes accidents.
- Clean up broken glass immediately – broken glass is hazardous until it is disposed.

## GLASS INSPECTION AND CLEANING

### Inspection:

- Make sure glass is secure on skid or work horses.
- Confirm glass size is correct.
- Confirm glass make-up is correct.
- Confirm orientation of interior and exterior lites.
- Confirm orientation of capillary tubes.
  - Tubes must be located at the head or top of jambs.
- Visually inspect glass edges and corners for chips, cracks or other impact defects.
- Visually inspect glass surface for scratches or other defects.
  - Clean the glass with isopropyl alcohol if dirt or other obstruction does not allow reasonable inspection.
- Visually inspect the space (and spacer) between glass for defects and/or other foreign material
- Visually inspect the perimeter sealant for gaps, inconsistent application or impact damage.

### Cleaning:

- Trim excess perimeter sealant from the glass edge.
  - Trim only excess that will make contact with setting blocks.
- Trim excess sealant from the glass surface.
  - Be careful not to damage the glass edge or corners.
- Glass surfaces that receive toe beads, cap seals or structural silicone must receive a two-cloth alcohol wipe method cleaning.
  - Spray clean cloth with isopropyl alcohol – do not spray the glass surface.
  - Immediately wipe the surface (aggressively) with wet cloth.
  - Immediately dry with a clean cloth.
  - Do not use compressed air.
  - Do not allow the isopropyl alcohol to pool and/or evaporate from the surface.

## FRAME & SASH INSPECTION, CLEANING AND PREPARATION

### Pre-Glaze Inspection of Frames & Sash:

- Glazing finalizes a series of manufacturing steps. In many cases, the glazing process will conceal manufacturing defects that are critical to quality. Examples of defects include poor part fit and flaws in sealant or sealant application. Defects in these areas can cause customer dissatisfaction and significant call back cost. Pre-glazing inspection is the Glazers last chance for quality verification.

### Cleaning and Preparation:

- Glazing surfaces must be free of dirt, oil, existing glazing materials or other contaminants. Glazing tape and sealants will not adhere to contaminated surfaces. Poor adhesion will result in glazing failure, customer dissatisfaction and significant call back costs. Therefore, the cleaning of new or existing glazing surfaces is a critical step to ensure the quality of the glazing.

### Inspection:

- Perform a visual inspection of frame or sash sealant at each corner and inside open lites prior to glazing.
  - Look for missed seals, gaps in the sealant, or defects in the surface of the sealant.
  - Are all the joints sealed?
  - Was the correct sealant used?
  - Was the sealant applied properly?
- Pay special attention to hidden or shadowed areas. Use a flashlight if direct light is required.
- This inspection is the last chance to detect joinery sealing issues prior to glazing.

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### **Cleaning:**

- Spray isopropyl alcohol onto clean cloth.
- Wipe glazing area until clean (Use two-cloth alcohol wipe method)
- Surface must be clean of oil and other residue.
- Repeat steps until glazing area is clean.
- Dispose of contaminated cloth immediately.
- After final wipe; immediately dry with a clean cloth.
- Do not use compressed air.
- Do not allow the isopropyl alcohol to pool and/or evaporate from the surface.

## **PRIMER USE AND APPLICATION**

### **Primer:**

- Primer is applied prior to application of glazing tape, gaskets or spacers. It is used whenever structural glazing is required and is dependent on the finish and adhesion test results. The Field Glazing Contractor is responsible for adhesion testing by the sealant manufacturer.
- Different primer solutions are used depending on the type of structural silicone adhesive being used. Product finish is also a consideration.
- To determine the correct primer solution, see reference below:
  - If using Dow Corning 795 one part silicone:
    - Anodize Finish: Use Dow 1200 Primer
    - Paint Finish: Use Dow Primer "C"
  - If using Dow Corning 983 two part silicone:
    - Anodize Finish: Use Dow 1200 Primer
    - Paint Finish: Use Dow Primer "C"
  - If using GE Ultra-glaze SSG 4400 two part silicone:
    - Anodize Finish: Use GE SS 4004 Primer
    - Paint Finish: Use GE SS 4179 Primer

### **Application:**

- Check that surfaces have been cleaned using the two cloth alcohol wipe method.
- Dispense primer from flip-nozzle bottle onto clean blue cloth towel.
- **Safety** - Always wear rubber gloves while priming.
- Wipe a thin uniform film of primer across surface to be primed.
  - Do not over-prime. (More is not better)
  - Use additional cloth wipes on large lites to avoid soiling.
- Allow primer to dry a minimum of ten minutes prior to application of structural silicone sealant.
  - Special Note: Cleaning and Primer must be re-applied if glazing does not take place within four hours.

## CAPTURED GLAZING SYSTEMS

“Glazing System” describes the method and components used to glaze a particular opening. The system is comprised of a cavity where glass or other glazing infill is installed, a glazing stop, bed of pliable material and an assortment of components used to compress glazing material into the opening.

How it works – Glass or other infill is installed in an opening. It is then compressed in a sandwich of metal, gasket and sealant. These parts work in combination to hold and seal glass or other glazing material.

### Component of a Glazing System

#### Glazing Stop:

- Glazing systems require a rigid surface or “stop” to contain the glass or other glazing infill. This surface provides a starting point for the glazing systems; all other glazing components are assembled against it. There are two types of glazing beads:
  - Integrated – A solid surface or fin that extends directly from the frame or sash. Also known as a “glazing leg”.
  - Applied – A separate extrusion that is applied to the frame or sash extrusion.

#### Glazing Bead:

- A removable secondary surface that acts as a glazing stop, but is located on the opposite side of the glazing stop and infill.
  - Glazing Bead acts as an anchor as the glazing system is compressed. It is physically anchored to the surround framework. After attachment, a lineal wedge is forced into a gap between the glazing bead and the infill surface. The wedge pushes the infill against the glazing stop, which then causes the pliable glazing surface (tape or sealant) to compress. This creates the seal in the glazing system.

#### Glazing Bed or Bedding Material:

- Before glass can be installed against the glazing stop, a pliable non-abrasive layer must be installed. This is done for two reasons:
  - To protect the glass or other glazing material from damage by providing a soft non-abrasive surface.
  - To provide a consistent layer of pliable material that will create a seal when glazing materials are compressed against it.
  - The required material(s) is noted on the glazing details, it can include; Gasket, Spacer Tape, Butyl Tape, Foam Tape, etc...

#### Glazing Type, Application and Examples:

- Inside Wet Glazing
  - Typical Application – Low and high-rise commercial buildings using glazing infill set from the building interior.
    - Pre-shimmed butyl tape
    - Molded or vulcanized corner gaskets
    - Lineal gaskets
- Outside Wet Glazing
  - Typical Application – Low and high-rise commercial buildings using non-transparent glazing infill set from the building exterior.
    - Pre-shimmed butyl tape
    - Molded or vulcanized corner gaskets
    - Lineal gaskets

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- Structural Glazing
  - Typical Application – High performance window and wall systems
    - SGT922 Foam spacer tape (Visuline & Zero Sightline)
    - Silicone gasket material
- Dry or Marine Glazing
  - Typical Application – Low performance window and wall systems
    - Molded or vulcanized corner gaskets
    - Lineal gaskets
    - SGT922 Foam spacer tape

### Glazing Sealants:

- Silicone sealant is widely used in glazing systems. Sealants are used to apply material as it is installed. The sealants used for glazing come in two varieties:
  - Silicone – A one part silicone product typically applied from tubes. This sealant is used in most of Wausau's standard non-structural applications.
  - Structural Silicone – A structural product comprised of one or two parts that are mixed just prior to application. This product is used when product specifications require a structural component to its glazing system.
    - One part silicone is for field applications
    - Two part silicone is factory applied using application equipment.

### Setting Blocks:

- The glazing opening is designed to include a gap at all sides of the glazing infill. This enables framework to move or expand with natural climate conditions and will protect glass from breakage.
- Glass cannot make contact with metal inside the glazing opening. Contact may cause breakage or failure of the insulated glass units. To protect glazing materials a silicone setting block is used to support the weight of the glass in the opening. Setting blocks provide a soft support for the glass to rest on without allowing it to contact the metal frame.
  - Silicone W blocks are inserted into the jamb glazing pocket of captured curtainwall.

### Glazing Wedge:

- A dense pliable gasket configured in a triangular wedge shape. Glazing wedge is forced into the gap between the glazing bead and the infill.
- Insertion of the glazing wedge can require considerable force. This force compresses the infill against the glazing bead to form an airtight and watertight seal.

### Glazing Orientation:

- Glazing materials can be installed from the interior or exterior of the building. The direction of installation depends on the material being glazed and the accessibility of the glazing area.
- The direction of glazing is critical to knowing what glazing components are required. It also determines how the glazing process is to be performed and where the primary water seal is located.
- For glazers; knowledge of glazing orientation is extremely important. Always check glazing details before attempting to perform glazing operations.

### Interior Glazing:

- This method requires glass to be installed from the inside of the window. It is most common when conditions will allow glass replacement from inside the building. Interior glazing typically uses an integrated exterior glazing stop with removable glazing bead at the interior. The exterior receives a silicone cap which acts as the primary seal.

### Exterior Glazing:

- If glass is installed from the outside of the window, it is called "exterior glazed". This method is used when conditions inside the building make it impractical to glaze from the inside. Examples of obstructions include columns, floor slabs or wall placement.

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- If windows are exterior glazed, glass replacement must occur from outside the building. In general terms, exterior glazed systems are a reversed variation of an interior glazed system. However, the reversed integral glazing stop (now located at the interior of the window) becomes a non-weathered secondary seal. Therefore, the glazing bead is at the exterior and is exposed to weather. Special provisions for sealing and water control are required.

### GLAZING TAPE

Application methods for most types of glazing tape are the same. They are applied directly to the surface of the glazing stop. Different glazing methods require different locations for the placement of glazing tape.

#### To Apply Tape:

- Hold the roll in one hand. Use the other hand to “tack” the end of the tape in the starting position.
  - Note: Specific tape location is determined by the glazing method. See tape location reference below.
- Hold the starting end of tape on the glazing surface with one hand while gently pulling tape in the direction of the area to be taped.
  - Do not stretch the tape.
  - Do not remove tape backer until ready to apply sealant and set glass.
- Pull tape tight (roll hand) while intermittently pressing tape to surface (free hand) along the length of the glazing surface.
- Cut tape (square) to length at end of lineal glazing surface.
  - Carefully square cut with no more than a 1/16” gap at each corner.
  - Never overlap tape at the corners.

#### Tape Location on Glazing Surface:

- Inside Glazed – Butyl Tape
  - 1/8” back from inside edge of glazing leg.
    - Allows silicone cap to penetrate between glass and glazing surface.
- Outside Glazed – Butyl Tape
  - Flush with inside edge of glazing leg.
    - Helps silicone toe bead to fill gap between glass and glazing surface.
- Foam Tape
  - Flush with inside edge of glazing surface.
    - Tape area is exposed. Provides good visual appearance.

## GASKETS AND SPACERS\*

Gaskets and spacer tape are a variation of bedding material. They are typically used in dry glazing and structural applications.

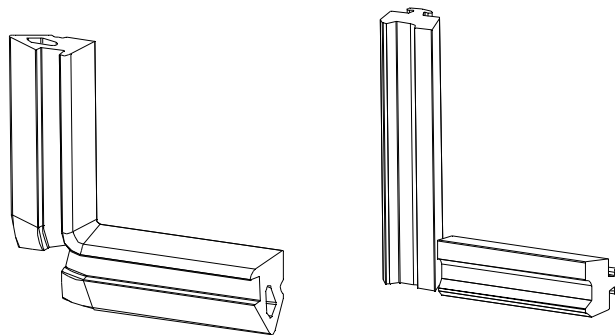
Dry glazing systems occur in both window and wall products. In some cases the operating lites of a window system will be structurally glazed, while the fixed lites will be dry glazed. For this reason it is extremely important to always review the glazing requirement for each lite in the product being glazed.

### Molded Gaskets:

- Molded gaskets (Vulcanized) are manufactured to fit the dimension (DLO) of a specific lite. This is accomplished by the manufacturer who cuts individual pieces to length and molds the corners to create a single rectangular gasket.
  - Silicone gaskets should be used in any application where contact will occur with structural silicone sealant.
- General installation involves aligning gasket corners with those found in the window opening. The gasket is then set into a race in the glazing stop. The gasket is typically set in silicone sealant at each corner.

### Lineal Gaskets & Wedge:

- Lineal gaskets and wedge use the same material as those that are molded. The difference is they are not made to order based on the size of individual window openings. The lineal material is simply dispensed from large coils.
  - Silicone gaskets should be used in any application where contact will occur with structural silicone sealant.
- Installation of wedge can involve nipping to allow it to wrap at each corner. The ends are further adjusted to meet at an upper corner. All corners are set in sealant.
- Installation of gaskets will involve using a butt joint at the corner. The butt joint must be sealed with a high modulus silicone prior to installation of the glazing infill.



### Spacer Tape:

- Spacer tape is similar to gasket material. The difference is that the tape is Butyl.
  - Butyl spacer tape can have a polyurethane spacer rod in the center. The rod is used to keep a consistent gap between the glazing leg and the glass; maintaining a long term compression.
- Spacer tape has adhesive backing. It is applied in lineal pieces along the length of each glazing stop. The corners are cut neatly to provide a good visual appearance.

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### Application:

- Molded Gaskets
  - Verify the size of the molded gasket is relative to the daylight opening.
    - Gasket should fit with extra material in both directions from corner to accommodate shrinkage.
  - Apply silicone sealant to the gasket race at all corners of the daylight opening.
    - Silicone should extend approximately 2" in each direction from the corner.
  - Insert the gasket into the race at the corners first. Then along the lineal areas.
    - Make sure the gasket is not twisted.
    - Crowd the excess gasket material evenly toward the corners.
  - Remove any excess silicone from the exposed areas.
- Lineal Gaskets
  - Insert the gasket from the first corner to the second corner.
    - Allow approximately 1" extra material for crowding to avoid shrinkage.
  - Square cut the gaskets to create a butt joint at the corners.
  - Seal the gasket race at each corner.
    - Silicone should extend approximately 2" in each direction from the corner.
  - Insert the gasket at the corner and along the length of the glazing stop.
  - Repeat each previous step for the remaining corners and sides.
  - Butt the gasket ends at an upper corner to provide a good visual appearance.
    - Seal the butt joint with silicone sealant.
  - Remove any excess silicone from the exposed areas.

Note: Do not stretch the gasket.

- Spacer Tape
  - Pull spacer tape from the roll.
  - Tack the end of the tape at the corner; apply along the length of the glazing bead.
    - Keep the spacer tape aligned with the glazing leg, offset if required.
  - Square cut the spacer tape at the corners.
    - Do not overlap the spacer tape at the corners.
  - Repeat each previous step for the remaining corners and sides.

Note: Do not splice the spacer tape in exposed areas.

\* Information on Gaskets and Spacer Tape referenced from Tremco® website.

## GLAZING SEALANT

There are many steps in the glazing process. One of the most important is the application of glazing sealant.

Glazing sealant serves a number of purposes, depending on the building application and project specifications. Sealant provides an air and water seal and can also act as a structural component to adhere glazing materials to a structure.

### Continuous & Corner Toe Beads:

- Glazing sealant is applied before the glass is installed.
- Corner toe beads extend 6 – 8 inches in both directions starting at each corner.
- Continuous toe beads are installed around the entire perimeter of the sash or frame glazing pocket.
  - Silicone sealant must be applied as least twice as thick as the glazing tape. This is to ensure the glazing infill will make contact when it is set.
  - Silicone sealant must span from the surface of the glass to the aluminum framework.
  - Silicone sealant must make contact and overlap any previously applied frame joinery seals.



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### Continuous Heal Bead:

- Glazing sealant applied after the glass is installed.
- A continuous bead of sealant applied to fill the gap between the edge of glass and framework.
  - Silicone sealant must span from the surface of the glass to the aluminum framework.
  - Silicone sealant must make contact and overlap any previously applied frame joinery seals.

Glazing applications incorporating laminated glass need to be given special attention when the edge of the laminated unit comes in contact with silicone sealant. The silicone will migrate into the PVB interlayer causing a discoloration. The discoloration extends approximately 3/16" in from the edge of the lite. This discoloration will be acceptable provided the edges of the unit are captivated by 1/2" as in a conventional glazing system.

On applications where laminated glass is used with structural glazing, it must be disclosed to the customer that visible discoloration will be likely. Since the entire surface of the glass is exposed on a structurally glazed system, there is no way of concealing the discoloration.

## SETTING BLOCKS

Setting blocks are used to locate and support glass or other glazing material. Setting Blocks are typically made of silicone and vary in thickness, width and length.

Setting blocks are installed just prior to the installation of glass or other glazing infill. They are always located at the sill and possibly at the jambs and head of the glass in the following instances:

- To keep the glazing infill from coming into direct contact with the metal framework.
- To space the glazing infill material equally within the glazing cavity.
- To keep the glazing infill from shifting after glazing.
- To equally support the weight of the glass.
- To hold door leaf's and casement sash square.

### Installation:

- Setting blocks are typically located at quarter points. Other locations are optional and should be approved by a structural engineer and the glass manufacturer.
  - Quarter points = Lineal length of the DLO divided by 4
    - Actual location tolerance is  $\pm \frac{3}{4}$ "
    - Always check the elevation and detail drawings for alternate locations.
  - Install the setting block by pressing it into the perimeter glazing sealant.
    - Press the setting block down, then pull back from the perimeter sealant.
    - The backward motion will push sealant back against the primary glazing surface. This will ensure the silicone will still make contact with the glass.
    - Locate the setting block so both lites of an insulated glass unit rest on the setting block.
    - Do not place the setting block in front of weep holes.
    - Do not cover glazing bead insertion grooves or hooks.

Windows shipped on the jamb or with seismic loading require jamb blocking.

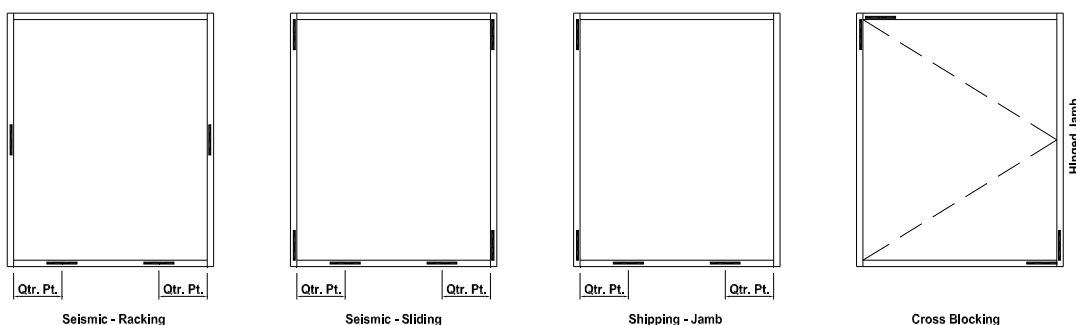
- Jamb Block Location:
  - Always check the project elevation drawings and glazing details for blocking instructions.
- Standard Jamb Block Location:
  - Blocks are located on the left jamb for shipping (viewed from the window exterior).
  - Exception – If the product has jamb anchors or other UIF's that protrude beyond the window dimension, blocks are applied on the right jamb.

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Casement or Terrace Door sash require cross blocking.

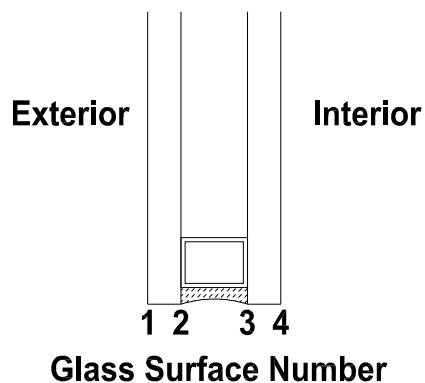
- Additional steps required when setting glass.
  - Insert setting block at lower jamb on hinged side.
  - Insert setting block at sill near hinged side.
  - Insert setting block at the top of the jamb on non-hinged (locking) side.
  - Set glazing infill in glazing cavity.
  - Shift the glazing infill tight against the jamb block on the hinged side.
  - Insert the setting blocks at the head / jamb corner of the non-hinged jamb.
  - Locate the setting blocks at 1/8 points or 2" from the corner (whichever is greater).



## GLASS SURFACES AND GLASS COATING TESTS

### Glass Surface Identification:

- Glass coatings such as Low-E are only applied on the glass surface. To perform properly the coated surface must be located correctly during glazing.
- During glazing it is important to verify coatings have been applied. Test equipment is used to verify and to locate the coated surface.



### Low-E Testing:

- Proper use of Low-E detection equipment is critical to glass installation. For proper use consult your detectors product manual.

## INSTALLATION OF GLAZING INFILL

Installation of glass or glazing infill conceals critical frame seals. Issues with sealant, setting blocks or weeps will be covered after setting of glass or glazing infill. Removal of defective glazing material is difficult after glass or infill has been set. Make every effort to discover defects before setting the components.

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### Glazing:

- Determine glazing infill for lite being glazed.
- Confirm the replacement infill thickness is the same as the original glazing infill.
  - If the replacement infill thickness varies from the original, the glazing tape and or glazing wedge may need to be replaced to achieve proper compression.
- Set and center the glazing infill into glazing cavity.
  - Make sure “Glaze This Side In” surfaces are correct.
  - Locate the glass lites with tempered or heat strengthened logo’s. Make sure the surfaces are correct.
  - Confirm orientation of the capillary tubes is correct. Check with glass unit manufacturer for specific directions.
    - Tube must be located at the head or top of the jamb. It is important to make sure the capillary tubes **are not** crimped in the shop or field.
- Determine setting block locations.
  - Will the frame be shipped on its jamb?
    - Jamb blocking will be required.
  - Are Seismic jamb blocks required?
    - Jamb blocking will be required.
  - Is the sash for a casement window or terrace door?
    - Cross blocking will be required.

## INSTALLATION OF GLAZING WEDGE

Glazing wedge is the final component installed prior to applying the exterior glazing cap seal if required. With tape, sealant, glass and glazing bead in place, the wedge is forced into the gap between the glazing infill and installed glazing bead.

The pressure caused by forcing the triangular wedge into position causes the glazing tape or gasket to compress. This compression locks all components in place and provides the glazing seal. The frame or sash must be checked for squareness after the wedge is forced into position.

### Wedge Preparation:

- Make sure wedge end is square cut.
- Ensure wedge orientation is correct.
- Insert the squared end into the wedge gap at the top corner of the opening.
- Extend the lineal wedge across the length of the opening.
  - Add 1” to 2” to the length and nip the outside edge of the wedge material to allow for the bend in the first corner.
  - Do not stretch tight. The added length will help avoid shrinkage from stretching.
  - Make sure the wedge is not twisted.
- Repeat the previous steps around the entire opening.

### Wedge Insertion:

- Spray the first lineal of wedge with glass cleaner, soapy water or alcohol.
  - Wet solution acts as installation lubricant.
    - Glass cleaner, soapy water or alcohol is generally used if non-structural glazed.
    - Alcohol is used if structural glazed.

**Note:** do not use glass cleaner or soapy water when structural glazing or with headless wedge. Residue from glass cleaner or soap will interfere with silicone sealant adhesion.

- Starting at the top-center of the opening, continuously pound the wedge into gap toward the first corner.
  - First push the extra wedge toward the corner, then spread the remaining back toward the center.

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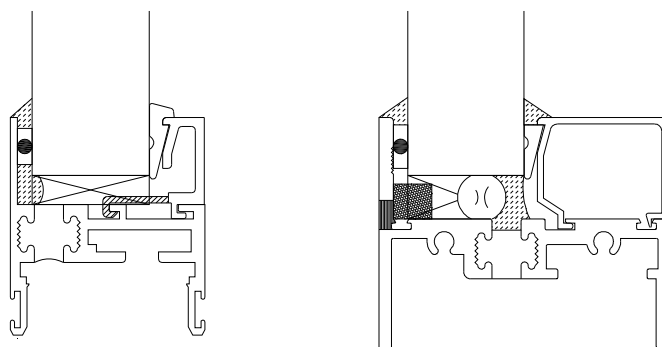
- Once inserted, the first corner should be square and free of gaps.
- Return to center and pound the wedge toward the second corner.
- Repeat the previous steps around the entire opening.

### Molded Corner Wedge:

- This material is the same as the lineal material noted above.
- The length and corners are already cut to fit the DLO.
- Installation of the material differs only because there are no loose ends at the corners.
- In some dry glazed systems, molded corner wedge must be set in sealant.
  - Refer to the glazing details

### Headless Wedge:

- This material is the same as the lineal material noted above.
- Headless wedge is driven into the glazing system until it is recessed 1/16" from the top of the glazing bead.
- Exterior glazing requires a silicone cap to be applied over the wedge area.



**Molded, Lineal and Headless Wedge**

## APPLICATION OF STRUCTURAL SILICONE

Structural Glazing is incorporated into many of our product vents, fixed window walls and unitized curtainwall. Structural glazing can be one, two, three or four sided depending on the system design. Structural glazing requires a unique process after the infill is installed.

Examples of products that use true structurally glazed systems are listed below. These systems rely on attachment of glass to aluminum with only structural silicone sealant adhesive:

- Zero Site Line Vents
- 3250 SG
- Carrier Frames
- Unitized Curtainwall

Glass in the examples above only has structural silicone bonding the glass to the framework. Other products have structural sealant plus support from framing when the vents are closed and locked. Examples include Epic, Heritage and Visuline vents.

Like any of our products, procedures to control quality are important. However structurally glazed systems require additional steps in manufacturing, testing and documentation. See examples below:

- All glazing details are reviewed by the silicone sealant and glass manufacturer for compliance, comments and recommendations.
  - For industry standards
  - For compliance with GANA/AAMA guidelines.

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- Painted or anodized finishes are tested for adhesion and compatibility by the sealant manufacturer.
- Daily testing is common on structurally glazed wall systems.
  - Adhesion testing (2 part silicone)
  - Durometer (hardness) testing

### Application:

- Tape and mask exposed surfaces when required.
- Carefully fill space between framework and infill with medium to high modulus structural silicone.
  - Force sealant deep into the cavity
  - Fill the cavity at an angle to displace any air.
  - Avoid air pockets
    - Balance steady flow of sealant with a continuous and consistent forward motion.
    - Avoid start and stop action.
    - Use special care when filling near setting blocks and corners.
- Tool silicone sealant adhesive.
  - Warning: Tooling must occur immediately after application of silicone adhesive sealant.
    - Do not allow the sealant surface to cure (skin).
  - The goal of tooling is to ensure sealant makes wet contact with all cavity surfaces.
    - Press sealant into cavity recesses.
      - Watch to verify sealant makes contact at the bottom and both sides of the cavity.
      - Work sealant into corners of framework and at setting blocks.
    - The cavity must be full.
      - If sealant drops or presses out at sides, apply additional silicone where required.
      - Re-tool if required.
- Remove tape and other masking materials.
  - Clean the surface of the frame, glass or glazing infill as required.
- Insert glazing bead, trim or other structural covers as required.
- Are capillary tubes present?
  - If yes, finish the installation as instructed by the glazing details.

Glazing applications incorporating laminated glass need to be given special attention when the edge of the laminated unit comes in contact with silicone sealant. The silicone will migrate into the PVB interlayer causing a discoloration. The discoloration extends approximately 3/16" in from the edge of the lite. On applications where laminated glass is used with structural glazing, it must be disclosed to the customer that visible discoloration will be likely. Since the entire surface of the glass is exposed on a structurally glazed system, there is no way of concealing the discoloration.

## GLAZING GLOSSARY

**Adhesive Failure** – Loss of sealant bond to the applied surface.

**Cohesive Failure** – Tearing of the sealant with no bond loss.

**Sealant Compatibility** – The ability of two glazing components to be in contact with each other and not cause any adverse effects.

**Dry Glazing** – Gasket glazed system for air and water resistance.

**Wet Glazing** – Butyl tape & silicone sealant cap seals for air and water resistance.

**Structural Glazing** – The method of attaching glass, panels or stone to aluminum window or wall systems; using silicone sealant adhesives.

**Durometer** – The measurement of the hardness of elastomeric glazing materials and sealants.

**EPDM** – Ethylene Propylene Diene Monomer, a synthetic rubber compound.

**Neoprene** – A synthetic rubber compound.

**SCR** – A silicone compatible rubber compound.

**Edge Blocks** – Blocking to support installed glass shipped on jambs.

**Anti Walk Blocks / W Spacers** – blocks used to maintain edge clearance of installed glass.

**Capillary Tubes** – A very small diameter tube placed into the insulated glass spacer to accommodate pressure differences that may occur between glass fabrication and project site.

**Toe Bead** – Sealant applied between glazing gasket or tape to framing at corners or continuously to seal joinery of components and installed prior to glass setting.

**Heal Bead** – Sealant supported by a backer rod and installed between the inboard edge of glass and framing. Usually installed continuously after glass setting to prevent air and water infiltration through a weep system.

**Cap Seals** – A continuous cap seal of exposed silicone sealant at the glass to frame perimeter.

**Weep Holes** – Drain holes or slots in sash or framing to control and drain the accumulation of condensation and water.

**Annealed Glass** – Float glass that is cooled in a controlled manner to eliminate residual stress. Annealed glass lites do not have etched logos.

**Heat Strengthened Glass** – Glass that is heat treated and is two time stronger than annealed glass of the same thickness. HS logos are etched onto the glass surface near the corner.

**Tempered Glass** – Glass that is heat treated and is four times stronger than annealed glass of the same thickness. FT logos are etched onto the glass surface near the corner.

**Spandrel Glass** – Non-vision glass that conceals building columns, floor slabs and walls.

**Tinted Glass** – Glass that is colored during the float process.

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**Laminated Glass** – Safety glass that holds together when shattered. In the event of breaking, it is held together by an interlayer of polyvinylbutyral (PVB) or similar material, between its two or more layers of glass.

**Low-emissivity (Low E)** – A thin metal or metal oxide coating on a glass surface that reflects heat back to its source.

**PIB (Polyisobutylene)** – The primary seal on a dual sealed insulated glass unit. The secondary seal can be silicone or polyurethane.

**Sealant Wet Out** – A term used in structural glazing applications. Sealant is pumped into a joint and then tooled to force the sealant to wet out onto the framing and glass surfaces to ensure maximum sealant bond.

**For additional information, see Wausau's Glazing Training Curriculum:**

- Section 99 – Glazing Glossary

## GLAZING WEIGHTS

The Glazing weights listed are for all Series. Weights as noted supplied by Viracon Technical Services.

Sheet Glass	Lbs. / Sq. Ft.
1/8" Monolithic	1.64
3/16" Monolithic	2.45
1/4" Monolithic	2.99
Obscure Glass	Lbs. / Sq. Ft.
3/16" Pattern #62	2.45
Insulated Glass	Lbs. / Sq. Ft.
1" I.G. (1/8"-1/8")	3.75
1" I.G. (3/16"-3/16")	5.30
1" I.G. (1/4"-1/4")	6.30
Laminated Glass	Lbs. / Sq. Ft.
Lami-.015" PVB Interlayer-Lami	2.93
Lami-.030" PVB Interlayer-Lami	3.01
Lami-.060" PVB Interlayer-Lami	3.18
1/8"-.015" PVB Interlayer-1/8"	3.33
1/8"-.030" PVB Interlayer-1/8"	3.42
1/8"-.060" PVB Interlayer-1/8"	3.58
1/8"-.090" PVB Interlayer-1/8"	3.75
3/16"-.030" PVB Interlayer-3/16"	5.04
3/16"-.060" PVB Interlayer-3/16"	5.21
3/16"-.090" PVB Interlayer-3/16"	5.38
1/4"-.030" PVB Interlayer-1/4"	6.67
1/4"-.060" PVB Interlayer-1/4"	6.83
5/16"-.030" PVB Interlayer-5/16"	8.29
3/8"-.030" PVB Interlayer-3/8"	9.92
Acrylics	Lbs. / Sq. Ft.
1/8" Monolithic	0.78
3/16" Monolithic	1.17
1/4" Monolithic	1.56

Warning: It is extremely important to identify the glass make-up when glazing hung windows. If the replacement glass is not identical to the original glass unit, the balances will not function properly and may cause damage to the window or bodily injury to the operator.

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## DISCLAIMERS

1. Field verification and/or field measurements will not be the responsibility of Wausau Window & Wall Systems unless specifically included in our quotation. The general contractor is responsible for verifying all dimensions. The G.C. is to take note of all dimensions as Wausau Window & Wall Systems assumes no responsibility beyond manufacturing in accordance to dimensions shown on the approved drawings and/or order entry documents. Make certain that the building construction which will receive your materials is in accordance with the contract documents. Returned approved submission prints and/or order entry documents will indicate to Wausau Window & Wall Systems that all dimensions have been verified and approved. These drawings embrace only the work in the Wausau Window & Wall Systems contract. Wausau Window & Wall Systems does not assume responsibility for measurements affecting other contractors work. Issuance of shop drawings for approval does not constitute acceptance of customer's order by Wausau Window & Wall Systems. The order entry documents may take precedence over shop drawings which in turn take precedence over other contract documents or product information and include specific details for the project. The Assembly and Installation manual are of general nature and cover most common conditions.
2. All "Please Verify" notes within the Wausau Window & Wall Systems submission drawings not responded to or answered, will be assumed as correct as shown. Any future problems due to the verifications not being completed will not be the responsibility of Wausau Window & Wall Systems.
3. The General Contractor shall provide Wausau Window & Wall Systems or the installing subcontractor with a building perimeter offset line on each floor, plumb with lines on the floors below, and located at a point from the edge of the floor slab as designated. The General Contractor shall also provide clearly scribed benchmarks on each floor on a column as designated. The General Contractor shall be responsible for the accuracy of the location of the perimeter offset lines and the elevations of the benchmarks.
4. Wausau Window & Wall Systems does not supply installation fasteners, unless previously arranged with the Sales/Estimating department. Masonry expansion plugs and screws occurring at the sill are to be set in sealant by the installer. The installer is to shim and securely anchor the window frames square and plumb. Dead load shims are required at the sill directly under the window jambs (typical). Glass and/or panel sizes are given (if required) in good faith and Wausau Window & Wall Systems cannot be held responsible for sizes of materials not provided.
5. Window units and systems must be stored in an area free from weather and construction hazards. Aluminum finish must be protected from staining of wet cardboard or paper and from the action of harsh alkalis and sand in concrete, stucco, mortar or plaster. The setting of the material prior to the setting of the other materials requires the G.C. to closely supervise other trades so as to protect marring or discoloration from any cause. All glass and aluminum must be protected during any and all welding operations.
6. The expansion joints and perimeter caulk joints of the window system being supplied by Wausau Window & Wall Systems are designed to accommodate a high performance sealant that is capable of +/- 50% movement. Please consult the sealant manufacturer for proper surface preparation and bond breakers. All sealant, backer rods, shims, insulation and blocking as required for installation and to all metal contacts are to be furnished and applied by the installer.
7. Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. Wausau Window & Wall Systems recommends that the caulker consult their sealant manufacturer to ensure proper compatibility. Wausau Window & Wall Systems is not responsible for perimeter sealant compatibility testing.
8. All trim will be furnished in stock lengths unless otherwise noted in our quotation. If shipped loose trim (i.e.: glazing beads, snap-on covers, and etc.) is "cut to length" by Wausau Window & Wall Systems and requires field fitting, the cost of such will not be borne by Wausau Window & Wall Systems.
9. The Installer will install shipped loose hardware. Shipped loose hardware will require field adjustments. Wausau Window & Wall Systems assumes no responsibility for hardware applied by the Installer. See the note below regarding shipped loose components.
10. Request for a revision after Wausau Window & Wall Systems has been released for fabrication will result in an engineering and handling charge plus the cost of the fabricated materials. This must be approved in writing prior to the revisions being made.
11. Upon delivery of Wausau Window & Wall Systems material to the project site, it is the responsibility of the customer to ensure that all shipping damages and/or material shortages are acknowledged and reported to Wausau Window & Wall Systems within (2) two weeks [(10) ten working days]. Damages or shortages reported after that time period may result in additional costs to the customer. Any common carrier materials received damaged should be reported to Wausau Window & Wall Systems and the shipping company immediately upon receipt.
12. Installer/Contractor accepts responsibility for the performance of all door/window/curtainwall systems if such is not installed per Wausau Window & Wall Systems drawings and specifications. Any and all cleaning of components is not by Wausau Window & Wall Systems. Final hardware adjustment is not the responsibility of Wausau Window and Wall Systems.

## PROPRIETARY NOTICE

This document and the contents herein are the sole property of Wausau Window & Wall Systems. Use of this document, contents, or design concepts for purposes other than estimating, drawing preparation, installation and/or manufacturing for Wausau Window & Wall Systems shall be cause for legal recourse by Wausau Window & Wall Systems.

## SHIPPED LOOSE COMPONENTS

As noted in Wausau Window & Wall Systems' proposal/quotation confirmation letter, window components that are "shipped loose" for field attachment. These typically include those items which: a) Could be damaged in normal shipment. b) Make the unit difficult to handle in the field. c) Are wasteful in utilization of truck space, or d) Require field adjustment or removal prior to final installation. Please inform the Wausau Window and Wall Systems Estimating Department **before quoting** if these standards need to be modified to fit the unique requirement of a specific project.