

Wood-Ultrex Insert Double Hung

Unit Features	1
Minimum and Maximum Guidelines	3
Certified Sizes and Ratings	4
Egress Formulas	5
Measurement Conversions	6
Measurement Conversions - Field Measurement	7
Mulling Guidelines	8
Section Details: Operating (Interior Install)	9
Section Details: Operating (Exterior Install)	10
Section Details: Picture/Transom (Interior Install)	11
Section Details: Picture/Transom (Exterior Install)	12
Section Details: Mullions	13
Section Details: Frame Expander	14
Divided Lite Options	15

Wood-Ultrex Insert Double Hung

Unit Features

Integrity Wood-Ultrex Insert Double Hung: ITIDH

Integrity Wood-Ultrex Double Hung Picture: ITIDHP

Integrity Wood-Ultrex Double Hung Transom: ITIDHT

Frame and Sash:

- The frame and sash exteriors are made of Ultrex® and meets all the requirements of AAMA 624-10.
- Exterior colors: Stone White, Pebble Gray, Bronze, Evergreen, Cashmere, or Ebony.
- The interior is non finger-jointed pine, kiln dried to a moisture content of 6-12% at time of fabrication. Water-repellent, preservative treated in accordance with WDMA I.S.4.
- Interior wood is available as Pine bare wood or, factory-applied white, clear, or designer black finishes.

Frame:

- Composite frame thickness is 1 13/16", (46). Frame width is 3 1/4", (83). Sloped sill with 8 degree bevel. Non finger-jointed pine interior frame liner is applied to all units. Ultrex is .075" (2) thick. Sloped sill with 8 degree bevel.

Sash:

- Composite sash thickness is 1 17/32" (39). Ultrex is .070" (2) thick. Sash can be replaced but cannot be re-glazed.

Hardware:

- The balance system is a coil spring block and tackle system, with nylon shoe and zinc locking clutch.
- Both sash tilt into the room for cleaning or removal for painting without removing the screen.
- High-pressure zinc die cast check rail lock and keeper.
- Lock employs a cam-lock mechanism.
 - Color: Almond Frost, White, or Matte Black. Optional Bright Brass, Oil Rubbed Bronze, and Satin Nickel.
- Each sash employs spring loaded tilt latches to allow for easy tilting or sash.
- On units 42 3/32" (1069) and wider, two locks are mounted.
- Optional factory applied Window Opening Control Device is available on all sizes. A system consisting of an acetal lever housed in an acetal shell on each stile of the top sash. This device works in accordance to ASTM F2090-17 standard specification for window fall prevention devices with emergency escape.
 - Color: White, Beige, or Black.
- Optional field-applied flush-mounted, die-cast sash lift.
 - Available Colors: Almond Frost, White, Bright Brass, Satin Nickel, Oil Rubbed Bronze, and Matte Black finishes.

Installation:

- Operator
 - Secure the jambs with minimum of two #8 x 3" pan head screws.
 - Maximum spacing of jambs not to exceed 3/16".
 - Secure the head jamb with either zero or two #8 x 3" pan head screws.
- Picture:
 - Secure the jambs with minimum of two #8 x 3" pan head screws.
 - Maximum spacing of jambs not to exceed 3/16".
 - Secure the head jamb with two #8 x 3" pan head screws.

Glazing:

- All units are manufactured with an 11/16" (17) IG with Low E2, E3, or E1 coatings including argon gas fill.
 - Tripane not available.
- Tempered glass and/or obscure glass, and California Fire glass (annealed exterior and tempered interior glazing configuration) are available as an option.
- All glass is of a select quality complying with ASTM C 1036.
- Insulating glass is manufactured and tested to pass level ASTM E 2190 and is IGCC certified.
- The glazing seal is a silicone bedding on both interior and exterior surfaces utilized in a sandwich style sash.
- STC/OITC values are available for 3.1/3.1 glass.
 - Optional 3.1/4.7 STC/OITC Upgrade glass is available. STC and OITC ratings are tested in accordance with ASTM E 90-09.
 - See the Product Performance chapter for values.

Wood-Ultrex Insert Double Hung

Unit Features Continued

Weather Strip:

- All units are dual weather stripped.
- All weather strip is beige, black, or white in color.
- Jamb weather strip is a robust fabric covered foam weather strip that is inserted into a rigid vinyl jamb carrier and used to seal sash to jambs. An additional jamb weather strip is inserted into Ultrex/wood and seals bottom sash to jamb.
- Parting stop is vinyl with a flexible leaf seal to seal between the header and the upper sash.
- Check rail weather strip is a hollow bulb.
- Bottom rail extension has a hollow bulb weather strip that interfaces against the Ultrex sill and jamb weather strip.
- Picture and transom units is a hollow bulb weather strip that is inserted into rigid vinyl jamb carrier and head jamb carrier to seal sash.

Screen:

- Full screen is standard. Half-screen option is available.
- Roll formed aluminum frame with corner key construction
 - Color to match exterior frame color
- Charcoal color fiberglass (non-corrosive) screen cloth.
- Spring loaded pins for installation.

Removable Interior Grilles:

- Bar: Pine wood, 3/4" (19)
- Available in Pine non finger-jointed bare wood, factory-applied white, clear, and designer black finishes.
- Pattern: Standard rectangular pattern

Interior / Exterior Simulated Divided Lites (SDL):

- Interior bar: 7/8" (22) wide bars
 - Pine non finger-jointed wood, factory-applied white, clear, and designer black finishes
- Exterior bar: 7/8" (22) wide bars Ultrex, finish to match exterior
 - Patterns available: Rectangle, Cottage style cut, 9 lite Prairie cut or 6 lite Prairie for top sash, bottom sash, or both.
- Available with or without aluminum interior spacer bar in airspace.
- ITDHP Only: Simulated check rail option: 2 11/32" (60).
 - Patterns available: simulated rail in standard center or customer specified location with 7/8" (22) patterns above, below or both in patterns of rectangular equal lite or prairie lite cut.
- SDL spacer bars are available.

Grilles-Between-The-Glass (GBG):

- 23/32" (18) contoured aluminum bar placed between two panes of glass
- Pattern: Standard rectangular pattern, 6 or 9 lite Prairie cut, or Cottage style cut
 - Exterior colors: Stone White, Pebble Gray, Bronze, Evergreen, Cashmere, or Ebony
 - Interior Colors: White, Bronze, or Black.

NOTE: NFRC values are now located on www.marvin.com.

Wood-Ultrex Insert Double Hung

Minimum and Maximum Guidelines

Minimum and Maximum IO Guidelines										
Unit Type	Min IO Width		Min IO Height		Max IO Width		Max IO Height		Glass Size	
	in	mm	in	mm	in	mm	in	mm	Sq. Feet	Sq. Meters
ITIDH	18 3/8	(467)	28 1/8	(714)	54 3/8	(1381)	84 1/4	(2140)	26 3/64	2.420
ITIDHT	18 3/8	(467)	16 1/8	(410)	62 3/8	(1584)	24 1/4	(616)	7 3/16	0.668
ITIDHP	18 3/8	(467)	23 5/8	(600)	58 3/8	(1483)	84 1/4	(2140)	28 41/64	2.661
ITIDHP	18 3/8	(467)	23 5/8	(600)	62 3/8	(1584)	80 1/4	(2038)	29 1/4	2.717
ITIDH-C*	18 3/8	(467)	36 1/8	(918)	54 3/8	(1381)	68 1/4	(1734)	23 11/32	2.169
ITIDH-RC**	18 3/8	(467)	36 1/8	(918)	54 3/8	(1381)	68 1/4	(1734)	23 11/32	2.169

*NOTE: Special Size Cottage and Reverse Cottage Style ITIDH units are available in frame sizes; width of 18 to 54 and height of 36.5 to 68.5. The Height Ratio being .402/.598 (*Cottage Style) or .598/.402 (**Reverse Cottage Style).*

WOOD-ULTREX INSERT DOUBLE HUNG COLLECTION:

Wood-Ultrex Insert Double Hung: ITIDH

Wood-Ultrex Insert Double Hung Transom: ITIDHT

Wood-Ultrex Insert Double Hung Picture: ITIDHP

Wood-Ultrex Insert Double Hung Cottage: ITIDH-C

Wood-Ultrex Insert Double Hung Reverse Cottage: ITIDH-RC

NOTE: Special Sizes are available in 1/64" (0.4) increments, not to exceed the frame size measurement maximum or minimum in the table above.

Wood-Ultrex Insert Double Hung

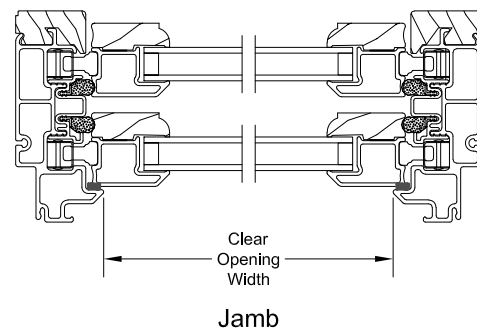
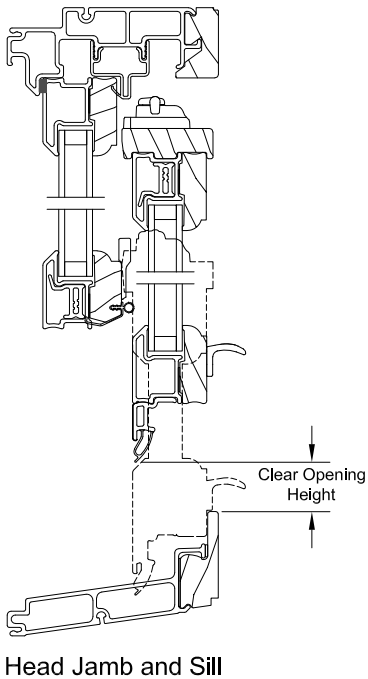
Certified Sizes and Ratings

Product	Air Tested to psf	Water Tested to psf	Certification Rating	Design Pressure (DP)	Max Overall Width		Max Overall Height	
					in	mm	in	mm
ITIDH	1.57	6.06	LC-PG40-H	DP40	42 3/32	(1069)	84	(2134)
ITIDH	1.57	5.3	LC-PG35-H	DP35	54	(1372)	84	(2134)
ITIDHT	1.57	6.06	LC-PG40-FW	DP40	62	(1575)	24 1/2	(622)
ITIDHP	1.57	6.06	LC-PG40-FW	DP40	58	(1473)	84	(2134)
ITIDH	1.57	6.06	LC-PG40-H	DP40	42 3/32	(1069)	84	(2134)
ITIDH-C*	1.57	6.06	LC-PG40-H	DP40	42 3/32	(1069)	68 1/2	(1740)
ITIDH-C*	1.57	5.3	LC-PG35-H	DP35	54	(1372)	68 1/2	(1740)
ITIDH-RC**	1.57	6.06	LC-PG40-H	DP40	42 3/32	(1069)	68 1/2	(1740)
ITIDH-RC**	1.57	5.3	LC-PG35-H	DP35	54	(1372)	68 1/2	(1740)

Wood-Ultrex Insert Double Hung

Egress Formulas

Integrity Insert Double Hung Egress Unit Minimum Opening Conversion From Frame Size		
Minimum Value for Net Clear Opening	Desired Dimension	Formula
20 Inches	Egress Opening Width (Inches)	= Frame OM Width – 3.656
24 Inches	Egress Opening Height (Inches)	= (Frame OM Height/2) – 5.488
5.7 Square Feet	Egress Opening Area (SQFT)	= (Egress Width x Egress Height) / 144



Wood-Ultrex Insert Double Hung

Measurement Conversions

Wood-Ultrex Insert Double Hung Operating Unit						
Unit Measurements		Width		Height		
From	To					
Daylight Opening		in	mm		in	mm
Daylight Opening	Bottom Sash OM	+ 3 1/4	(83)		+ 3 1/4	(83)
Daylight Opening	Top Sash OM	+ 3 1/4	(83)		+ 3 1/4	(83)
Daylight Opening	Glass OM	+ 1 1/16	(27)		+ 1 1/16	(27)
Daylight Opening	Full Screen OM	+ 3 13/16	(97)	X 2	+ 7 9/32	(185)
Daylight Opening Bottom Sash	Half Screen OM	+ 3 13/16	(97)		+ 4 1/32	(102)
Daylight Opening	Grille	order by DLO		order by DLO		
Daylight Opening	Frame OM @ Exterior	+ 6 23/64	(161)	X 2	+ 9 1/8	(232)
Inside Opening		in	mm		in	mm
Inside Opening	Bottom Sash OM	-3 15/32	(88)	÷ 2	-1 1/8	(29)
Inside Opening	Top Sash OM	-3 15/32	(88)	÷ 2	-1 1/8	(29)
Inside Opening	Daylight Opening	-6 47/64	(171)	÷ 2	-4 3/8	(111)
Inside Opening	Glass OM	-5 43/64	(144)	÷ 2	-3 5/16	(84)
Inside Opening	Full Screen OM	-2 29/32	(74)		-1 15/32	(37)
Inside Opening	Half Screen OM	-2 29/32	(74)	÷ 2	-11/32	(09)
Inside Opening	Frame OM @ Interior	-3/8	(10)		-1/4	(06)
Inside Opening	Frame OM @ Exterior	-3/8	(10)		+ 3/8	(10)

Wood-Ultrex Insert Double Hung Transoms/Pictures					
Unit Measurements		Width		Height	
From	To				
Daylight Opening		in	mm	in	mm
Daylight Opening	Sash OM	+ 3 1/4	(83)	+ 3 1/4	(83)
Daylight Opening	Glass OM	+ 1 1/16	(27)	+ 1 1/16	(27)
Daylight Opening	Grille	order by DLO		Order by DLO	
Daylight Opening	Frame OM @ Exterior	+ 6 11/32	(161)	+ 6 13/16	(173)
Inside Opening		in	mm	in	mm
Inside Opening	Sash OM	-3 15/32	(88)	-3 3/16	(81)
Inside Opening	Daylight Opening	-6 23/32	(171)	-6 7/16	(163)
Inside Opening	Glass OM	-5 21/32	(144)	-5 3/8	(137)
Inside Opening	Frame OM @ Interior	-3/8	(10)	-1/4	(06)
Inside Opening	Frame OM @ Exterior	-3/8	(10)	+ 3/8	(10)

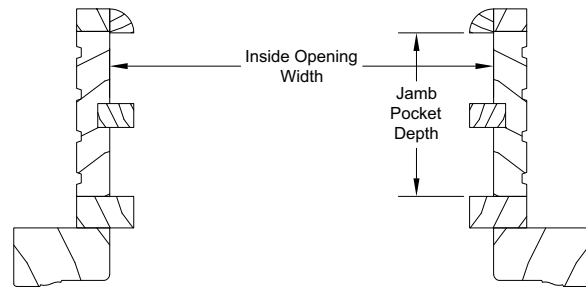
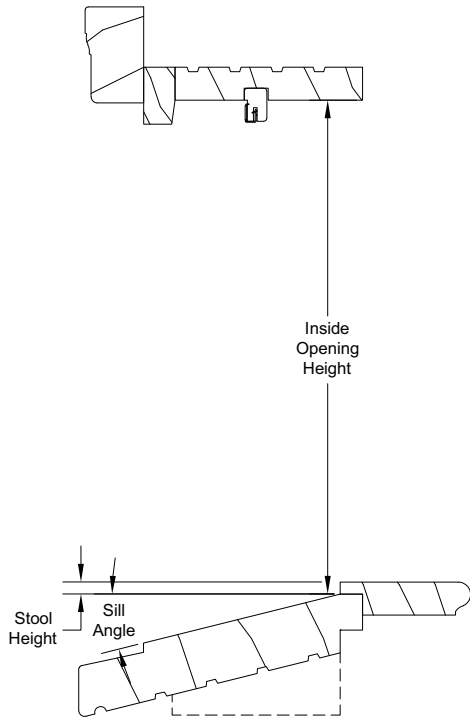
Wood-Ultrex Insert Double Hung		
IO to Frame Size Height		
Existing Sill Angle	Conversions	
8° and greater	3/8	(10)
7°	5/16	(8)
6°	3/16	(5)
5°	1/8	(3)
4°	1/16	(2)
3°	0	(0)
2°	-1/8	(3)
1°	-3/16	(5)
0°	-1/4	(6)

NOTE: All conversions are based off of an existing 8+ degree sill. Please refer to the chart on the right for additional existing angle inside opening to frame size height conversions.

Wood-Ultrex Insert Double Hung

Measurement Conversions - Field Measurement

Conversion from Field Measurement to Frame OM		
Width		
Condition	Formula	
If blind stop width is 1/2 inch or less	ITIDH frame OM width = inside opening width - 0.375	
Height		
Condition	Type of Sill	Formula
If old sill angle is 8 degrees or more but less than 14 degrees	8 degree bottom sill	ITIDH frame OM height = inside opening height + 0.375



Insert Double Hung		
IO to Frame Size Height		
Existing Sill Angle	Conversions	
8° and greater	3/8	(10)
7°	5/16	(8)
6°	3/16	(5)
5°	1/8	(3)
4°	1/16	(2)
3°	0	(0)
2°	- 1/8	(3)
1°	- 3/16	(5)
0°	- 1/4	(6)

Wood-Ultrex Insert Double Hung

Mulling Guidelines

Multiple assemblies can be factory mullied: up to 5 units wide by 1 unit high.

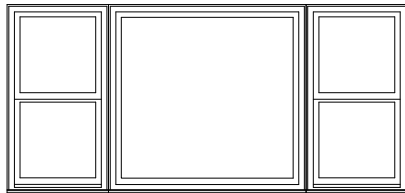
MAXIMUM INSIDE OPENING not to exceed 112 7/8" (2867) x 84 1/4" (2140).

NOTE: Field mulling beyond the above limitations is not recommended.

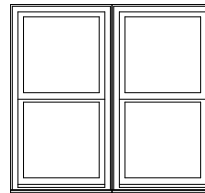
Calculating Total Inside Opening for Assemblies

- **WIDTH: ADD Frame Widths + 3/8" (10)**

- Tolerance = 3/16" (10) from frame to Inside Opening at left and right jamb.



3 Units Wide 1 Unit High

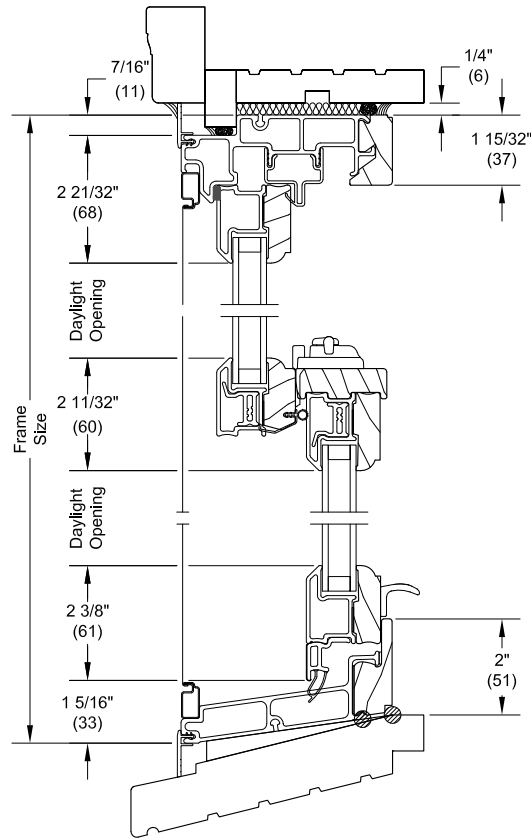


2 Units Wide 1 Unit High

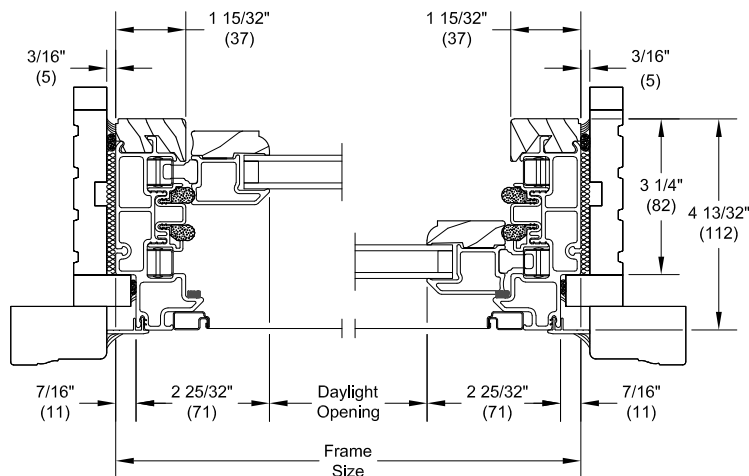
Wood-Ultrex Insert Double Hung

Section Details: Operating (Interior Install)

Scale: 3" = 1' 0"



Head Jamb and Sill
 8 Degree Bevel Sill
 Installed in Existing Frame

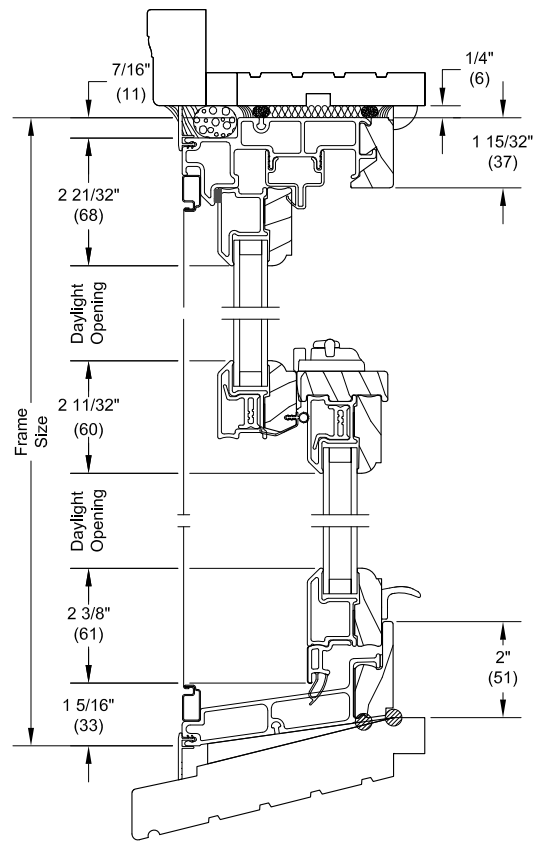


Jamb
 Installed in Existing Frame

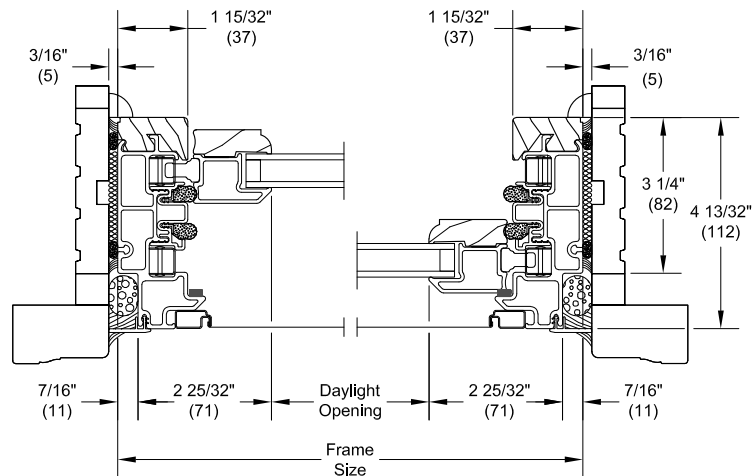
Wood-Ultrex Insert Double Hung

Section Details: Operating (Exterior Install)

Scale: 3" = 1' 0"



Head Jamb and Sill
8 Degree Bevel Sill
Installed in Existing Frame

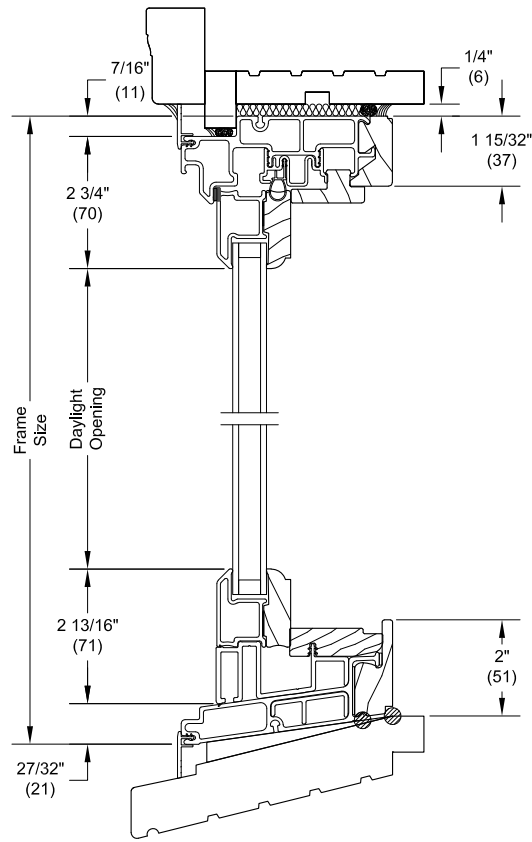


Jamb
Installed in Existing Frame

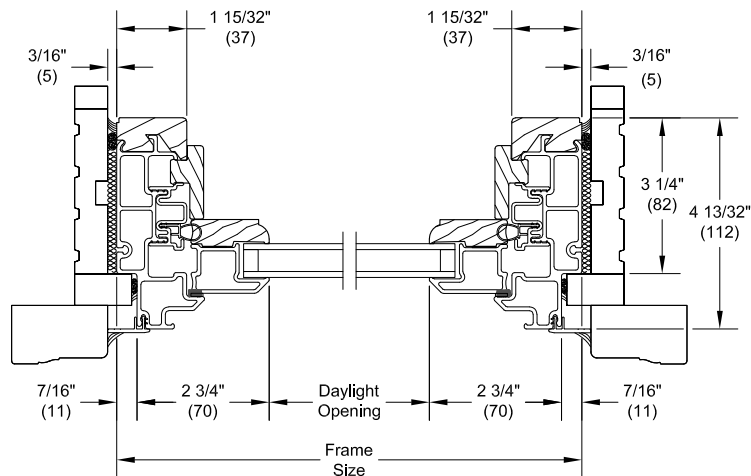
Wood-Ultrex Insert Double Hung

Section Details: Picture/Transom (Interior Install)

Scale: 3" = 1' 0"



Head Jamb and Sill
 8 Degree Bevel Sill
 Installed in Existing Frame

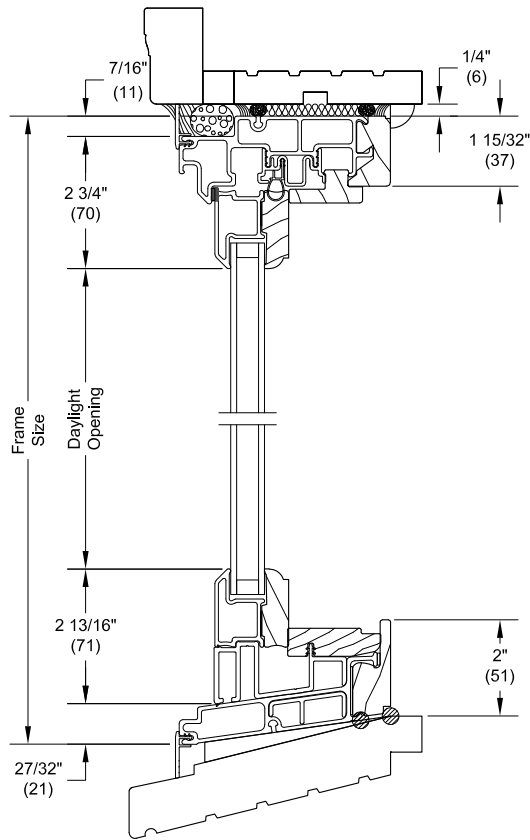


Jamb
 Installed in Existing Frame

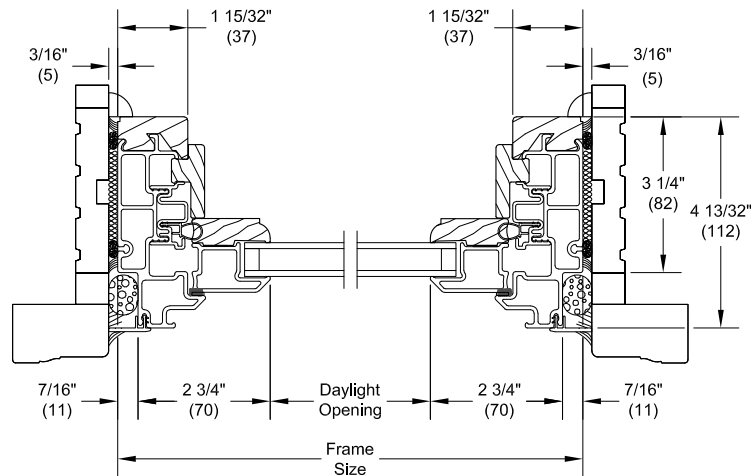
Wood-Ultrex Insert Double Hung

Section Details: Picture/Transom (Exterior Install)

Scale: 3" = 1' 0"



Head Jamb and Sill
 8 Degree Bevel Sill
 Installed in Existing Frame

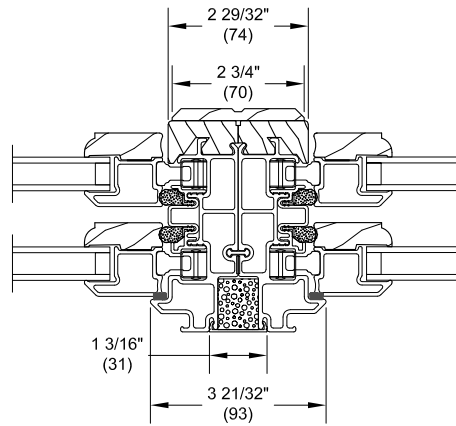


Jamb
 Installed in Existing Frame

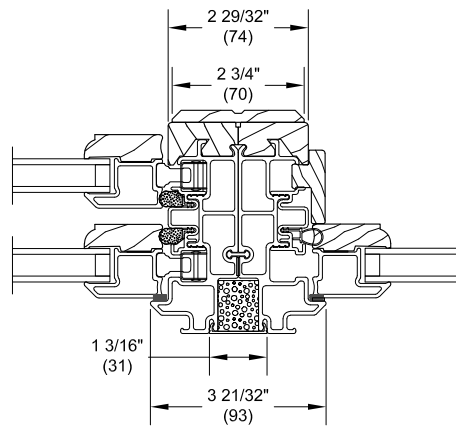
Wood-Ultrex Insert Double Hung

Section Details: Mullions

Scale: 3" = 1' 0"



Operator/Operator
 Wood Ultrex Insert Double Hung

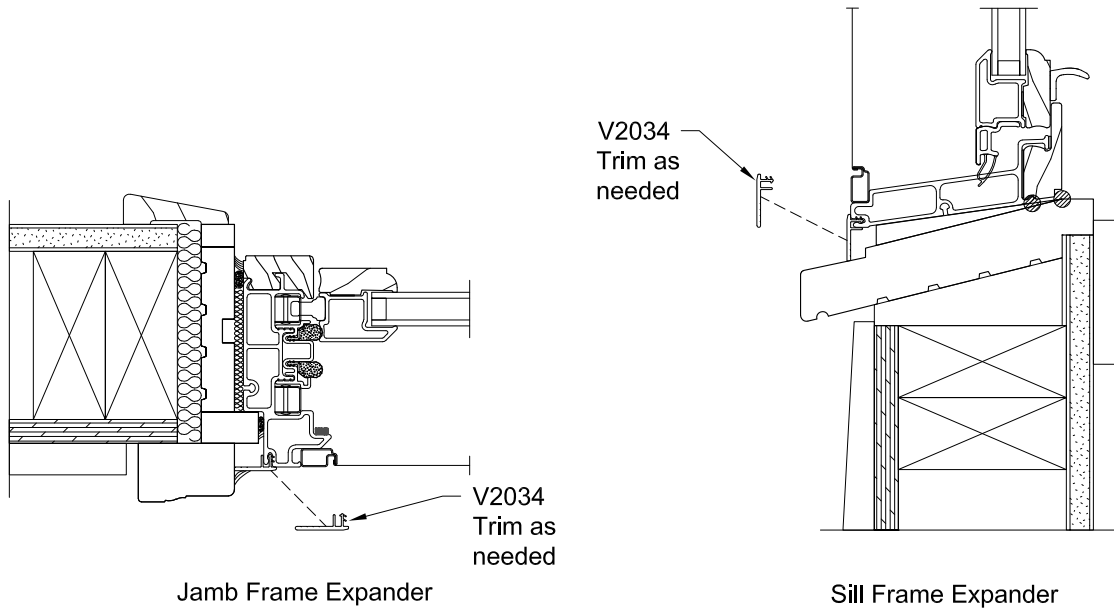


Operator/Picture
 Wood Ultrex Insert Double Hung

Wood-Ultrex Insert Double Hung

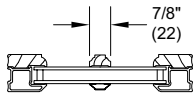
Section Details: Frame Expander

Scale: 3" = 1' 0"

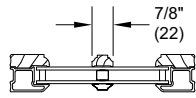


Wood-Ultrex Insert Double Hung

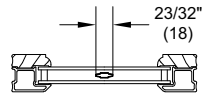
Divided Lite Options (Not to scale)



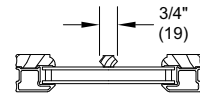
Wood SDL Without Spacer Bar



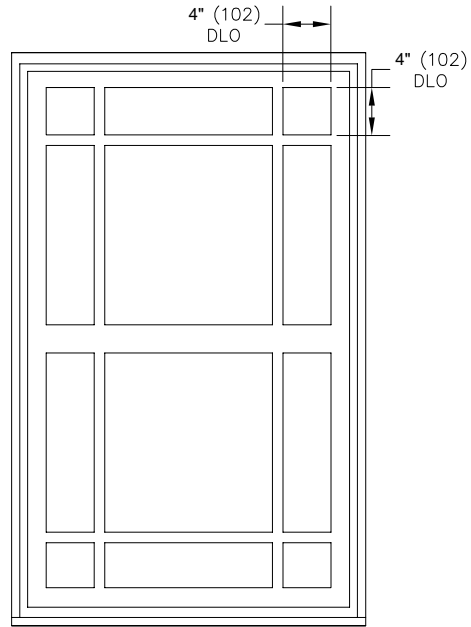
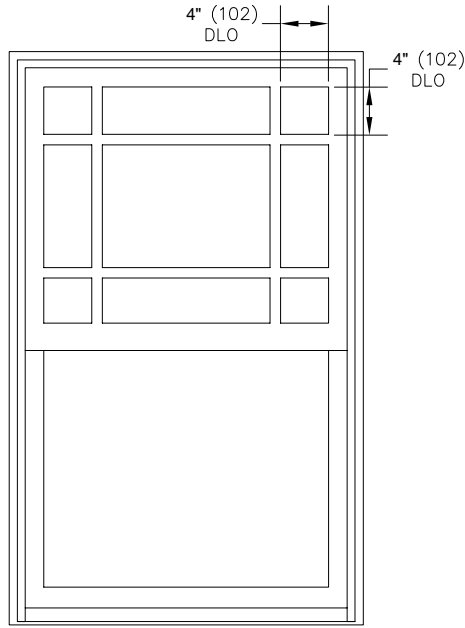
Wood SDL With Spacer Bar



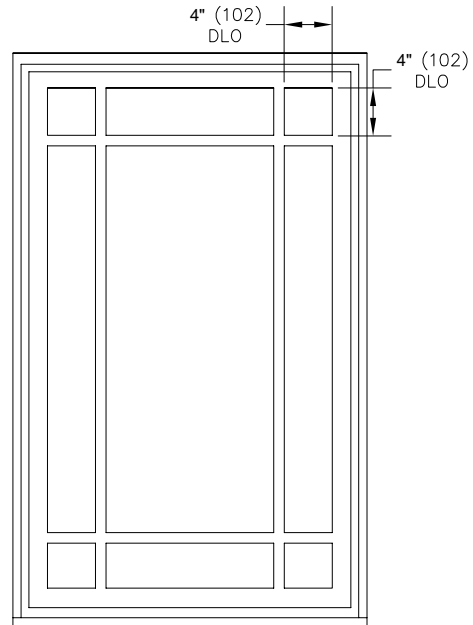
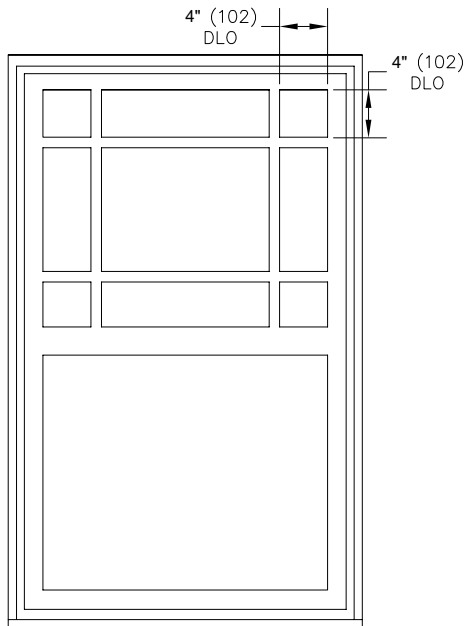
Aluminum Grille Between Glass



Wood Removable Grille



*Optional 6 lite Prairie cut for GBG or SDL



*Optional 9 lite Prairie cut for GBG or SDL

NOTE: 4" (102) DLO lite cut minimum for 7/8" (22) pattern

Wood-Ultrex Insert Double Hung

Divided Lite Options

Insert Double Hung SDL, GBG, Grille Equal Lite Cut						
Product	Width			Height		
	Frame Width		Lite Cut Pattern	Frame Height		Lite Cut Pattern
	in	mm		in	mm	
ITIDH	18	(457)	2W	28 1/2	(724)	2H
	26 3/32	(663)	3W	72 1/2	(1842)	3H
	38 3/32	(968)	4W			
	50 3/32	(1272)	5W			
ITIDHP	18	(457)	2W	16 1/2	(419)	1H
	26 3/32	(663)	3W	24 1/2	(622)	2H
	38 3/32	(968)	4W	28 1/2	(724)	4H
	50 3/32	(1272)	5W	72 1/2	(1842)	6H
ITIDH-C*	18	(457)	2W	TOP SASH		2H
	26 3/32	(663)	3W			
	38 3/32	(968)	4W	BOTTOM SASH		3H
	50 3/32	(1272)	5W			
ITIDHP-RC**	18	(457)	2W	TOP SASH		3H
	26 3/32	(663)	3W			
	38 3/32	(968)	4W	BOTTOM SASH		2H
	50 3/32	(1272)	5W			

*ITIDH-C (Cottage Style) and **ITIDH-RC (Reverse Cottage Style) units are available in frame heights of 36 1/2" to 68 1/2" only. Sash ratio is .402/.598 for Cottage Style units and .598/.402 for Reverse Cottage Style units.

NOTES:

- When frame width or height are between two sizes, refer to the smaller size shown for the default lite cut pattern.
- Wood Grilles for special size units will default to the next smaller standard size lite pattern. Wood Grilles are not available in lite patterns other than the Wood Grille patterns.
- Rectangle GBGs for special size units will default to the next smaller standard size lite pattern. Also available will be Prairie patterns, Cottage patterns, and customer specified equal rectangular lite patterns.
- Rectangular SDL for special size units will default to the next smaller standard size lite pattern. Also available will be Prairie patterns, Cottage patterns, and customer specified equal rectangular lite patterns.
- Prairie GBG and SDL available in 9 lite and 6 lite top, bottom, left, and right patterns.
- Cottage GBGs and SDL for special size units will default to the next smaller standard size lite pattern. Cottage GBGs and SDL are also available in customer selected lite patterns.
- Maximum number of lites wide and high for equal lite SDL option is 11 lites.
- Minimum DLO measurement for equal lite SDL option is 4" (102) and will be validated by OMS.
- Minimum DLO measurement for equal lite GBG option is 3" (76) and will be validated by OMS.
- Standard DLO measurement for Prairie GBG and SDL options is 4" (102). Special DLO corners are n/a.
- Standard DLO height measurement for Cottage SDL option is 10" (254). Minimum DLO height is 8" (203) for one high pattern. Minimum DLO height is 4" (102) for two high patterns.
- Standard DLO height measurement for Cottage GBG option is 10" (254). Minimum DLO height is 3" (76) for one and two high patterns.
- Simulated Rail: Rectangular, Prairie 6-Lite and 9-Lite SDL patterns are available with Simulated Rail.
- Simulated Rail: Custom ratio and specified DLO are available with Simulated Rail and will be validated by OMS.