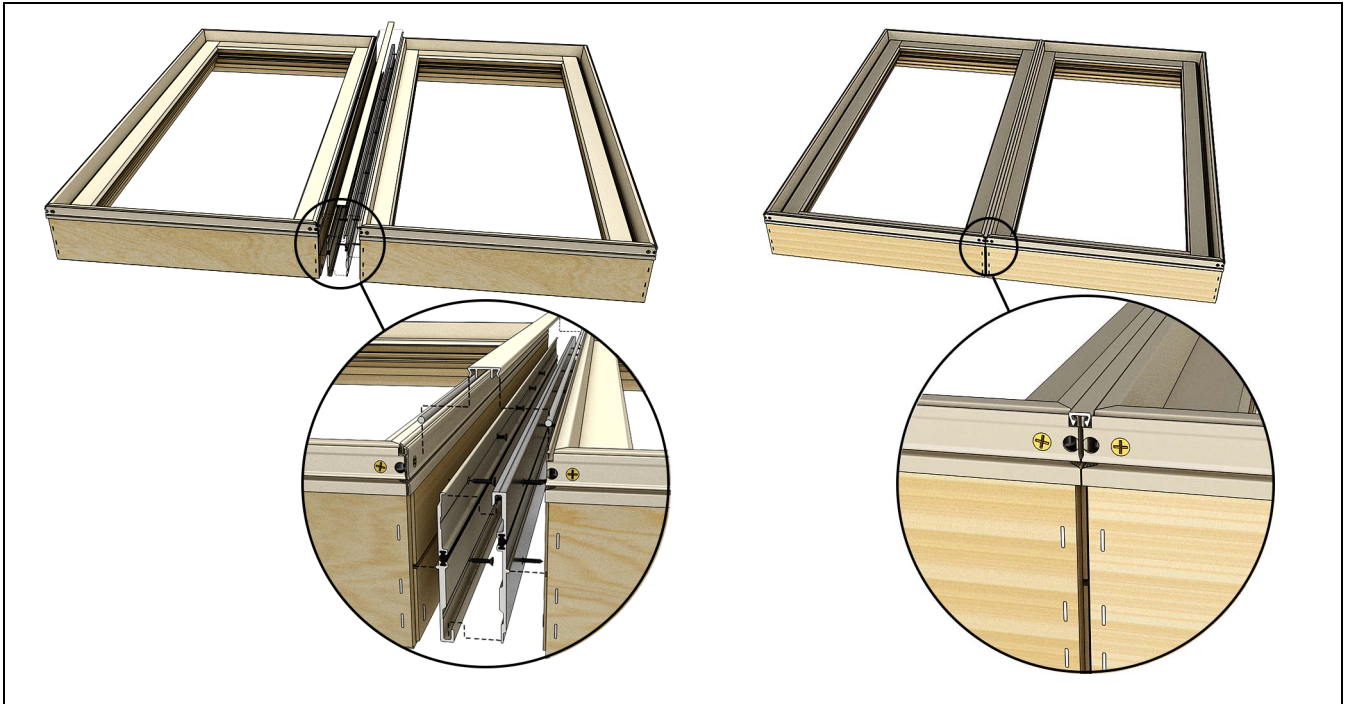


Marvin Window and Door Mulling

Field Applied Instructions



ABSTRACT: The following instructions are intended to instruct a qualified window and door expert on how to assemble window and doors in various mullion conditions including standard mulls, 3/8" mull reinforcement, space mulls, and LVL mulls. These instructions assume a high level of user competency and that they are confident using power and hand tools, modifying the frame of the window or door, and performing all the tasks within. Read these instructions thoroughly before beginning.

These instructions are used for the following products:

- Ultimate Casement family
- Ultimate Double Hung G2 family
- Ultimate Glider family
- Ultimate Direct Glaze Polygon and Round Top
- All Ultimate doors except Lift and Slide, Bifold, and Multi-Panel Sliding doors.

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MULL TYPES AND CONFIGURATIONS

Ribbon/Stacked (Standard) Mulls

A ribbon or stacked (standard) mull is one in which the frames are joined tightly together with no reinforcement or space between.



Figure 1 Ribbon mull (standard)

Mull Reinforcement (MRF)

Mull Reinforcement or MRF are vertical or horizontal mulls that have aluminum reinforcement members attached to them and are clipped and fastened together making the mull 3/8" wide.

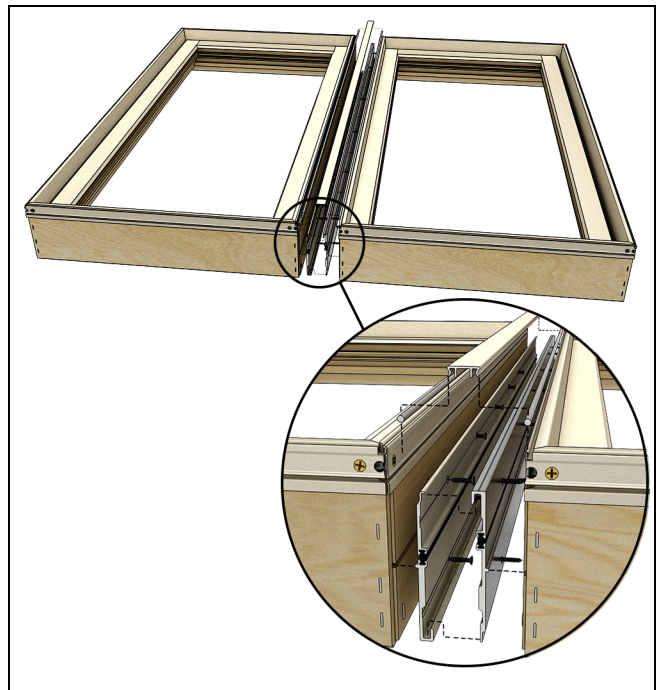


Figure 2 Mull Reinforcement (MRF)

Space Mulls

Space Mulls are vertical or horizontal mulls with wood blocking between them to a specified width. They are sealed at each end and covered at the exterior with a metal space mull cover. Space mulls come in 3/8", 1", 2", 3", 4" and 6" size widths.



Figure 3 Space Mull (factory applied shown)

Laminated Veneer Lumber (LVL) Mull

LVL Mulls are used for structural applications and come from Marvin in 1" and 2" widths (other widths may be available from other sources). Similar to space mulls and MRFs they are sealed at the ends and covered to the exterior with a metal mull cover.

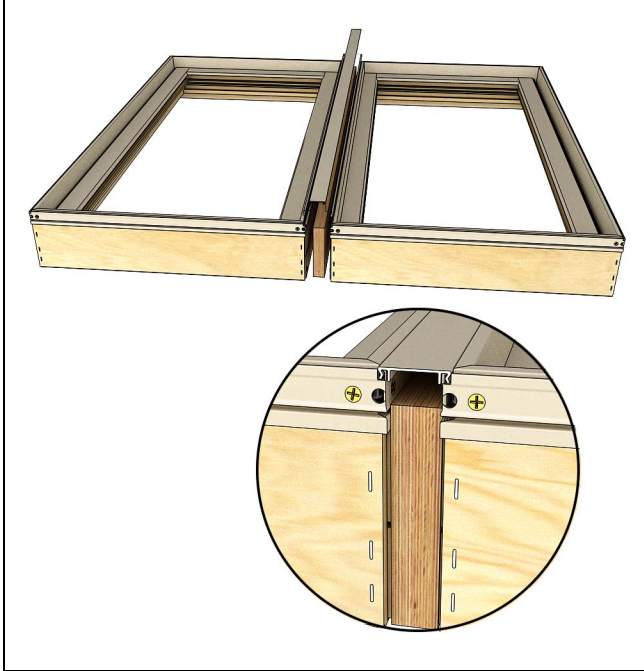


Figure 4 LVL Mull (sealant application not shown in inset)

Stud Pocket Mull

Stud Pocket Mulls are similar to space mulls except the wood blocking is removed just prior to the window being installed.



Figure 5 Stud Pocket Mull

Configurations

All mull configurations are diagrammed with the same rules as viewed from the exterior. The alphabetical label denotes the horizontal row starting with the top. The numerical label denotes the vertical column starting from the left. For example, A1 is always the top left unit as viewed from the exterior.

Line #1	Mark Unit:		
Qty: 1			
A1	A2	A3	Stone White Clad Exterior Bare Pine Interior 3W3H - Rectangle Assembly Assembly Rough Opening 76" X 75 1/2"
B1	B2	B3	Unit: A1 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar
C1	C2	C3	Unit: A2 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar
As Viewed From The Exterior			Unit: A3 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar
Entered As: Size by Units			Unit: B1 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar
Egress Information A1, A2, A3, B1, B2, B3, C1, C2, C3			
No Egress Information available.			
Performance Information A1, A2, A3, B1, B2, B3, C1, C2, C3			
U-Factor: 0.27			
Solar Heat Gain Coefficient: 0.36			
Visible Light Transmittance: 0.62			
Condensation Resistance: 58			
CPD Number: MAR-N-419-07981-00001			
ENERGY STAR: N, NC			
Performance Grade A1, A2, A3, B1, B2, B3, C1, C2, C3			
Licensee #1117			
AAMA/WDMA/CSA/101/ I.S.2/A440-08			
CW-PG50 2133.6X2464 mm (84X97 in)			
CW-PG50 DP +50/-60			
FL4781			
			Unit: B2 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar
			Unit: B3 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar
			Unit: C1 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar
			Unit: C2 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar
			Unit: C3 Clad Rectangle Direct Glaze Basic Frame 25" X 25" Rough Opening 26" X 25 1/2" IG - 1 Lite Low E2 w/Argon Stainless Perimeter Bar

Figure 6 Mull diagram example from quote system

When laying out your assembly, refer to the quote diagram and the corresponding label on the unit.



Figure 7

FIELD PREPARATION

Corner Notches

If you have ordered your assembly factory prepped for mulling, verify that the correct corners have been notched. If not refer to the steps below starting with [step 2 on page 6](#).

The following illustrations show the correct location for notched corners in various configurations regardless of mull type.

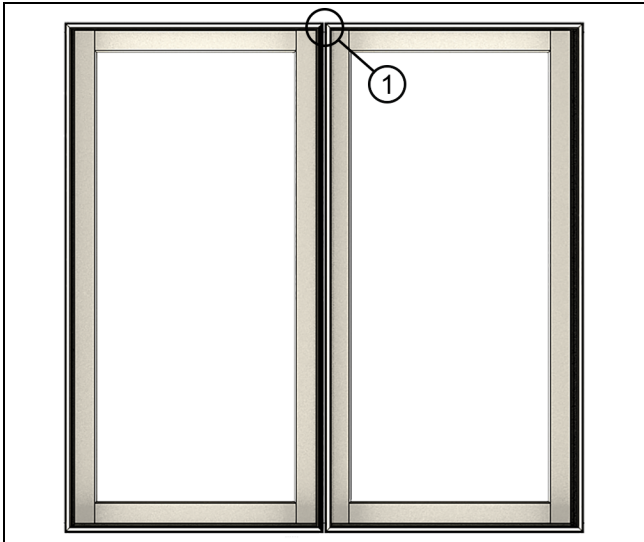


Figure 8

1	Standard Mull 2 wide (notch at the headjamb)
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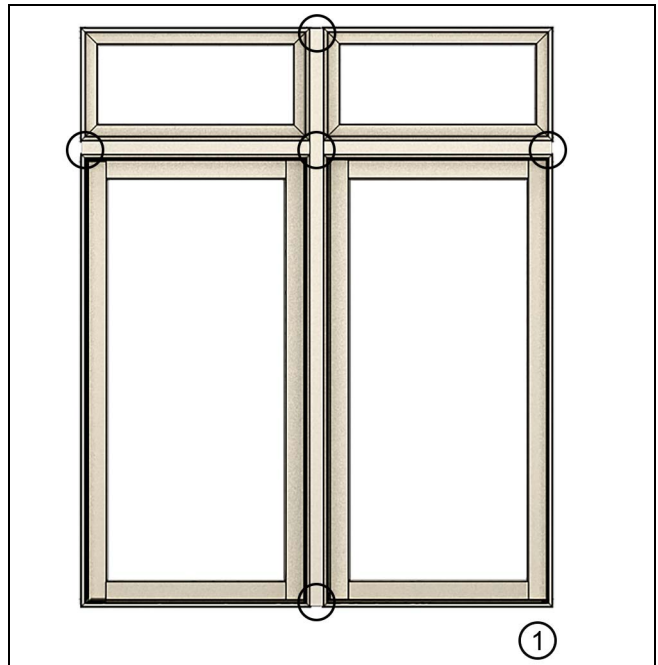


Figure 9

1	2 wide x 2 high direct mull, MRF, and spacemull (notch all corner of the intersection)
---	--

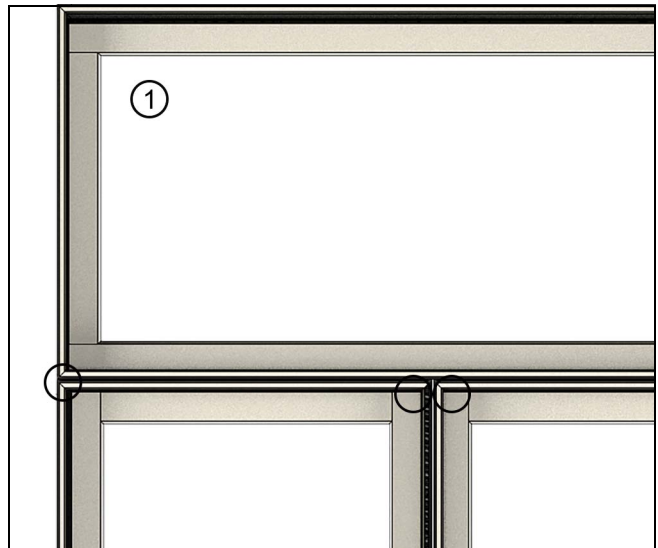


Figure 10

1	2 wide x 2 high with transom on top (notch tops of both lower units and ends)
---	---

1. Any corner that intersects a mull must have a notch cut out of the accessory kerf cladding such as that shown in [Figure 11](#). Notching allows room to apply the mull cap and frame trim later.



Figure 11 Close up of notched corner

2. To make a notch, remove the exterior wall of the accessory kerf with a sharp chisel. Only remove material from the accessory kerf that is perpendicular to a mull. (multiple high/multiple wide configurations will have both walls of the corner(s) notched out). See [Figure 12](#) and [Figure 13](#).

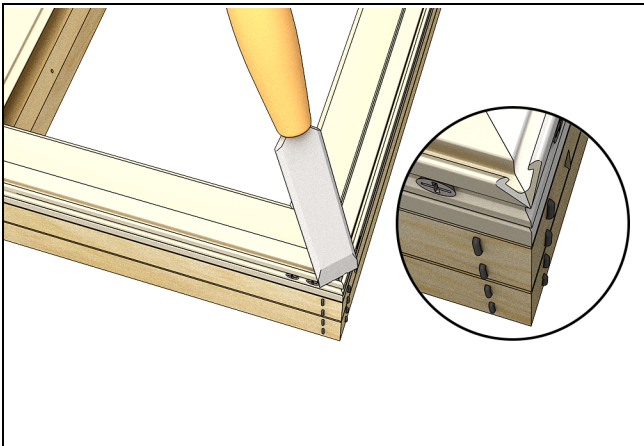


Figure 12



Figure 13 Notching detail for intersecting mulls

3/8" Aluminum Mull Reinforcement (MRF) Prep

This section focuses on preparing an assembly for mull reinforcement if it has NOT been factory applied. Refer to your mull diagram to identify the location of your mull reinforcement(s).

1. MRF KERF: If the units in your assembly have not been prepped for MRF and have no accessory kerf in the wood sides of the jamb, you will need to cut a 1/8" wide by 1/4" deep kerf. Use a circular saw and guide to cut the kerf 2 1/4" (32) from the edge of the frame. See [Figure 14](#)

NOTE: Some full frame units will not have a factory fabricated kerf. All narrow frame product does have a kerf. Images throughout this section show a full frame unit but narrow frame applies as well.

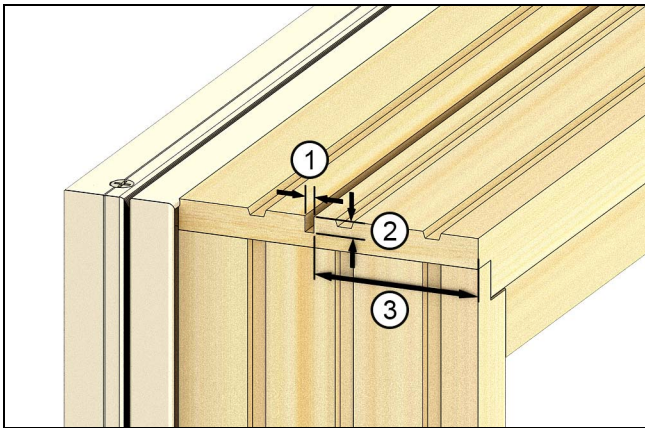


Figure 14

1	1/8" (3)
2	1/4" (6)
3	2 1/4" (32)

2. Apply MRF Components to the frames. Apply a 3/8" bead of Dow Corning® 791 (or equivalent) to the jambs in a wobble pattern. See [Figure 15](#).

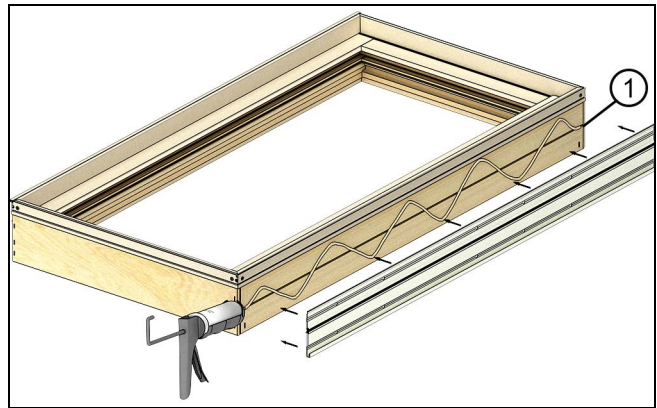


Figure 15

1	Dow Corning 791 sealant or equivalent
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3. The MRF components come in two parts. The beige piece always has the hooked end to the interior. The black piece always has the "hooked" end to the exterior. Insert the alignment leg on the MRF component into the MRF kerf in the frame. Flush the MRF component with the end of the mull and fasten to the frame with #8x5/8" screws in every hole of the MRF. See [Figure 16](#).

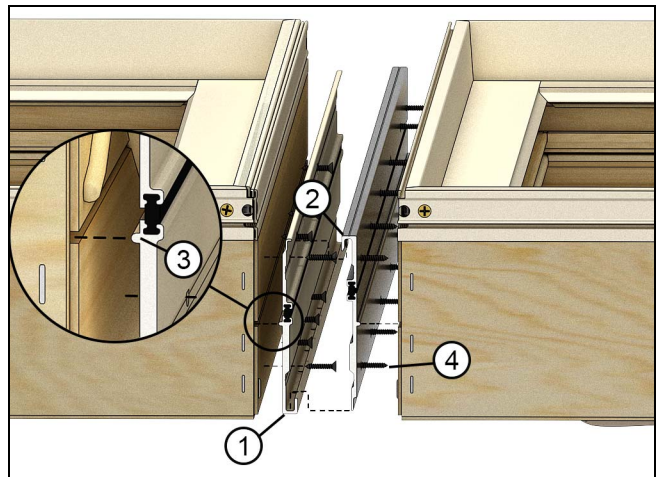


Figure 16

1	Beige MRF (hooked end to interior of units)
2	Black MRF (hooked end to exterior of units)
3	Alignment leg fits into kerf on frame
4	#8x5/8" screws

Assembly

Direct Mulls

Using a smartphone or similar device, scan the QR code below or click [here](#) to play a video of this procedure.



1. When possible, remove operating sash from frames and set aside.
2. Refer to your mull assembly diagram and place the individual units on a flat sturdy surface in the correct orientation, exterior side up. If already applied, remove drip cap(s) and jamb nailing fin where units will be mulled.
3. Notch your corners at the appropriate locations (if not already done). Refer to the section, [Corner Notches on page 5](#) for details if you need to do this.
4. Apply mull sealant tape to one unit ensuring that it is located flush with the exterior edge of the cladding as shown in [Figure 17](#). The tape should extend past the mull and wrap around the corner by at least 1/8". Remove the paper backing.

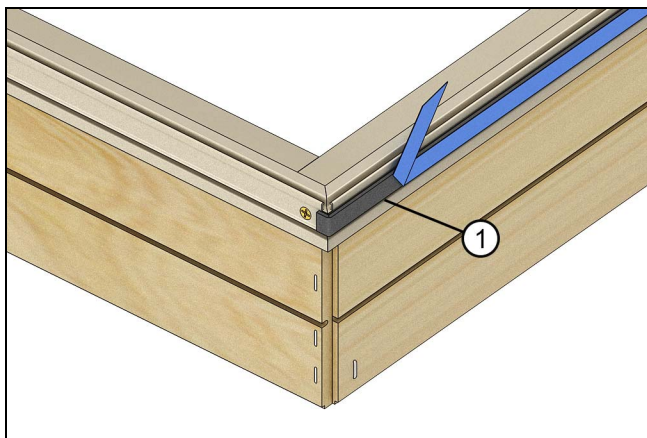


Figure 17

1	Mull sealant tape
---	-------------------

5. Join the units close to each other so the notched corners are together and slide the aluminum mull clip over the mull as shown [Figure 18](#). Pound the clip in with a plastic headed hammer or wood block and framing hammer until the clip contacts the other side.

IMPORTANT

Be careful not to kink or bend the mull clip when installing.

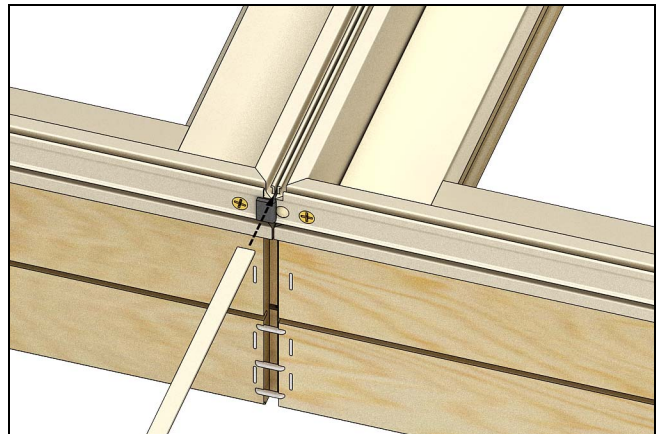


Figure 18

6. Fasten the ends of the mulls with three 1 1/4" 16 gauge staples spaced evenly to the interior side of the kerf in the wood members. [See Figure 19](#).

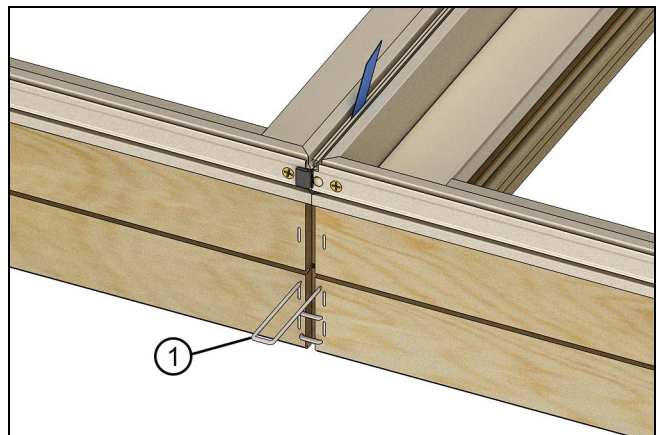


Figure 19

1	1 1/4" 16 gauge staples
---	-------------------------

7. Carefully turn the assembly over, interior side up. Lightly clamp the units together on the wood frame members ensuring they are flush on the interior and even at the ends of the mull.

8. Fasten the units together with 5/8" x 1/2" staples as shown. Three staples spaced at 2" intervals must be placed on both ends, starting approximately 2" from the edge of the frame. Space the remaining staples at 5-8" intervals. See Figure 20.

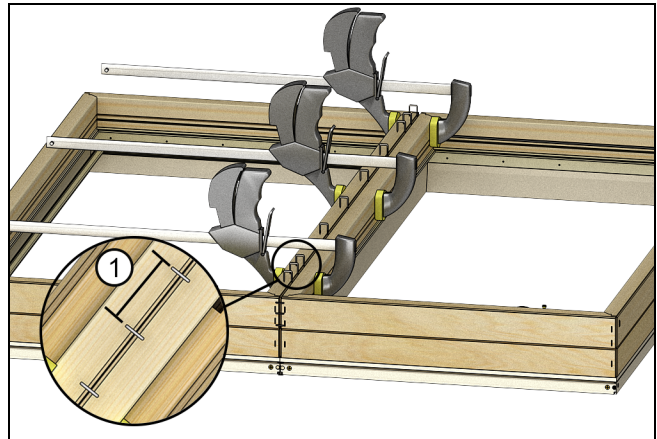


Figure 20

1	3 staples with 2" spacing at ends, 5-8" between ends
---	--

Assembling 3/8" Aluminum Mull Reinforcement (MRF)

Using a smartphone or similar device, scan the QR code below or click [here](#) to play a video of this procedure.



1. Set the units on a flat surface interior side up. Hook the MRF pieces together. Align the frames so they are flush and the ends are even. You may need to seat the assembly together with a rubber mallet. Secure the MRF with #8 x 5/8" undercut head screws through the pre-drilled interior face of the beige component. See Figure 21.

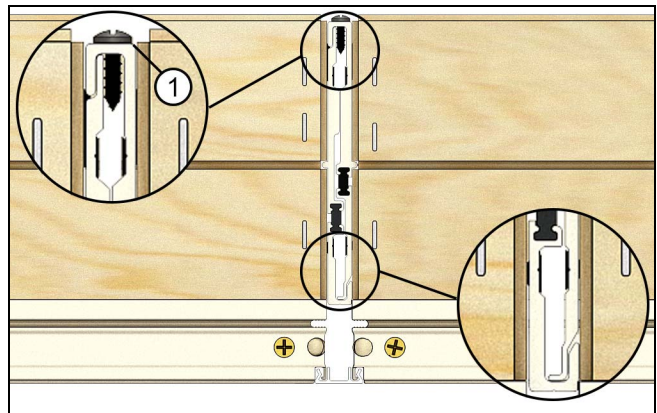


Figure 21

1	#8x5/8" undercut head screws
---	------------------------------

Assembling LVL and Wood Space Mulls-Vertical



Hint

Remove the interior covers/stops where mulls will take place.

1. Set the units on a flat surface interior side up. Apply adhesive in a wobble pattern on the window frame. See Figure 22.

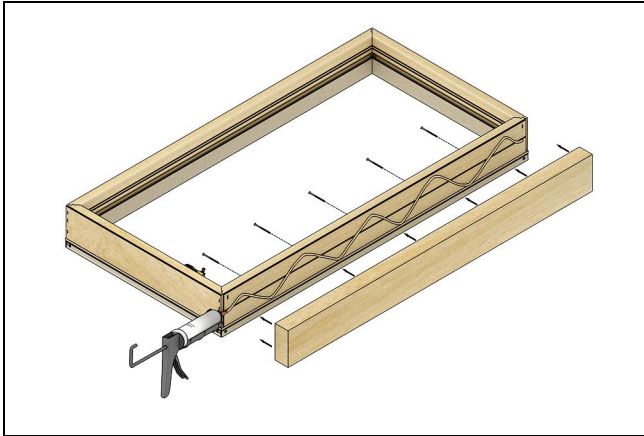


Figure 22

2. Clamp the LVL member to one of the units flush with the interior. Fasten the LVL to the unit with #8 x 1 1/4" screws from the interior 4" (102) and 12-15" (305-381) on center (same plane as the jamb screw holes). See Figure 23.

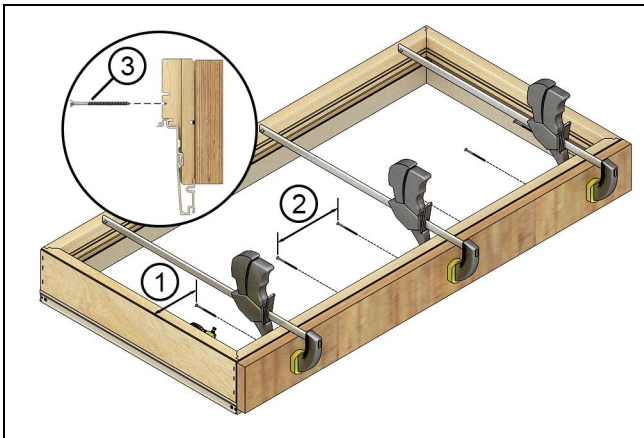


Figure 23

1	4" (102)
2	12-15" OC (305-381)
3	#8x 1 1/4" screw

3. Apply adhesive in a wobble pattern on the LVL or space mull. See Figure 24.

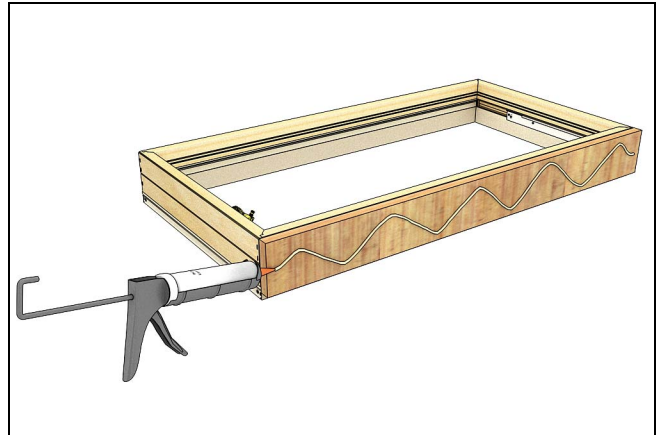


Figure 24

4. Clamp the two units together and repeat screwing through the jambs as before. See Figure 25

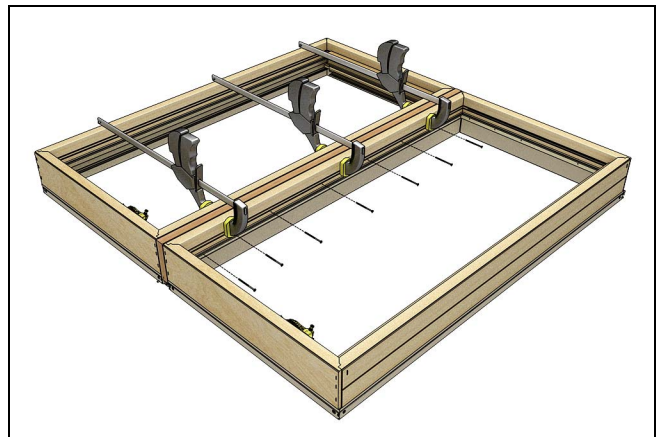


Figure 25

Vertical Space Mull Fastener Lengths

Mull Width	Fastener Length
3/8"	1"
1"	2"
2"	3"
3"	4"
4"	5"

5. Proceed to section, [Mull Cover Application on page 13](#)

Assembling LVL and Wood Space Mulls-Horizontal



Hint

Remove the interior covers/stops where mulls will take place. You will be screwing through the jambs/sills/head jambs to fasten to lvl or blocking.

1. Set the units on a flat surface interior side up. Apply adhesive in a wiggly pattern on the sill of the window frame of the top unit. See [Figure 26](#)

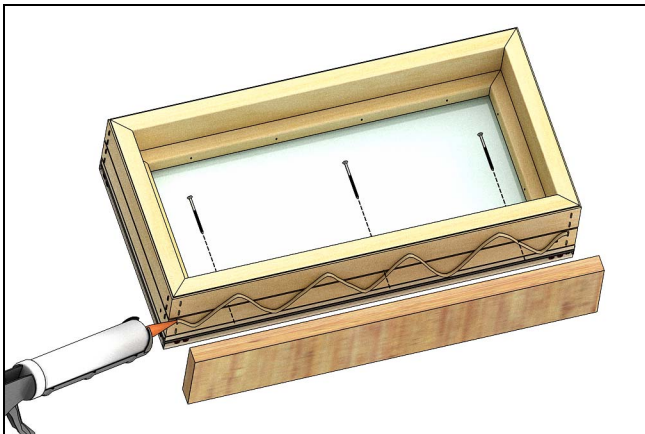


Figure 26

2. (UDH G2 and UGL, skip to the [next step](#))
Clamp the space mull block or LVL to the bottom of the upper unit flush with the interior. Fasten through the sill into the block with #8 2/3 thread screws 4" (102) from each end and every 12-15" (305-381) after (follow fastener length from table below). See [Figure 27](#).

Horizontal Space Mull Fastener Lengths	
Mull Width	Fastener Length
3/8"	1"
1"	2"
2"	3"
3"	4"
4"	5"

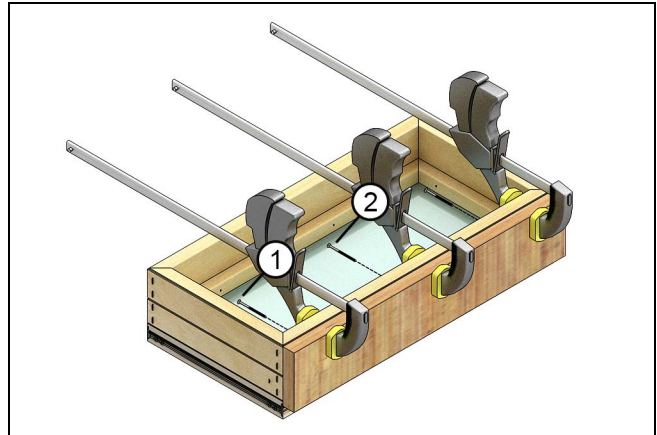


Figure 27

1	4" (102)
2	12-15" OC (305-381)

3. On UDH G2 and UGL Horizontal Mulls, clamp the space mull block flush with the interior of the top unit and fasten through the block into the sill with #8 2/3 thread screws 4" (102) from each end and every 12-15" (305-381) after. See [Figure 28](#).
(See table below for proper length)

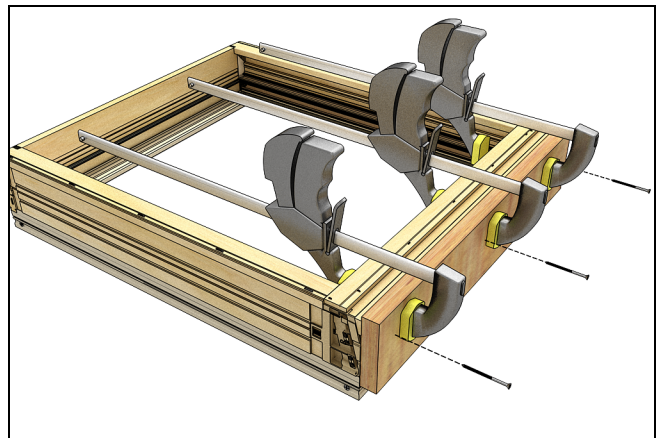


Figure 28

Horizontal Fastener Lengths (UDH G2 & UGL)		
Mull Width	Block to Sill	Head Jamb to Block
3/8"	1"	1 3/4"
1"	2"	2 1/2"
2"	3"	2 1/2"
3"	4"	2 1/2"
4"	5"	2 1/2"

4. Apply adhesive in a wiggle pattern on the LVL or space mull. See Figure 29.

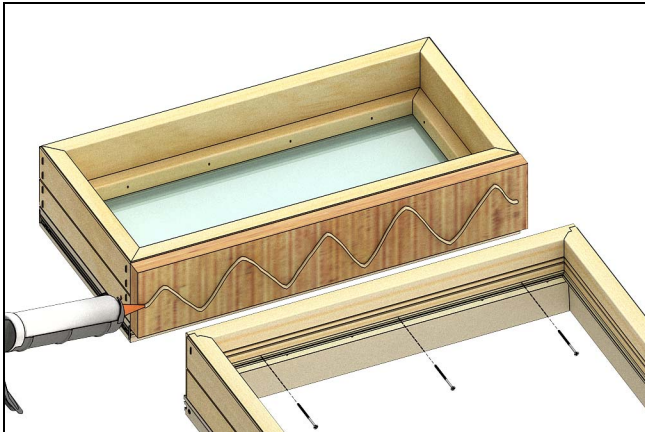


Figure 29

5. Clamp the two units together and screw through the head jamb and into the blocking above 4" from each end and 12-15" on center after. See Figure 30

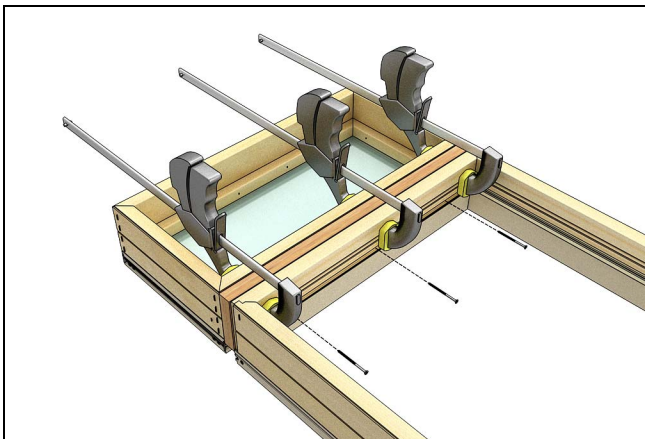


Figure 30

6. On double hung units, remove the head jamb parting stop (on double hung operator units) from the bottom unit or stops from other. Then drive #8 2/3 thread screws through the head jamb and into the space mull block. See Figure 31. (See fastener table above for proper length).

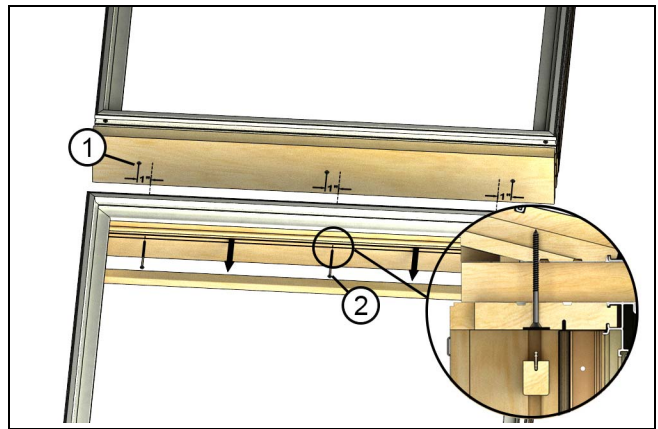


Figure 31 Remove parting stop on double hungs

1	4" from each end and 12-15" after through block into sill
2	Fasten screws through head jamb into block 4" from each end and 12-15" after

NOTE: Make sure to place fasteners going through the head jamb offset about 1" from those fastening the block to the sill of the upper unit.

7. Replace the stops you removed earlier.

Mull Cover Application

Frame Prep

1. With the assembly facing exterior up, make sure the corner notches are made in the right places. Refer to the previous section "Corner Notches" for details.
2. Apply frame kerf weatherstrip in the accessory kerf along the mullion and all open kerfs that run perpendicular to the mull. Roll the weatherstrip into the kerf with a screen spline roller or similar tool. See Figure 32.

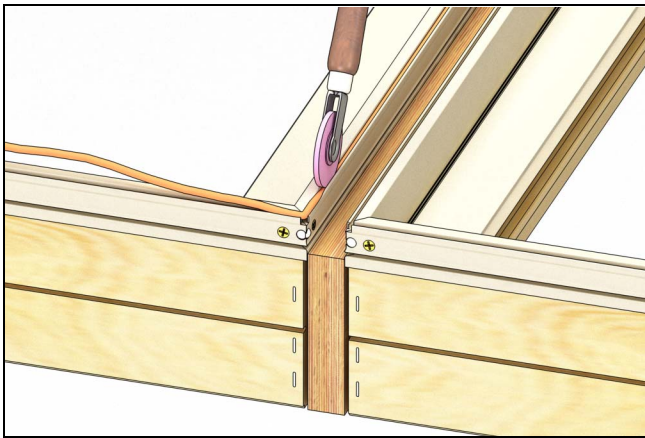


Figure 32

3. If not done already cut two pieces of A148 frame trim. Measure the outside frame measurement and subtract 5/32" (4) for the finished length. Set these aside until sealant application is complete. See Figure 33.

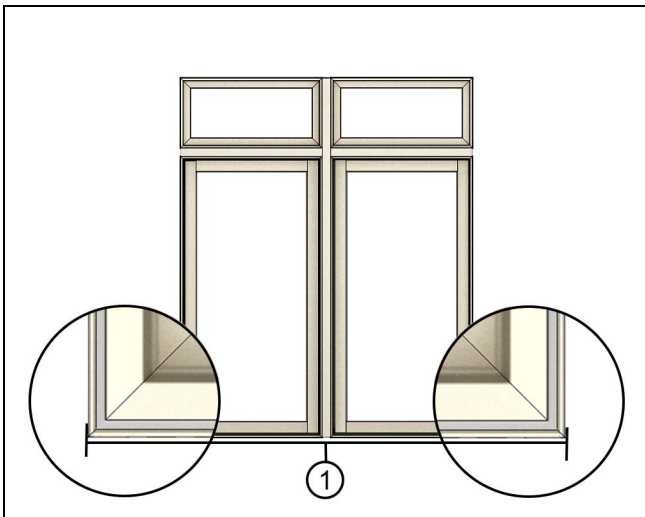


Figure 33

1	Outside width minus 5/32"
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4. If not done already cut the mull covers to length. Measure to the inside of the accessory kerf. Set these aside until sealant application is complete. See Figure 34.

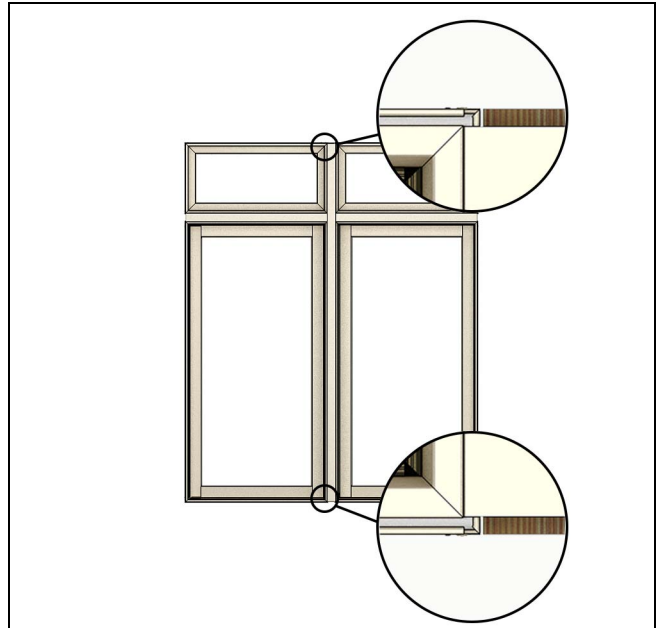


Figure 34 Mull cover: measure to the inside of the accessory kerf.

Sealant Application-3/8" MRF

1. Apply 3/4" foam backer rod to the full length of the mullion. See Figure 35.



Figure 35

1	3/4" backer rod
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2. Apply a 1/8" bead of clear sealant 2-3" long on each end of the mull and at any intersections along both edges of the mull. See Figure 36.

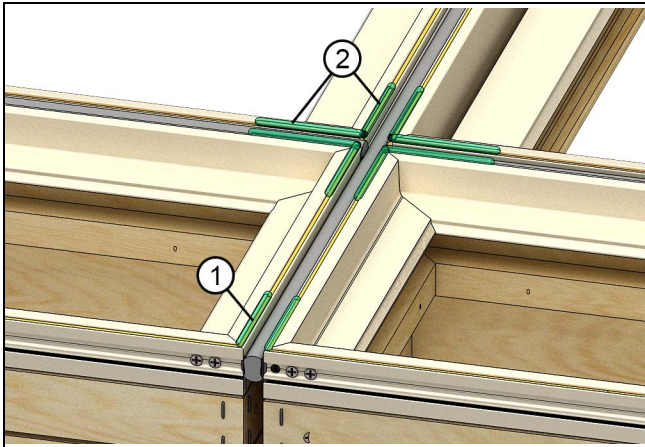


Figure 36

1	Sealant at mull ends
2	Sealant at intersections

3. Apply a large bead of clear sealant 2-3" long on each end of the mull on top of the backer rod (full frame) or mull reinforcement (narrow frame) and at any intersections along both edges of the mull. See Figure 37. For assemblies that do not use the A148 frame trim (such as those with casing) apply a piece of tape across the mull to keep the sealant in place. See Figure 38.

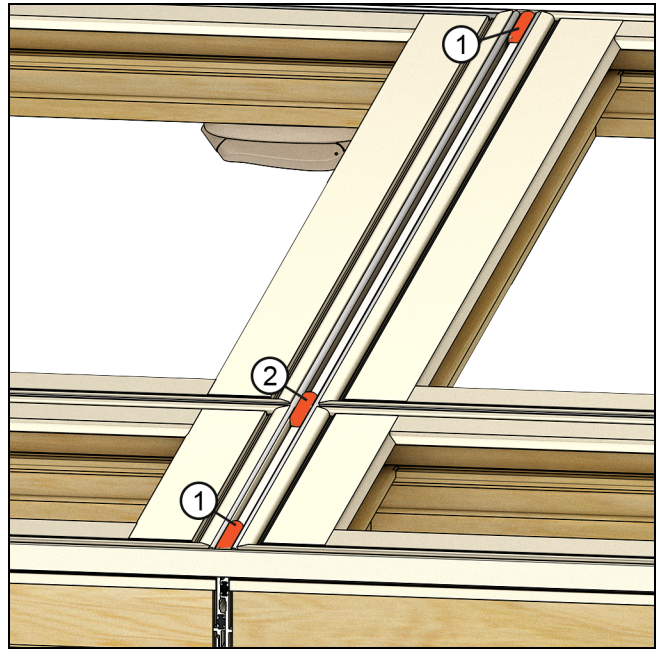


Figure 37 Narrow frame with A148 shown

1	2-3" of sealant at mull ends
2	Sealant at intersections of mulls

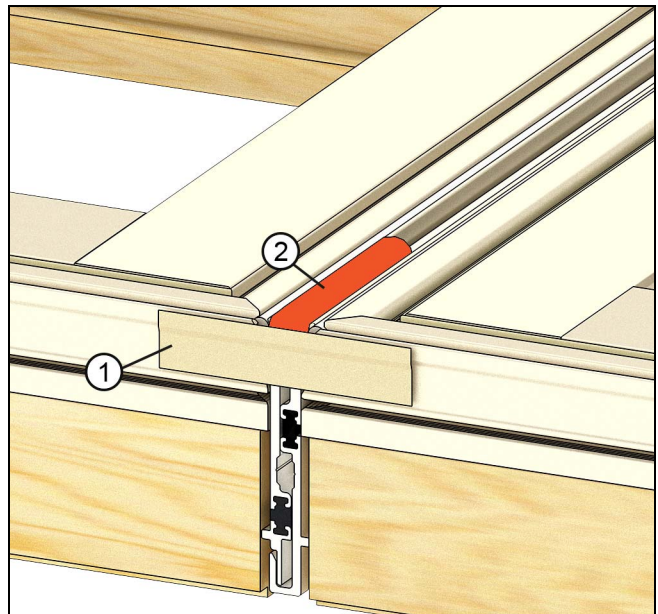


Figure 38 Narrow frame without A148 shown.

1	Tape
2	2-3" of sealant at mull ends.

Sealant Application-Space Mulls

1. Apply a u-shaped bead of sealant over the ends of the space mull block. Press the foam block into place (notched side down) and apply additional beads of sealant on top. See Figure 39.

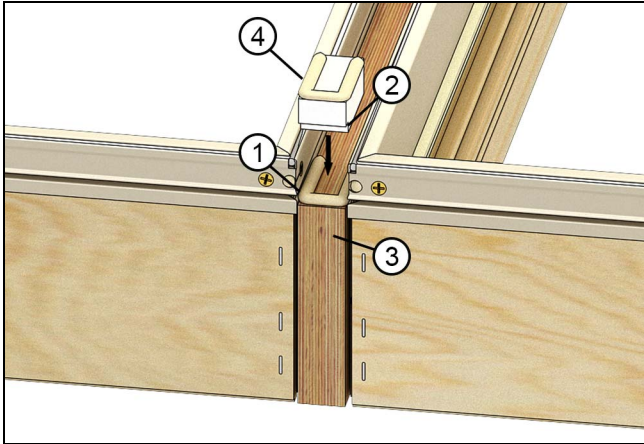


Figure 39

1	Sealant
2	Foam block (notched side down)
3	Space mull block/LVL
4	Sealant on top sides and outer edge of foam block

2. Apply a 1/8" bead of clear sealant 2-3" long in the accessory kerf on each end of the mull and at any intersections along both edges of the mull. See Figure 40.

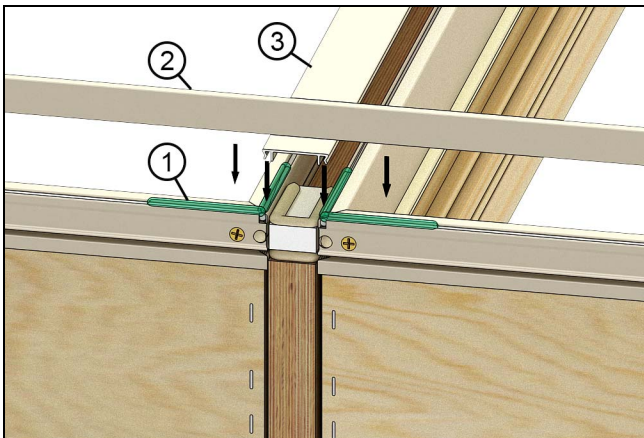


Figure 40

1	Sealant
2	A148 Frame trim (applied in next step)
3	Space mull cover (applied in next step)

Mull Cover Application

1. Use a plastic headed hammer to make minor dents in the cladding accessory kerf where the A148 frame trim will be applied. The frame trim will always run perpendicular to any non-direct mull. See Figure 41.

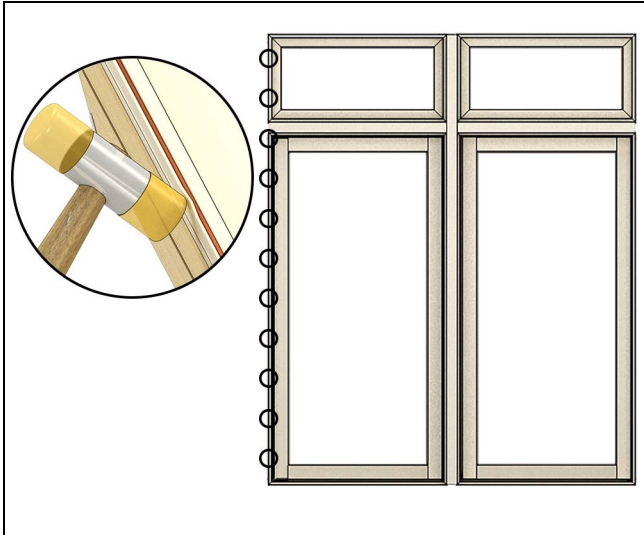


Figure 41



Hint

Avoid "over-denting" the edges of the frame and use the side of the plastic headed hammer.

2. Apply the A148 frame trim to the assembly at each end of a non-standard (direct) mull. Pound the trim on with a plastic headed hammer or block of wood and framing hammer. See Figure 42.

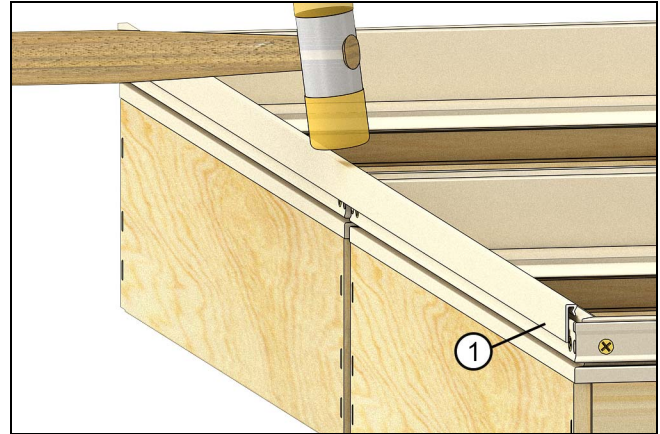


Figure 42

1	A148 frame trim
---	-----------------

3. Apply the mull cover by inserting one end into the frame kerf and tapping the cover into place with a plastic headed hammer or rubber mallet the first 6-10" from the end. Then insert the opposite end into the frame kerf and tap into place along the length of the mull. See Figure 43.

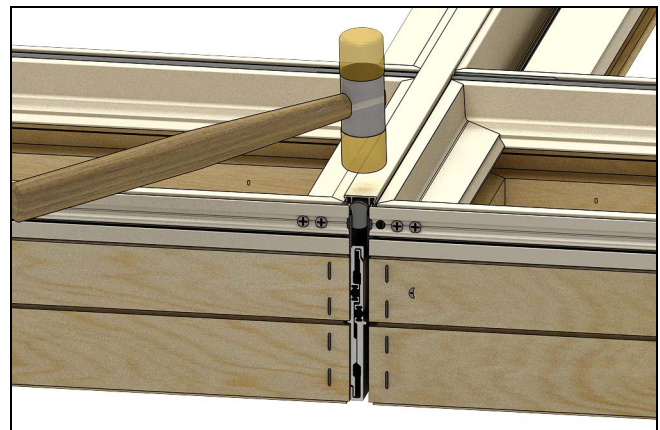


Figure 43 (A148 frame trim removed for illustrative purposes, MRF shown, similar on other space mull applications)

Multi High/Multi Wide Assemblies

1. Mull clips are sent cut to length for one high or one wide assemblies. On multi high multi wide assemblies all clips are sent long and you will need to cut them to fit.

2. Mull all direct assemblies first.

3. Mull space mulls, MRFs and LVLs last.

Install Field Applied Casings

Refer to the following instructions for information on how to apply BMC or Flat Casing in the field. Visit www.marvin.com/support/technical-resources and search for the following instructions:

- [Rectangular BMC Instructions for Windows and Doors 11708096](#)
- [Clad Flat Casing Instruction 19913125](#)
- [Ultimate Polygon BMC Instruction 11708097](#)
- [Ultimate Round Top BMC Instruction 11708561](#)

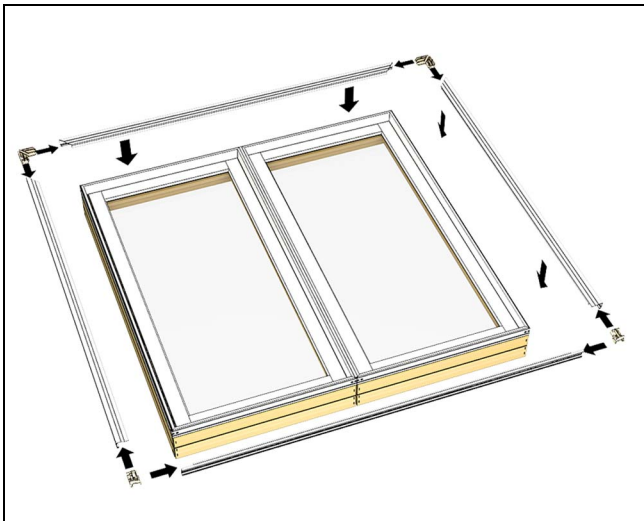


Figure 44