

Steel Reinforced Joining Guide

for Andersen® 400 Series Casement, Awning and Specialty Windows



INSTALLER: Please leave this guide with the building owner to file for future reference.

Congratulations! You have just purchased one of the many fine Andersen® products. Proper assembly, installation and maintenance are essential if the benefits of your Andersen product are to be fully attained. Therefore, please read and follow this instruction guide completely. If your abilities do not match this procedure's requirements, contact an experienced contractor. You may direct any questions about this or other products to your local Andersen dealer, found in the Yellow Pages under "Windows" or call Andersen WindowCare® service center at 1-888-888-7020 Monday through Friday, 7 a.m. to 7 p.m. Central Time and Saturday, 8 a.m. to 4 p.m. Central Time. Thank you for choosing Andersen.

Important Safety, Assembly, and Installation Information

Every assembly and installation is different (windloads, structural support, etc.). Andersen strongly recommends consultation with an Andersen supplier or an experienced contractor, architect, or structural engineer prior to the assembly and installation of any Andersen product. For installation methods not covered in this guide, (i.e. through jamb) please visit the Architect Detail File on the web (www.andersenwindows.com). Andersen has no responsibility in regard to the post-manufactured assembly and installation of Andersen products.

⚠ WARNING

Use caution when working at elevated heights and around unit openings. Follow manufacturer's instructions for safe use of ladder and/or scaffolding. Failure to do so may result in injury or death.

⚠ WARNING

Follow manufacturer's instructions for safe operation of hand/power tools. Always wear safety glasses. Failure to do so may result in injury and/or product damage.

⚠ WARNING

Windows and doors can be heavy. Use safe lifting techniques and a reasonable number of people with enough strength to lift, carry and install window and door products to avoid injury and/or product damage.

⚠ WARNING

Unless specifically ordered, Andersen windows and doors are not equipped with safety glass, and if broken, could fragment causing injury. Many laws and building codes require safety glass in locations adjacent to or near doors. Andersen windows are available with safety glass that may reduce the likelihood of injury when broken. Information on safety glass is available from your local Andersen dealer.

⚠ CAUTION

- Andersen® Installation Flanges **DO NOT** take the place of standard window and door flashing. **Unit must be properly flashed and sealed with sealant, and full width drip cap for protection against water and air infiltration.** Use non-reflective flashings. Highly reflective flashing tapes can raise the surface temperature of the vinyl to the point where vinyl deformation and product damage may occur.
- Do not apply any type of film to glass. Thermal stress conditions resulting in glass damage could occur.
- Use of movable insulating materials such as window coverings, shutters, and other shading devices may damage glass and/or vinyl. In addition, excessive condensation may result causing deterioration of windows and doors.

Parts Included

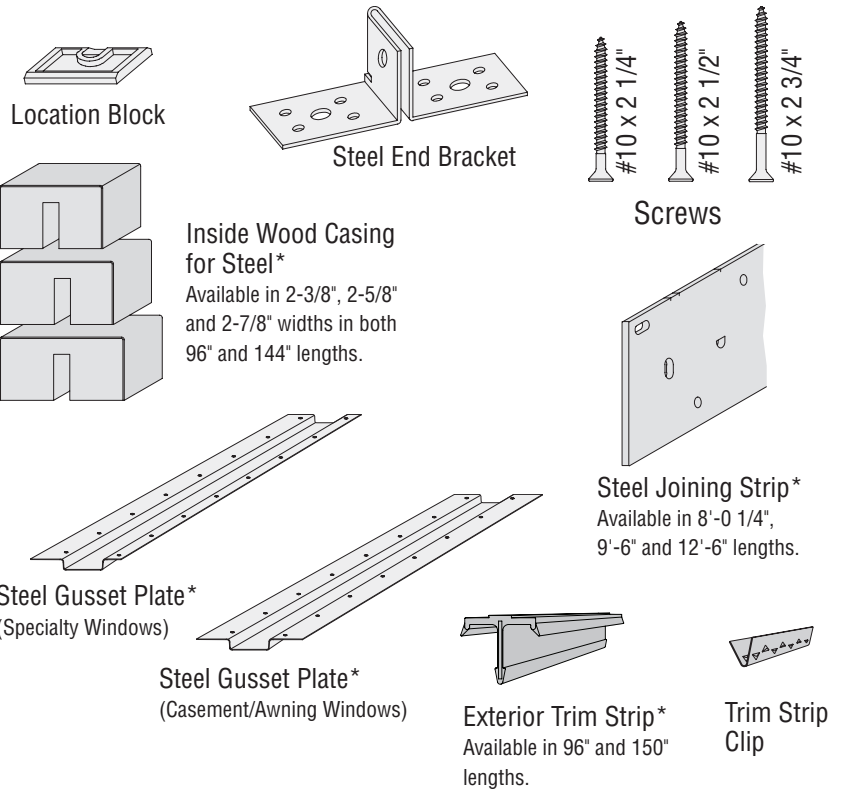
- (2) Steel End Brackets
- (10) Location Blocks
- (2) 1/4" x 3/4" Hex Head Bolts and Nuts
- (18) #10 x 2 1/4" Screws (pack # RMA1)
- (18) #10 x 2 1/2" Screws (pack # RMB1)
- (18) #10 x 2 3/4" Screws (pack # RMC1)
- (22) Trim Strip Clips for 96" and 150" Lengths

Additional Parts Required

- Steel Joining Strip*
- Exterior Trim Strip*
- Inside Wood Casing for Steel*
- Steel Gusset Plate*
- Drip Cap (full width)*

Tool and Supplies

- Safety Glasses
- Tape measure
- Drill/Driver
- Sealant Primer
- Utility Knife
- Caulk Gun
- Sealant
- Hammer
- Clamps
- Small Pry Bar
- Level
- Saw (for cutting steel)
- Phillips Head Screwdriver
- #8 x 2 1/2" Screws
- 8d Finish Nails
- 1/8" Drill Bit
- 5/16" Drill Bit
- Rust Inhibiting Primer
- Wood Block
- 5/8" Nails or Staples



* These parts are needed for a complete reinforced joining installation. They are not included in the steel joining kit and must be purchased separately.

⚠ WARNING

Metal fasteners and other hardware components may corrode when exposed to preservative treated and fire-retardant treated lumber. Obtain and use the appropriate metal fasteners and hardware as called out by the installation guide to fasten unit to any rough opening made from pressure treated and fire-retardant treated lumber. Failure to use the appropriate materials for the installation may cause a failure resulting in injury, property or product damage.

NOTICE

Units may be joined (assembled) horizontally and then lifted into rough opening or joined in sections and assembled in rough opening. Method used will depend on combination size and weight and on the installer's individual preferences.

NOTICE

VERIFY YOUR SELECTION

Andersen offers several choices in custom designed joining materials. Whether or not to use reinforcement in a window combination is dependent on combination size and design load requirement. Combination size is based on the geometry and area of the combination in question. Design load is based on several factors; wind speed, location, orientation, elevation, and others. Consult local building codes for determining design load of your installation. Determination of design load is the sole responsibility of the architect, building owner, contractor, and/or consumer. Refer to the "Combination Design" section in the *Andersen® Product Guide* for further information. Proper joining material selection for Andersen windows and patio doors is essential if the benefits of experienced window design and engineering, quality materials and skilled workmanship are to be fully attained. Every assembly, joining, and installation is different. Andersen strongly recommends consultation with an Andersen supplier or an experienced contractor, architect, or structural engineer prior to the assembly and installation of any Andersen product.

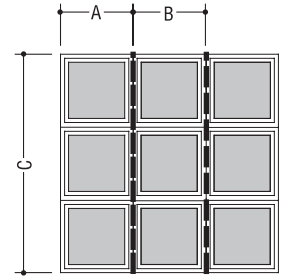
CAUTION

- Andersen® Reinforced Steel Joining products are designed to give added windload performance to joined combinations of Andersen windows and patio doors. They do not take the place of structural components in a building. Failure to provide adequate structural support could lead to window and door performance problems.
- Window units joined over patio doors should not rest on head jamb.

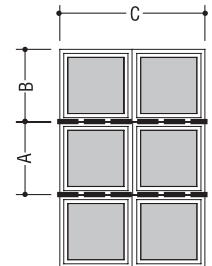
1. Verify that Steel Joining is Adequate for Your Installation

CAUTION

Stacking of units is allowed to a maximum height of 12'-6". Contact your Andersen supplier for information about taller combinations.



- Calculate average adjacent unit dimension (A+B÷2).
- Determine mullion length (C).
- Use windload chart below to cross reference average adjacent unit dimension with mullion length to determine windload performance of your combination.
- Be sure that this performance is adequate for your installation requirements.
- Refer to Combination Design section in the *Andersen® Product Guide* for further information.



Design Windload PSF Table for Non-Reinforced Steel

Type of Combination: 1-Way or 2-Way

For Combining: Casement, Awning, or Specialty Units

AVERAGE ADJACENT UNIT DIMENSION	A + B ÷ 2 = 12' 6"	40	33	28	23	17	14													
	A + B ÷ 2 = 12' 1"	40	35	30	25	19	15													
	A + B ÷ 2 = 11' 6"	40	35	31	27	20	16													
	A + B ÷ 2 = 11' 1"	40	37	33	28	21	16													
	A + B ÷ 2 = 10' 6"	40	38	35	29	22	17													
	A + B ÷ 2 = 10' 1"	40	40	36	31	24	19	14												
	A + B ÷ 2 = 9' 6"	40	40	37	32	25	21	16	14											
	A + B ÷ 2 = 9' 1"	40	40	38	34	28	22	17	14											
	A + B ÷ 2 = 8' 6"	40	40	39	36	29	23	18	15											
	A + B ÷ 2 = 8' 1"	40	40	40	37	30	25	19	16	13										
	A + B ÷ 2 = 7' 6"	40	40	40	40	32	27	21	17	14										
	A + B ÷ 2 = 7' 1"	40	40	40	40	35	28	23	19	16	14									
	A + B ÷ 2 = 6' 6"	40	40	40	40	40	32	25	22	18	15									
	A + B ÷ 2 = 6' 1"	40	40	40	40	40	35	26	24	19	17	14								
	A + B ÷ 2 = 5' 6"	40	40	40	40	40	39	27	26	22	19	14	13							
	A + B ÷ 2 = 5' 1"	40	40	40	40	40	40	28	28	23	21	16	14							
	A + B ÷ 2 = 4' 6"	40	40	40	40	40	40	33	33	26	22	19	16	14						
	A + B ÷ 2 = 4' 1"	40	40	40	40	40	40	40	37	32	26	22	19	16	14					
	A + B ÷ 2 = 3' 6"	40	40	40	40	40	40	40	40	35	29	25	22	18	16					
	A + B ÷ 2 = 3' 1"	40	40	40	40	40	40	40	40	38	35	28	25	22	19					
A + B ÷ 2 = 2' 6"	40	40	40	40	40	40	40	40	40	40	36	31	26	22	16	13				
A + B ÷ 2 = 2' 1"	40	40	40	40	40	40	40	40	40	40	40	37	32	28	20	18				
A + B ÷ 2 = 1' 6"	40	40	40	40	40	40	40	40	40	40	40	40	40	37	34	30				
C = (mullion length)	5'-1" or less	5'-6"	6'-1"	6'-6"	7'-1"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	10'-6"	11'-1"	11'-6"	12'-1"	12'-6"				



For a mullion joint with a continuous jamb on one side, multiply PSF by 1.2.

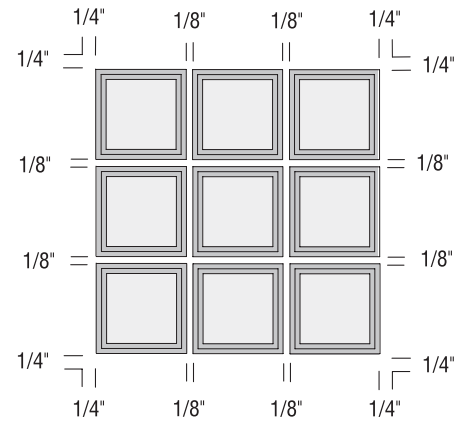


For a mullion joint with a continuous jamb on both sides, multiply PSF by 1.4.

NOTE: When exceeding 40 PSF design load, verify the individual units meet windload performance criteria.

2. Determine Dimensions of Rough Opening

- Determine dimension of rough opening by adding dimensions of all units, plus 1/8" for each join, and a 1/4" for the perimeter around combination.



Rough Opening Dimension = Unit Dimension + 1/8" per join + 1/4" around perimeter of combination

3. Prepare Units

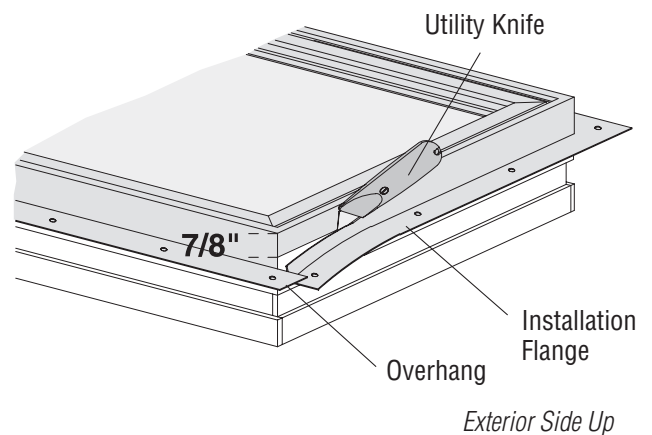
- Position units on a clean flat work surface, exterior side up.
- Remove all packaging materials.
- Identify the locations for Steel Reinforced Mullion/Transom Joints. All joins not requiring Steel Reinforced Mullion must use and follow Andersen's Non-Reinforced joining procedures. Refer to Guide #0000368 Non-Reinforced Joining for Casement, Awning and Picture Window or Guide #0004344 Non-Reinforced Joining for Flexiframe®, Arch, Springline™ and Gothic Windows. Do not apply Gusset Plates in Non-Reinforced Joining procedure until **Step 9** of this guide.

Casement and Awning Units

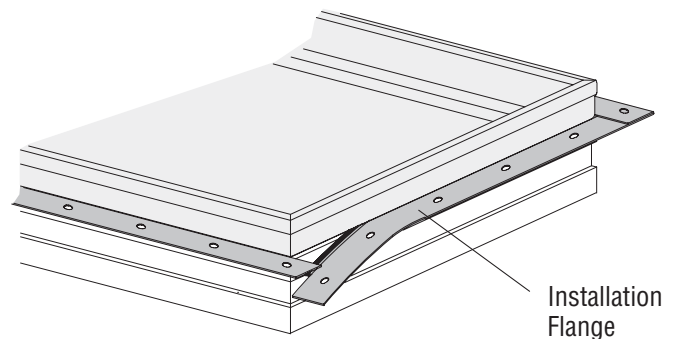
- Remove *Installation Flanges* from sides to be joined 7/8" down from top of unit, using a utility knife. Do not cut end of *Installation Flange*, leave an overhang on both sides.

Specialty Units

- Remove *Installation Flanges*, if necessary, from sides to be joined by pulling outward.



Casement, Awning, and Circle Top™ Windows

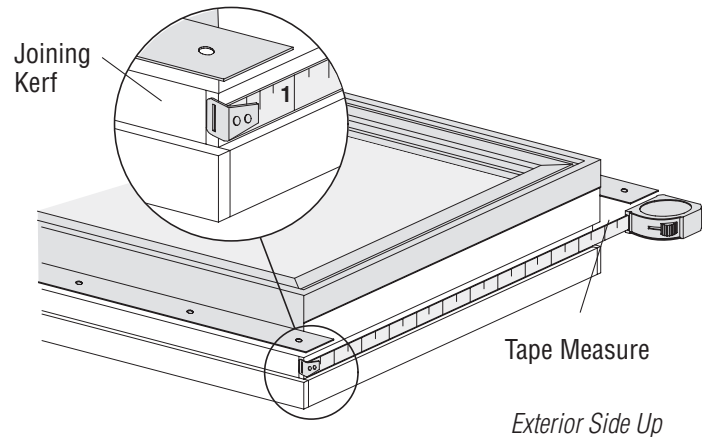


Specialty Windows

Exterior Side Up

4. Prepare Steel Reinforced Joining Strip

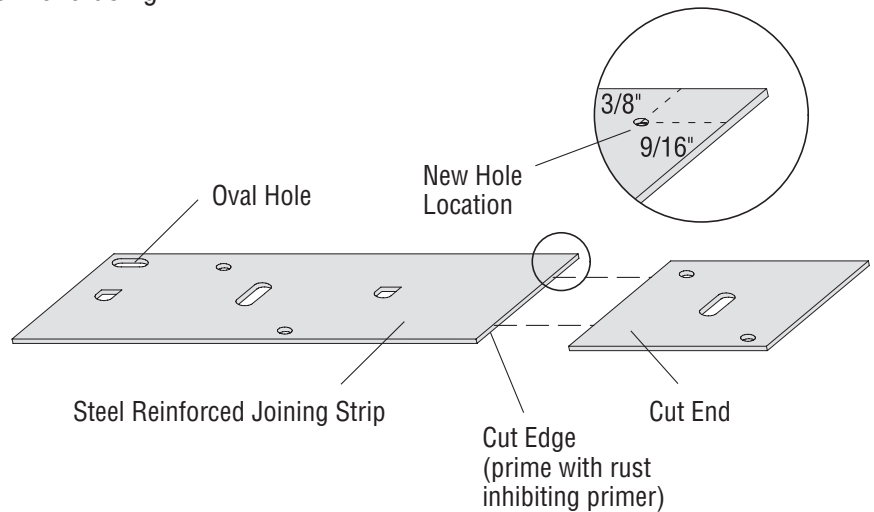
- Measure the length of joining kerf on side of unit being joined.
- Cut *Steel Reinforced Joining Strip* to measured length using any standard metal cutting method (hack saw, reciprocating saw, band saw or circular saw with metal cutting blade). Make cut on end that does not have oval hole and prime cut edge.



CAUTION

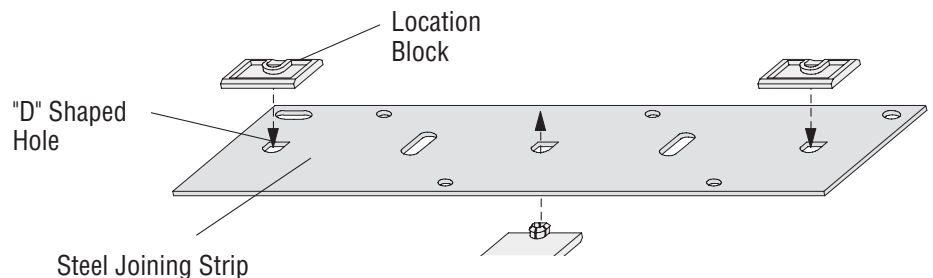
Treat cut ends and drilled holes on Steel Reinforced Joining Strip with a quality rust inhibiting primer. Failure to do so may promote premature corrosion which could result in structural failure.

- Mark and drill a hole on cut end of *Steel Reinforced Joining Strip* $3/8$ " in from side and $9/16$ " from end using a $5/16$ " drill bit.



5. Apply Location Blocks

- Insert *Location Blocks* in "D" shaped holes alternating sides every other hole.



6. Select Correct Screw Pack Envelope

- Select correct screw pack envelope based on units and direction of the reinforced join in your combination.

Joining These Units: Joining Direction: Screw Size:

SCREW PACK #RMA1

Casement to Casement	Vertical	2 1/4"
Awning to Awning	Horizontal	2 1/4"

SCREW PACK #RMB1

Casement to Awning	Horizontal/Vertical	2 1/2"
Specialty to Casement	Vertical	2 1/2"
Specialty to Awning	Horizontal	2 1/2"
Circle Top™ to Awning	Horizontal	2 1/2"
Circle Top to Casement	Vertical	2 1/2"
CAPW to Casement	Vertical	2 1/2"
CAPW to Awning	Horizontal	2 1/2"

Joining These Units: Joining Direction: Screw Size:

SCREW PACK #RMC1

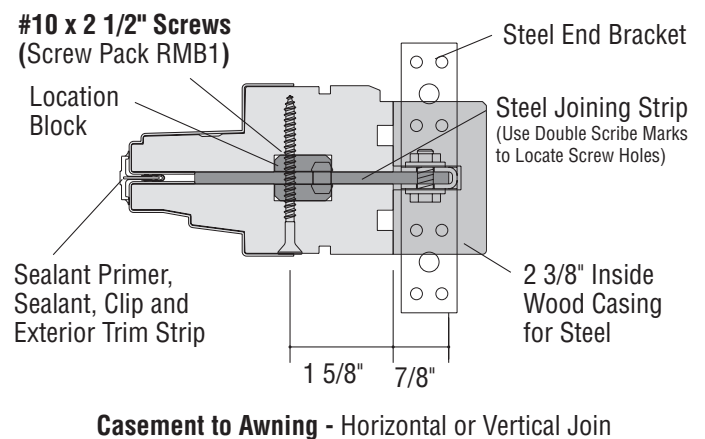
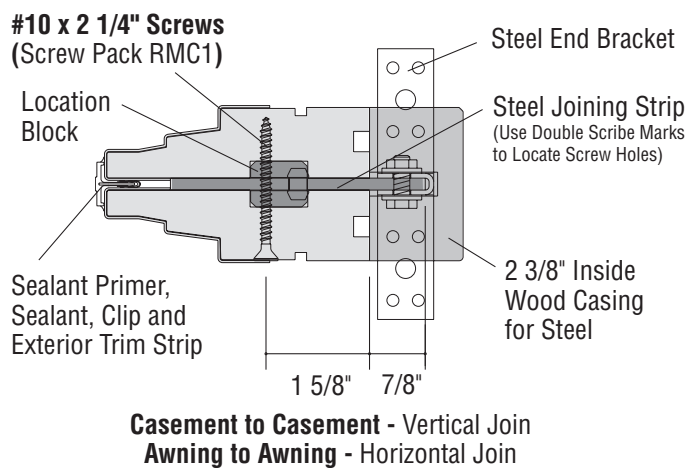
Circle Top to Specialty	Horizontal/Vertical	2 3/4"
Circle Top to Circle Top	Horizontal/Vertical	2 3/4"
Casement to Casement	Horizontal	2 3/4"
CAPW to Casement	Horizontal	2 3/4"
CAPW to Awning	Vertical	2 3/4"
Specialty to Casement	Horizontal	2 3/4"
CAPW to Specialty	Horizontal/Vertical	2 3/4"
CAPW to CAPW	Horizontal/Vertical	2 3/4"
Awning to Awning	Vertical	2 3/4"
Specialty to Awning	Vertical	2 3/4"
Specialty to Specialty	Horizontal/Vertical	2 3/4"

7. Choose Reference Detail

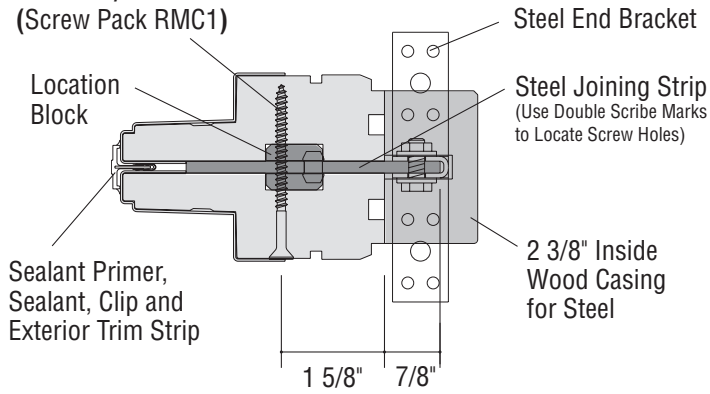
- Refer to detail that illustrates reinforced joint in your combination.

NOTICE

Glass Stop removal may be required on direct glazed windows with High-Performance™ Impact Resistant glass.

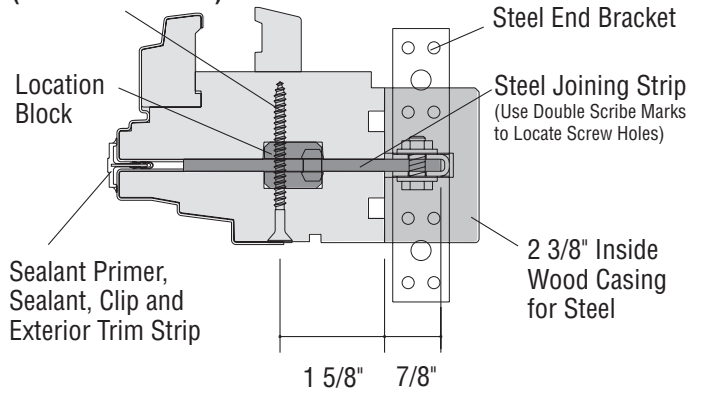


#10 x 2 3/4" Screws
(Screw Pack RMC1)



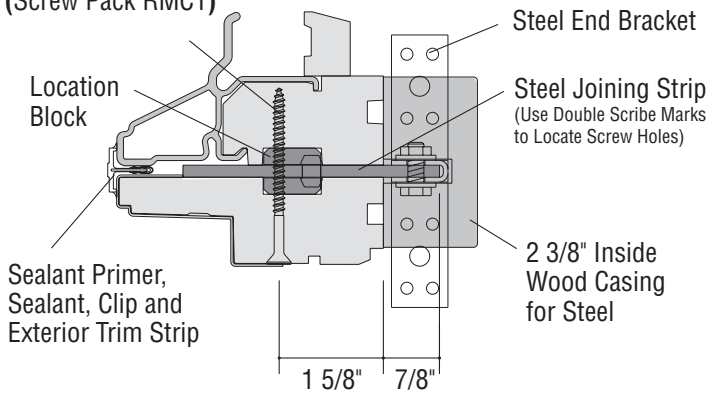
Casement to Casement - Horizontal Join
Awning to Awning - Vertical Join

#10 x 2 3/4" Screws
(Screw Pack RMC1)



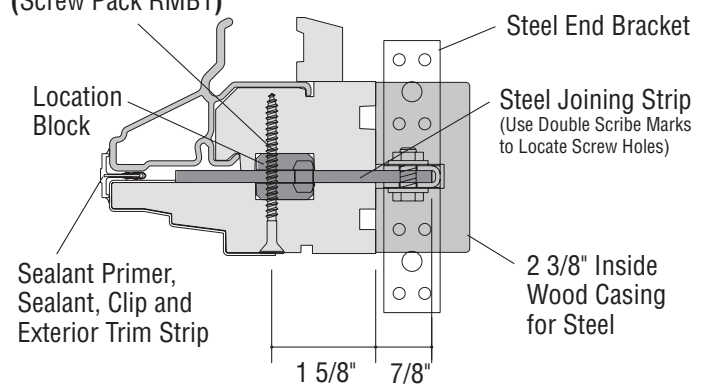
Casement/Awning Picture Window to Casement
- Horizontal Join

#10 x 2 3/4" Screws
(Screw Pack RMC1)



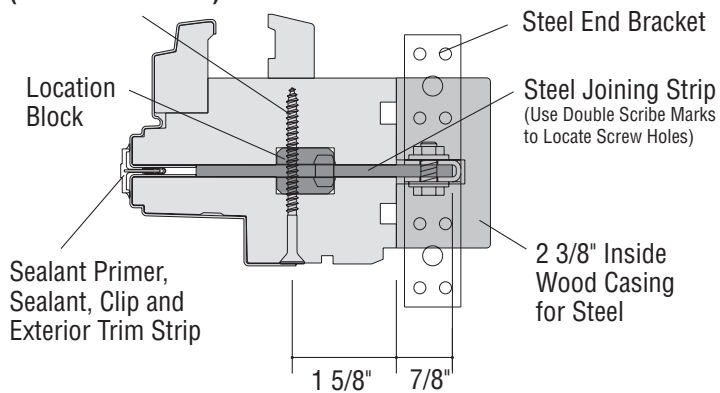
Specialty to Casement - Horizontal Join
Specialty to Awning - Vertical Join

#10 x 2 1/2" Screws
(Screw Pack RMB1)



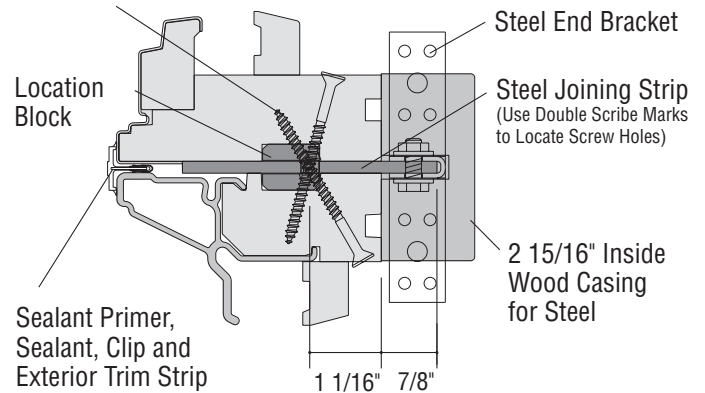
Specialty to Casement - Vertical Join
Specialty to Awning - Horizontal Join

#10 x 2 3/4" Screws
(Screw Pack RMC1)



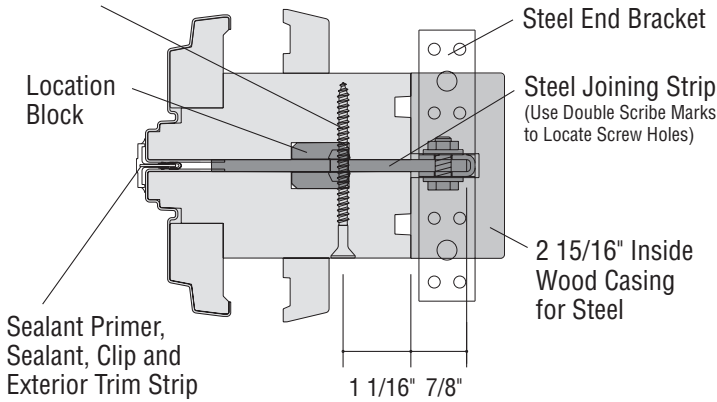
Circle Top™ to Casement - Horizontal Join

#10 x 2 3/4" Screws
(Screw Pack RMC1)



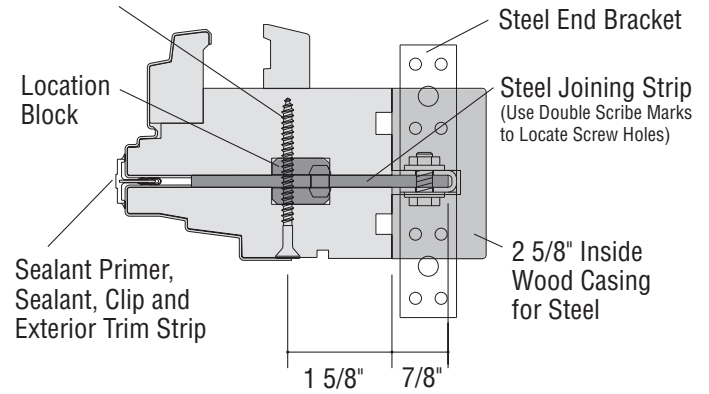
Circle Top to Specialty - Horizontal Join

#10 x 2 3/4" Screws
(Screw Pack RMC1)



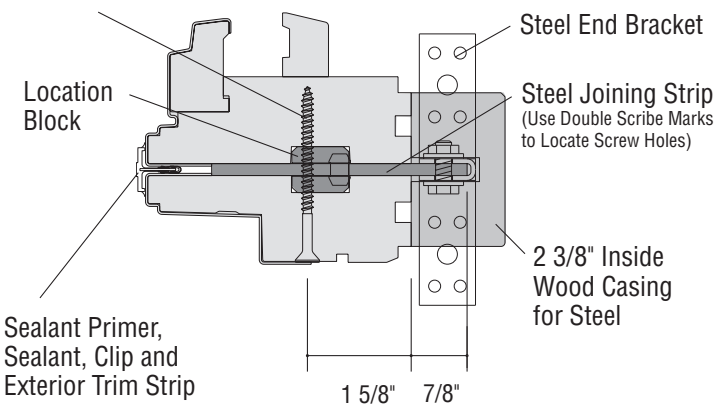
Circle Top™ to Circle Top
Horizontal or Vertical Join

#10 x 2 1/2" Screws
(Screw Pack RMB1)



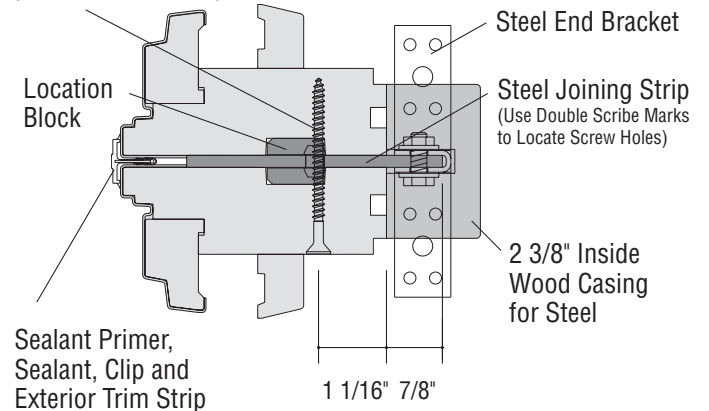
Circle Top to Casement - Vertical Join
Circle Top to Awning - Horizontal Join

#10 x 2 3/4" Screws
(Screw Pack RMC1)

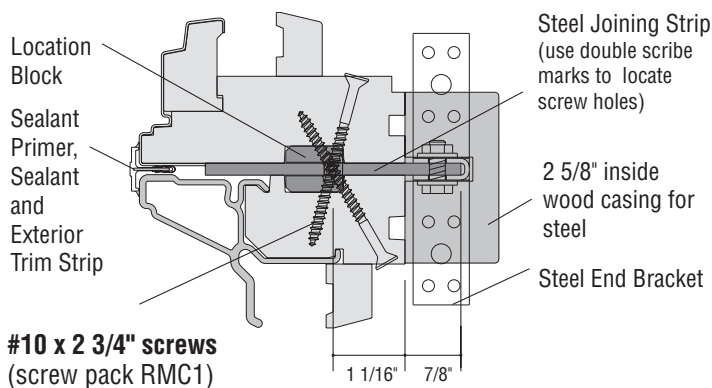


Casement/Awning Picture Window to Casement
- Horizontal Join

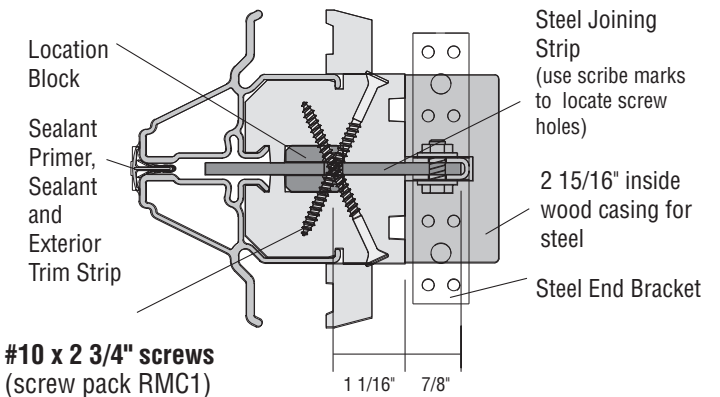
#10 x 2 3/4" Screws
(Screw Pack RMC1)



Casement/Awning Picture Window to Casement/Awning Picture Window
Horizontal or Vertical Join



Casement/Awning Picture Window to Specialty
- Horizontal or Vertical Join



Specialty to Specialty - Horizontal or Vertical Join

8. Assemble Combination

- Remove *Inside Stops* from jambs to be joined using a small pry bar and wood block.

⚠ CAUTION

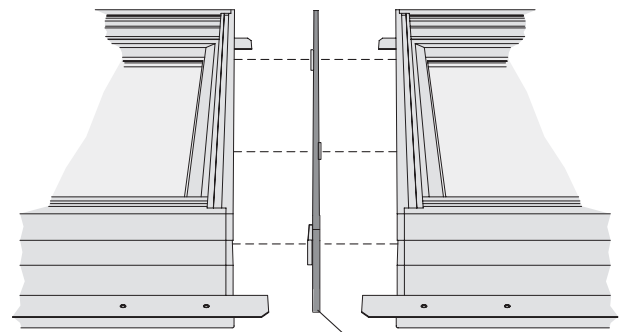
Side Stop on lock side of tandem lock on Casement Units has an underlying lock mechanism. Use caution when removing Side Stop on Lock side to avoid damage to lock mechanism and/or Side Stop.

- Position *Steel Joining Strip* between jambs, centering the *Steel Joining Strip* from each end. Clamp jambs together firmly.
- Drill 1/8" holes at 8" intervals and on alternating sides through side jambs. Use scribe marks on *Steel Joining Strip* to locate holes. Secure through holes with appropriate length screws provided in screw pack.

⚠ WARNING

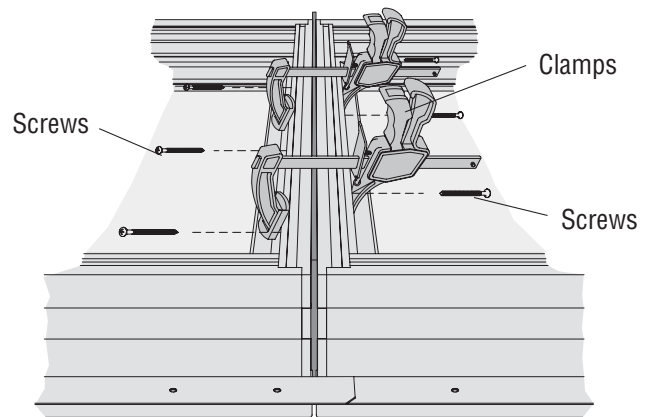
Windows and doors can be heavy. Use safe lifting techniques and a reasonable number of people with enough strength to lift, carry and install window and door products to avoid injury and/or product damage.

- Replace *Inside Stops* and carefully turn combination over exterior side up.



Steel Joining Strip

Interior Sides Up



9. Apply Gusset Plates

⚠ CAUTION

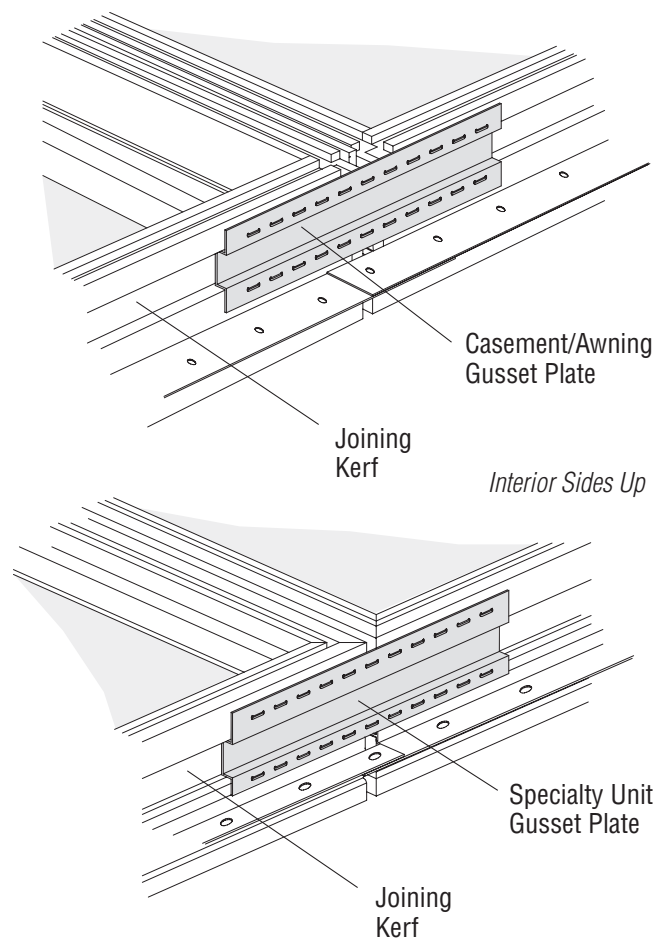
Gusset Plates are required at all joins around perimeter of combinations not having reinforced joining. Gusset Plates are provided in Andersen's Non-Reinforced Joining Kits.

Casement, Awning, and Circle Top Windows

- Position Casement/Awning *Gusset Plates*, into the joining kerf on all joins around perimeter of combination.
- Secure with 5/8" nails or staples.

Specialty Windows

- Position the Specialty Unit *Gusset Plates*, thin edge toward exterior on all joins around perimeter of combination.
- Secure with 5/8" nails or staples.

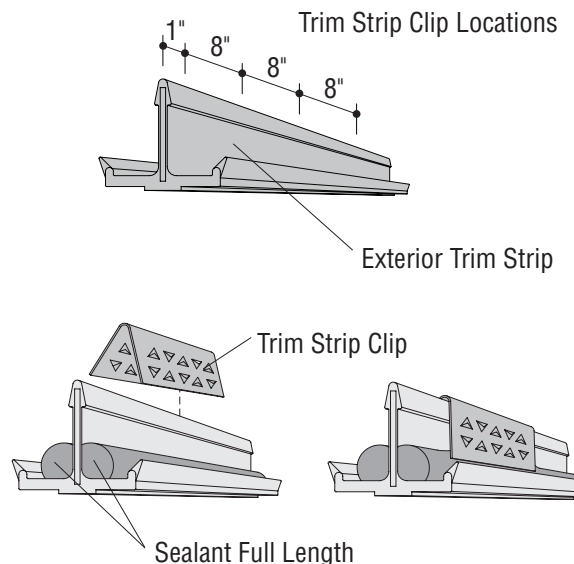


10. Prepare Exterior Trim Strip

⚠ CAUTION

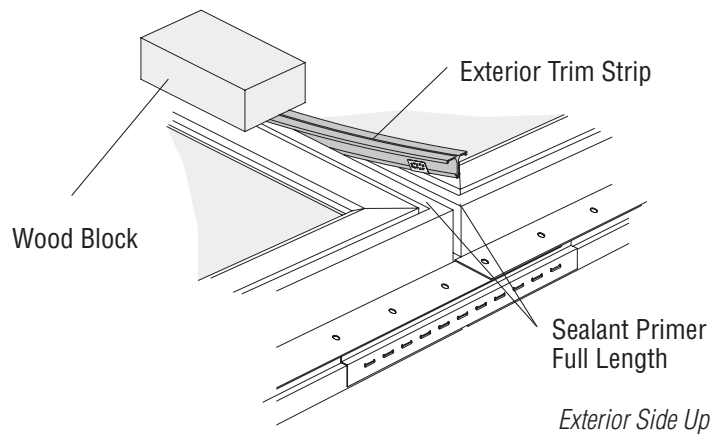
If combination has vertical and horizontal joins, Vertical Exterior Trim Strips must run continuously and should be applied first. Fill voids at intersections with sealant and butt Horizontal Exterior Trim Strips tightly against Vertical Exterior Trim Strips. Failure to do so may allow water infiltration leading to product damage.

- Cut *Exterior Trim Strip* to length, making sure that both unit and *Trim Strip* contact surfaces are clean.
- Apply a 1/8" diameter bead of sealant to both sides of *Exterior Trim Strip*.
- Apply *Trim Strip Clips* to *Exterior Trim Strip*. Locate *Trim Strip Clips* 1" from each end and space remaining clips at 8" intervals.



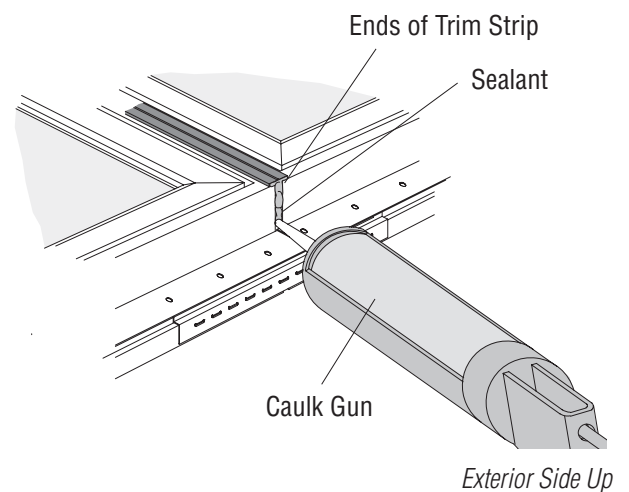
11. Apply Exterior Trim Strip

- Position *Exterior Trim Strip* in combination making sure both ends are flush with end of units.
- Apply a light coating of sealant primer to all sealant contact surfaces on unit frame with a stiff brush. Allow primer to dry until all solvent evaporates.
- Tap *Exterior Trim Strip* until firmly seated, using a hammer and wood block. Clean off any excess sealant squeeze out immediately.
- Seal head and sill at mullion joint with sealant, tool smooth.



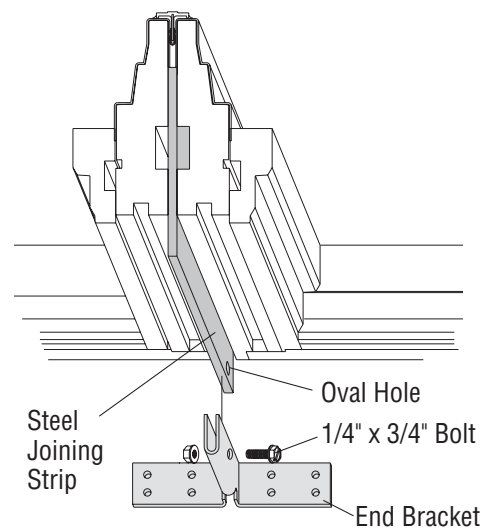
12. Apply Sealant

- Apply sealant to completely fill void between joined units.



13. Apply Brackets

- Slide *End Brackets* onto *Steel Joining Strip*. Position one *End Bracket* over oval hole and the other over hole drilled in **Step 4**.
- Insert 1/4" x 3/4" bolts and fasten loosely. Bolts are fully tightened after unit has been installed.



Interior View

14. Install Combination In Rough Opening

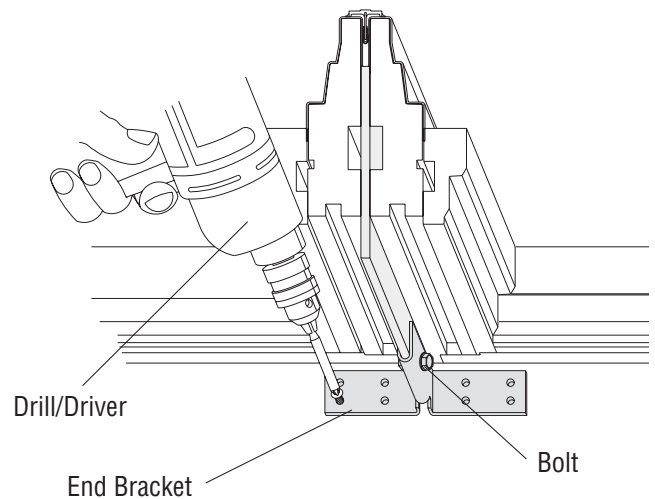
⚠ WARNING

Metal fasteners and components may corrode when exposed to preservative-treated and/or fire-retardant treated lumber. Obtain and use the appropriate metal fasteners and hardware as called out by the installation guide to fasten unit to any rough opening made from preservative-treated and fire-retardant treated lumber. Failure to use the appropriate materials for the installation may cause a failure resulting in injury, property or product damage.

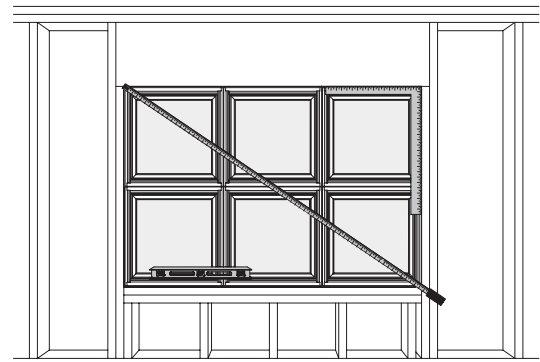
⚠ WARNING

Windows and doors can be heavy. Use safe lifting techniques and a reasonable number of people with enough strength to lift, carry and install window and door products to avoid injury and/or product damage.

- Position combination on shims in rough opening. Use shims as needed around the perimeter to square and level combination. Measurements must be within 1/8". Attach combination by fastening through Installation Flanges.
- Shim and screw through the perimeter jambs into the framing 12" to 16" where possible with extra screws provided.
- Secure all *End Brackets* to framing material with eight (8) #8 x 2 1/2" screws or larger screws (not included). Shim each *End Bracket* as necessary to maintain a correct fit in rough opening. The large hole in each wing of the *End Bracket* can be used for masonry fasteners.
- Tighten *Bolts* in each *End Bracket*.
- If you are using perimeter extension jambs, notch the extension jamb to fit around the *Steel Reinforced Joining Strip*. Predrill and install interior Andersen casing for steel with 8d finish nails. (This will cover the notched area).
- Proceed to drip cap (full width) application step in the unit installation guide for full width drip cap, flashing and installation steps.



Interior View



Combination In Rough Opening

Interior View