



Product Selection Guide

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Document Navigation Tips:

Items listed in the table of contents above are active links that will take you to the corresponding page.
The Pella logo on each page is a link back to this table of contents.
Bookmarks are also included in this PDF document and are available as an additional navigation option.

Supporting documents for this product:

Test Reports:

https://media.pella.com/professional/adm/CertificationReports/Test_Reports_IMP.pdf?utm_source=pdfdoc

CSI Specs (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Fiberglass-CSI_Specs/08572_SH.rtf?utm_source=pdfdoc

AIA Masterspec (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Fiberglass-CSI_Specs/085413_fl.doc?utm_source=pdfdoc

Detailed Product Description (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Fiberglass/F2-SH.rtf?utm_source=pdfdoc

Size Tables (requires appropriate CAD software to read and use):

http://media.pella.com/professional/adm/Fiberglass/IMP-SH-Elev_D.dwg?utm_source=pdfdoc

CAD cross sections (requires appropriate CAD software to read and use):

https://media.pella.com/professional/adm/Fiberglass/IMP-SH-Detail_D.dwg?utm_source=pdfdoc

3D & BIM (requires appropriate software to read and use):

https://media.pella.com/professional/adm/RevitFiles/Imp-Revit/Window-Single_Hung-Pella-Impervia.zip?utm_source=pdfdoc

Sketchup (requires appropriate software to read and use):

https://media.pella.com/professional/adm/Fiberglass/PellaSKP_Impervia_Single-Hung.zip?utm_source=pdfdoc

Combination Recommendations:

https://media.pella.com/professional/adm/Fiberglass/F2_Combinations.pdf?utm_source=pdfdoc

Installation Details:

https://media.pella.com/professional/adm/Fiberglass/Pella-Impervia_InstallationDetails.pdf?utm_source=pdfdoc

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Impervia® Single-Hung Windows

Size and Performance Data

	Block Frame	Integral Nailing Fin	Flange Frame
Sizes			
Standard Vent	●	●	●
Standard Fixed	●	●	●
Standard Fixed Companion	●	●	●
Special Sizes Available	●	●	●
Performance₁			
Meets or Exceeds AAMA / WDMA Ratings	H-LC30 – H-LC50 Hallmark Certified	H-LC30 – H-LC50 Hallmark Certified	H-LC30 – H-LC50 Hallmark Certified
Air Infiltration (cfm / ft ² of frame @ 1.57 psf wind pressure)	0.10	0.10	0.10
Water Resistance	4.6 - 7.5 psf	4.6 - 7.5 psf	4.6 - 7.5 psf
Design Pressure	30 - 50 psf	30 - 50 psf	30 - 50 psf
Other Performance Criteria			
Forced Entry Resistance Level (Minimum Security Grade) ₂	40	40	40
Operating Force (lb) Initiate Motion / Maintain Motion (of Hallmark tested size and glazing) ₃	16 / 11 for units with sash ≤ 12 ft ² 21 / 30 for units with sash > 12 ft ²		
Maximum Locking Force (lb) Lock / Unlock	6 / 6	6 / 6	6 / 6

Sound Transmission Class and Outdoor-Indoor Transmission Class

Frame Size Tested ⁴	Glazing System			STC Rating	OITC Rating
	Overall Glazing Thickness	Exterior Glass Thickness	Interior Glass Thickness		
SINGLE-HUNG					
47-1/2" x 59-1/2"	11/16"	2.5mm	2.5mm	26	22
47-1/2" x 59-1/2"	11/16"	3mm	5mm	31	26
47-1/2" x 59-1/2"	11/16"	3mm	6mm PVB Laminated	32	27

(1) Performance stated is for single units only.

Composite units are not AAMA / WDMA performance certified. Pella Impervia composites are engineered to meet performance class and grade shown in the design data tables.

(2) The higher the level, the greater the product's ability to resist forced entry.

(3) Glazing configurations may result in higher operational forces

(4) ASTM E 1425 defines standard sizes for acoustical testing. Ratings achieved at that size are representative of all sizes of the same configuration.



Impervia® Single-Hung Windows

Features and Options

	Block Frame	Integral Nailing Fin	Flange Frame
Glazing			
Glazing Type			
Dual-pane Insulating Glass	S	S	S
Insulated Glass Options / Low-E Types			
Clear Insulating Glass (no Low-E coating)	S	S	S
Advanced Low-E Insulating Glass	O	O	O
SunDefense™ Low-E Insulating Glass	O	O	O
SunDefense+ Low-E Insulating Glass	O	O	O
AdvancedComfort Low-E Insulating Glass	O	O	O
NaturalSun Low-E Insulating Glass	O	O	O
NaturalSun+ Low-E Insulating Glass	O	O	O
Additional Glass Options			
Annealed Glass	S	S	S
Tempered Glass	O	O	O
Noise reduction glass (3/5mm, 4/6mm combinations)	O	O	O
Noise reduction laminated glass (non-impact)	O	O	O
Tinted glass (Bronze, Gray, Green) Advanced Low-E	O	O	O
Obscure Glass ¹	O	O	O
Gas Fill / High Altitude			
Argon	S	S	S
High Altitude	O	O	O
High Altitude with argon	O	O	O
Exterior / Interior Factory Pre-finish Colors			
Powder-Coat White	S	S	S
Powder-Coat Brown, Black, Tan or Morning Sky Gray	O	O	O
Powder-Coat Dual-color (Brown, Black, Tan or Morning Sky Gray exterior with White interior)	O	—	O
Hardware			
Match interior finish	S	S	S
Satin Nickel, Bright Brass or Oil-Rubbed Bronze	O	O	O
Sash Locks			
Self-aligning sash lock	S	S	S
Screens			
InView™ Screens	O	O	O
Grilles			
Grilles-Between-the-Glass			
3/4" Contoured	O	O	O
Patterns			
Traditional	O	O	O
Prairie	O	O	O
Top Row	O	O	O
Special	O	O	O

S = Standard; O = Optional; (—) = Not available

(1) Contact your local Pella sales representative for current offering.



Impervia® Single-Hung Windows

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown							
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂			
										Zone				ER	Zone		
Vent										N	NC	SC	S	CA			
11/16"	Clear IG	PEL-N-102-01202-00004	2.5	2.5	air	0.47	0.60	0.63	47								
	with grilles-between-the-glass	PEL-N-102-01203-00004				0.47	0.54	0.56	47								
11/16"	Clear IG	PEL-N-102-01202-00002	3	3	air	0.47	0.59	0.62	47								
	with grilles-between-the-glass	PEL-N-102-01203-00002				0.47	0.53	0.55	47								
11/16"	Advanced Low-E IG	PEL-N-102-01294-00004	2.5	2.5	argon	0.30	0.28	0.53	58								
	with grilles-between-the-glass	PEL-N-102-01295-00004				0.30	0.26	0.47	58								
11/16"	Advanced Low-E IG	PEL-N-102-01294-00002	3	3	argon	0.30	0.28	0.53	58								
	with grilles-between-the-glass	PEL-N-102-01295-00002				0.30	0.25	0.47	58								
11/16"	SunDefense™ IG	PEL-N-102-01334-00004	2.5	2.5	argon	0.29	0.21	0.49	59				S				
	with grilles-between-the-glass	PEL-N-102-01335-00004				0.29	0.19	0.44	59				S				
11/16"	SunDefense™ IG	PEL-N-102-01334-00002	3	3	argon	0.29	0.21	0.49	59				S				
	with grilles-between-the-glass	PEL-N-102-01335-00002				0.29	0.19	0.43	59				S				
11/16"	SunDefense+ IG	PEL-N-102-01464-00001	2.5	2.5	argon	0.26	0.21	0.48	47			SC	S				
	with grilles-between-the-glass	PEL-N-102-01465-00001				0.26	0.19	0.43	47			SC	S				
11/16"	SunDefense+ IG	PEL-N-102-01468-00001	3	3	argon	0.26	0.21	0.48	46			SC	S				
	with grilles-between-the-glass	PEL-N-102-01469-00001				0.26	0.19	0.42	46			SC	S				
11/16"	AdvancedComfort Low-E IG	PEL-N-102-01370-00004	2.5	2.5	argon	0.26	0.28	0.52	46								
	with grilles-between-the-glass	PEL-N-102-01371-00004				0.26	0.25	0.46	46								
11/16"	AdvancedComfort Low-E IG	PEL-N-102-01370-00002	3	3	argon	0.26	0.28	0.51	46								
	with grilles-between-the-glass	PEL-N-102-01371-00002				0.26	0.25	0.46	46								
11/16"	NaturalSun Low-E IG	PEL-N-102-01258-00004	2.5	2.5	argon	0.31	0.53	0.60	58								
	with grilles-between-the-glass	PEL-N-102-01259-00004				0.31	0.47	0.54	58								
11/16"	NaturalSun Low-E IG	PEL-N-102-01258-00002	3	3	argon	0.31	0.52	0.60	58								
	with grilles-between-the-glass	PEL-N-102-01259-00002				0.31	0.47	0.53	58								
11/16"	NaturalSun+ Low-E IG	PEL-N-102-01492-00001	2.5	2.5	argon	0.27	0.48	0.59	45								
	with grilles-between-the-glass	PEL-N-102-01493-00001				0.27	0.43	0.52	45								
11/16"	NaturalSun+ Low-E IG	PEL-N-102-01496-00001	3	3	argon	0.27	0.47	0.58	45								
	with grilles-between-the-glass	PEL-N-102-01497-00001				0.27	0.43	0.52	45								
Vent — with Foam Insulation																	
11/16"	Advanced Low-E IG	PEL-N-102-01062-00004	2.5	2.5	argon	0.27	0.28	0.53	59								
	with grilles-between-the-glass	PEL-N-102-01063-00004				0.27	0.26	0.47	59								
11/16"	Advanced Low-E IG	PEL-N-102-01062-00002	3	3	argon	0.27	0.28	0.53	59								
	with grilles-between-the-glass	PEL-N-102-01063-00002				0.27	0.25	0.47	59								
11/16"	SunDefense IG	PEL-N-102-01102-00004	2.5	2.5	argon	0.27	0.21	0.49	59			SC	S				
	with grilles-between-the-glass	PEL-N-102-01103-00004				0.27	0.19	0.44	59			SC	S				
11/16"	SunDefense IG	PEL-N-102-01102-00002	3	3	argon	0.27	0.21	0.49	59			SC	S				
	with grilles-between-the-glass	PEL-N-102-01103-00002				0.27	0.19	0.43	59			SC	S				
11/16"	SunDefense+ IG	PEL-N-102-01576-00001	2.5	2.5	argon	0.24	0.21	0.48	47		NC	SC	S				
	with grilles-between-the-glass	PEL-N-102-01577-00001				0.24	0.19	0.43	47		NC	SC	S				
11/16"	SunDefense+ IG	PEL-N-102-01580-00001	3	3	argon	0.24	0.21	0.48	46		NC	SC	S				
	with grilles-between-the-glass	PEL-N-102-01581-00001				0.24	0.19	0.42	46		NC	SC	S				
11/16"	AdvancedComfort Low-E IG	PEL-N-102-01138-00004	2.5	2.5	argon	0.23	0.28	0.52	46		NC						
	with grilles-between-the-glass	PEL-N-102-01139-00004				0.23	0.25	0.46	46		NC						
11/16"	AdvancedComfort Low-E IG	PEL-N-102-01138-00002	3	3	argon	0.23	0.28	0.51	46		NC						
	with grilles-between-the-glass	PEL-N-102-01139-00002				0.23	0.25	0.46	46		NC						
11/16"	NaturalSun Low-E IG	PEL-N-102-01026-00004	2.5	2.5	argon	0.28	0.53	0.60	58					34	CA		
	with grilles-between-the-glass	PEL-N-102-01027-00004				0.28	0.47	0.54	58								
11/16"	NaturalSun Low-E IG	PEL-N-102-01026-00002	3	3	argon	0.28	0.52	0.60	58								
	with grilles-between-the-glass	PEL-N-102-01027-00002				0.28	0.47	0.53	58								
11/16"	NaturalSun+ Low-E IG	PEL-N-102-01604-00001	2.5	2.5	argon	0.25	0.48	0.59	46	N				35	CA		
	with grilles-between-the-glass	PEL-N-102-01605-00001				0.25	0.43	0.52	46	N							
11/16"	NaturalSun+ Low-E IG	PEL-N-102-01608-00001	3	3	argon	0.25	0.47	0.58	45	N				34	CA		
	with grilles-between-the-glass	PEL-N-102-01609-00001				0.25	0.43	0.52	45	N							

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500.

ENERGY STAR® values are updated to 2023 (version 7) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2020 initiative.

For center-glass values, see the Product Performance section.

Visit www.energystar.gov for Energy Star guidelines.

R-Value = 1/U-Factor

SHGC = Solar Heat Gain Coefficient

VLT % = Visible Light Transmission

CR = Condensation Resistance

ER = Canadian Energy Rating



Impervia® Single-Hung Windows

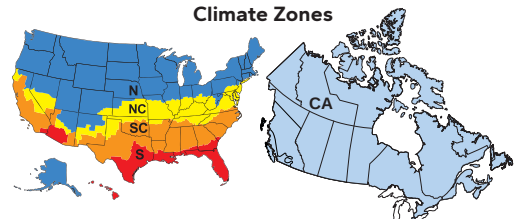
Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown						
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂		
										Zone				ER	Zone	
										Vent — with High Altitude Glazing						
11/16"	(HA) Advanced Low-E IG	PEL-N-102-01274-00004	2.5	2.5	air	0.33	0.29	0.53	55							
	with grilles-between-the-glass	PEL-N-102-01275-00004				0.33	0.26	0.47	55							
11/16"	(HA) Advanced Low-E IG	PEL-N-102-01274-00002	3	3	air	0.33	0.29	0.53	55							
	with grilles-between-the-glass	PEL-N-102-01275-00002				0.33	0.26	0.47	55							
11/16"	(HA) SunDefense IG	PEL-N-102-01314-00004	2.5	2.5	air	0.33	0.21	0.49	55							
	with grilles-between-the-glass	PEL-N-102-01315-00004				0.33	0.19	0.44	55							
11/16"	(HA) SunDefense IG	PEL-N-102-01314-00002	3	3	air	0.33	0.21	0.49	55							
	with grilles-between-the-glass	PEL-N-102-01315-00002				0.33	0.19	0.43	55							
11/16"	(HA) SunDefense+ IG	PEL-N-102-01462-00001	2.5	2.5	air	0.28	0.21	0.48	43			SC	S			
	with grilles-between-the-glass	PEL-N-102-01463-00001				0.28	0.19	0.43	43			SC	S			
11/16"	(HA) SunDefense+ IG	PEL-N-102-01466-00001	3	3	air	0.29	0.21	0.48	42				S			
	with grilles-between-the-glass	PEL-N-102-01467-00001				0.29	0.19	0.42	42				S			
11/16"	(HA) AdvancedComfort Low-E IG	PEL-N-102-01354-00004	2.5	2.5	air	0.29	0.28	0.52	42							
	with grilles-between-the-glass	PEL-N-102-01355-00004				0.29	0.25	0.46	42							
11/16"	(HA) AdvancedComfort Low-E IG	PEL-N-102-01354-00002	3	3	air	0.29	0.28	0.51	42							
	with grilles-between-the-glass	PEL-N-102-01355-00002				0.29	0.25	0.46	42							
11/16"	(HA) NaturalSun Low-E IG	PEL-N-102-01242-00004	2.5	2.5	air	0.34	0.53	0.60	54							
	with grilles-between-the-glass	PEL-N-102-01243-00004				0.34	0.47	0.54	54							
11/16"	(HA) NaturalSun Low-E IG	PEL-N-102-01242-00002	3	3	air	0.34	0.52	0.60	54							
	with grilles-between-the-glass	PEL-N-102-01243-00002				0.34	0.47	0.53	54							
11/16"	(HA) NaturalSun+ Low-E IG	PEL-N-102-01490-00001	2.5	2.5	air	0.29	0.48	0.59	42							
	with grilles-between-the-glass	PEL-N-102-01491-00001				0.29	0.43	0.52	42							
11/16"	(HA) NaturalSun+ Low-E IG	PEL-N-102-01494-00001	3	3	air	0.29	0.47	0.58	41							
	with grilles-between-the-glass	PEL-N-102-01495-00001				0.29	0.42	0.52	41							
Vent — with High Altitude Glazing with Foam Insulation																
11/16"	(HA) Advanced Low-E IG	PEL-N-102-01042-00004	2.5	2.5	air	0.31	0.29	0.53	55							
	with grilles-between-the-glass	PEL-N-102-01043-00004				0.31	0.26	0.47	55							
11/16"	(HA) Advanced Low-E IG	PEL-N-102-01042-00002	3	3	air	0.31	0.29	0.53	55							
	with grilles-between-the-glass	PEL-N-102-01043-00002				0.31	0.26	0.47	55							
11/16"	(HA) SunDefense IG	PEL-N-102-01082-00004	2.5	2.5	air	0.31	0.21	0.49	56				S			
	with grilles-between-the-glass	PEL-N-102-01083-00004				0.31	0.19	0.44	56				S			
11/16"	(HA) SunDefense IG	PEL-N-102-01082-00002	3	3	air	0.31	0.21	0.49	56				S			
	with grilles-between-the-glass	PEL-N-102-01083-00002				0.31	0.19	0.43	56				S			
11/16"	(HA) SunDefense+ IG	PEL-N-102-01574-00001	2.5	2.5	air	0.26	0.21	0.48	43							
	with grilles-between-the-glass	PEL-N-102-01575-00001				0.26	0.19	0.43	43							
11/16"	(HA) SunDefense+ IG	PEL-N-102-01578-00001	3	3	air	0.26	0.21	0.48	42							
	with grilles-between-the-glass	PEL-N-102-01579-00001				0.26	0.19	0.42	42							
11/16"	(HA) AdvancedComfort Low-E IG	PEL-N-102-01122-00004	2.5	2.5	air	0.26	0.28	0.52	43							
	with grilles-between-the-glass	PEL-N-102-01123-00004				0.26	0.25	0.46	43							
11/16"	(HA) AdvancedComfort Low-E IG	PEL-N-102-01122-00002	3	3	air	0.26	0.28	0.51	43							
	with grilles-between-the-glass	PEL-N-102-01123-00002				0.26	0.25	0.46	43							
11/16"	(HA) NaturalSun Low-E IG	PEL-N-102-01010-00004	2.5	2.5	air	0.32	0.53	0.60	55							
	with grilles-between-the-glass	PEL-N-102-01011-00004				0.32	0.47	0.54	55							
11/16"	(HA) NaturalSun Low-E IG	PEL-N-102-01010-00002	3	3	air	0.32	0.52	0.60	55							
	with grilles-between-the-glass	PEL-N-102-01011-00002				0.32	0.47	0.53	55							
11/16"	(HA) NaturalSun+ Low-E IG	PEL-N-102-01602-00001	2.5	2.5	air	0.27	0.48	0.59	42							
	with grilles-between-the-glass	PEL-N-102-01603-00001				0.27	0.43	0.52	42							
11/16"	(HA) NaturalSun+ Low-E IG	PEL-N-102-01606-00001	3	3	air	0.27	0.47	0.58	41							
	with grilles-between-the-glass	PEL-N-102-01607-00001				0.27	0.42	0.52	41							

R-Value = 1/U-Factor
 SHGC = Solar Heat Gain Coefficient
 VLT % = Visible Light Transmission
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 ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500.
 ENERGY STAR® values are updated to 2023 (version 7) criteria.
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 For center-glass values, see the Product Performance section.
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Climate Zones





Impervia® Single-Hung Windows

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂	
										Zone				ER	Zone
Vent — 3mm / 5mm Glazing										N	NC	SC	S	CA	
11/16"	Clear IG	PEL-N-102-01204-00002	3	5	air	0.48	0.58	0.61	43						
	with grilles-between-the-glass	PEL-N-102-01205-00002				0.48	0.52	0.55	43						
11/16"	Advanced Low-E IG	PEL-N-102-01296-00002	3	5	argon	0.31	0.28	0.52	56						
	with grilles-between-the-glass	PEL-N-102-01297-00002				0.31	0.26	0.46	56						
11/16"	SunDefense™ IG	PEL-N-102-01336-00002	3	5	argon	0.30	0.21	0.48	57				S		
	with grilles-between-the-glass	PEL-N-102-01337-00002				0.30	0.19	0.43	57				S		
11/16"	SunDefense+ IG	PENDING	3	5	argon										
	with grilles-between-the-glass	PENDING													
11/16"	AdvancedComfort Low-E IG	PEL-N-102-01372-00002	3	5	argon	0.27	0.28	0.51	44						
	with grilles-between-the-glass	PEL-N-102-01373-00002				0.27	0.25	0.45	44						
11/16"	NaturalSun Low-E IG	PEL-N-102-01260-00002	3	5	argon	0.32	0.52	0.59	56						
	with grilles-between-the-glass	PEL-N-102-01261-00002				0.32	0.46	0.53	56						
11/16"	NaturalSun+ Low-E IG	PENDING	3	5	argon										
	with grilles-between-the-glass	PENDING													
Vent — 3mm / 5mm Glazing with Foam Insulation															
11/16"	Advanced Low-E IG	PEL-N-102-01064-00002	3	5	argon	0.28	0.28	0.52	57						
	with grilles-between-the-glass	PEL-N-102-01065-00002				0.28	0.26	0.46	57						
11/16"	SunDefense IG	PEL-N-102-01104-00002	3	5	argon	0.28	0.21	0.48	57			SC	S		
	with grilles-between-the-glass	PEL-N-102-01105-00002				0.28	0.19	0.43	57			SC	S		
11/16"	SunDefense+ IG	PENDING	3	5	argon										
	with grilles-between-the-glass	PENDING													
11/16"	AdvancedComfort Low-E IG	PEL-N-102-01140-00002	3	5	argon	0.24	0.28	0.51	44		NC				
	with grilles-between-the-glass	PEL-N-102-01141-00002				0.24	0.25	0.45	44		NC				
11/16"	NaturalSun Low-E IG	PEL-N-102-01028-00002	3	5	argon	0.29	0.52	0.59	56						
	with grilles-between-the-glass	PEL-N-102-01029-00002				0.29	0.46	0.53	56						
11/16"	NaturalSun+ Low-E IG	PENDING	3	5	argon										
	with grilles-between-the-glass	PENDING													
Vent — 3mm / 5mm High Altitude Glazing															
11/16"	(HA) Advanced Low-E IG	PEL-N-102-01276-00002	3	5	air	0.35	0.29	0.52	53						
	with grilles-between-the-glass	PEL-N-102-01277-00002				0.35	0.26	0.46	53						
11/16"	(HA) SunDefense IG	PEL-N-102-01316-00002	3	5	air	0.34	0.22	0.48	53						
	with grilles-between-the-glass	PEL-N-102-01317-00002				0.34	0.20	0.43	53						
11/16"	(HA) SunDefense+ IG	PENDING	3	5	air										
	with grilles-between-the-glass	PENDING													
11/16"	(HA) AdvancedComfort Low-E IG	PEL-N-102-01356-00002	3	5	air	0.30	0.28	0.51	40						
	with grilles-between-the-glass	PEL-N-102-01357-00002				0.30	0.25	0.45	40						
11/16"	(HA) NaturalSun Low-E IG	PEL-N-102-01244-00002	3	5	air	0.36	0.51	0.59	52						
	with grilles-between-the-glass	PEL-N-102-01245-00002				0.36	0.46	0.53	52						
11/16"	(HA) NaturalSun+ Low-E IG	PENDING	3	5	air										
	with grilles-between-the-glass	PENDING													
Vent — 3mm / 5mm High Altitude Glazing with Foam Insulation															
11/16"	(HA) Advanced Low-E IG	PEL-N-102-01044-00002	3	5	air	0.32	0.29	0.52	53						
	with grilles-between-the-glass	PEL-N-102-01045-00002				0.32	0.26	0.46	53						
11/16"	(HA) SunDefense IG	PEL-N-102-01084-00002	3	5	air	0.32	0.22	0.48	53				S		
	with grilles-between-the-glass	PEL-N-102-01085-00002				0.32	0.20	0.43	53				S		
11/16"	(HA) SunDefense+ IG	PENDING	3	5	air										
	with grilles-between-the-glass	PENDING													
11/16"	(HA) AdvancedComfort Low-E IG	PEL-N-102-01124-00002	3	5	air	0.27	0.28	0.51	41						
	with grilles-between-the-glass	PEL-N-102-01125-00002				0.27	0.25	0.45	41						
11/16"	(HA) NaturalSun Low-E IG	PEL-N-102-01012-00002	3	5	air	0.33	0.51	0.59	52						
	with grilles-between-the-glass	PEL-N-102-01013-00002				0.33	0.46	0.53	52						
11/16"	(HA) NaturalSun+ Low-E IG	PENDING	3	5	air										
	with grilles-between-the-glass	PENDING													

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500.

ENERGY STAR® values are updated to 2023 (version 7) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2020 initiative.

For center-glass values, see the Product Performance section.

Visit www.energystar.gov for Energy Star guidelines.

R-Value = 1/U-Factor

SHGC = Solar Heat Gain Coefficient

VLT % = Visible Light Transmission

CR = Condensation Resistance

ER = Canadian Energy Rating



Impervia® Single-Hung Windows

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown						
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂		
										Zone	ER	Zone				
Vent — with Tinted Glazing										N	NC	SC	S			CA
11/16"	Bronze Advanced Low-E IG	PEL-N-102-01410-00002	5	3	argon	0.31	0.25	0.34	57							
	with grilles-between-the-glass	PEL-N-102-01411-00002				0.31	0.23	0.30	57					S		
11/16"	Gray Advanced Low-E IG	PEL-N-102-01414-00002	5	3	argon	0.31	0.23	0.29	57					S		
	with grilles-between-the-glass	PEL-N-102-01415-00002				0.31	0.21	0.26	57					S		
11/16"	Green Advanced Low-E IG	PEL-N-102-01418-00002	5	3	argon	0.31	0.28	0.46	57							
	with grilles-between-the-glass	PEL-N-102-01419-00002				0.31	0.26	0.41	57							
Vent — Tinted Glazing with Foam Insulation																
11/16"	Bronze Advanced Low-E IG	PEL-N-102-01178-00002	5	3	argon	0.28	0.25	0.34	57							
	with grilles-between-the-glass	PEL-N-102-01179-00002				0.28	0.23	0.30	57				SC	S		
11/16"	Gray Advanced Low-E IG	PEL-N-102-01182-00002	5	3	argon	0.28	0.23	0.29	57				SC	S		
	with grilles-between-the-glass	PEL-N-102-01183-00002				0.28	0.21	0.26	57				SC	S		
11/16"	Green Advanced Low-E IG	PEL-N-102-01186-00002	5	3	argon	0.28	0.28	0.46	57							
	with grilles-between-the-glass	PEL-N-102-01187-00002				0.28	0.26	0.41	57							
Vent — Tinted High Altitude Glazing																
11/16"	Bronze Advanced Low-E IG	PEL-N-102-01386-00002	5	3	air	0.35	0.26	0.34	54							
	with grilles-between-the-glass	PEL-N-102-01387-00002				0.35	0.23	0.30	54							
11/16"	Gray Advanced Low-E IG	PEL-N-102-01390-00002	5	3	air	0.35	0.24	0.29	54							
	with grilles-between-the-glass	PEL-N-102-01391-00002				0.35	0.22	0.26	54							
11/16"	Green Advanced Low-E IG	PEL-N-102-01394-00002	5	3	air	0.35	0.29	0.46	54							
	with grilles-between-the-glass	PEL-N-102-01395-00002				0.35	0.26	0.41	54							
Vent — Tinted High Altitude Glazing with Foam Insulation																
11/16"	Bronze Advanced Low-E IG	PEL-N-102-01154-00002	5	3	air	0.32	0.26	0.34	54							
	with grilles-between-the-glass	PEL-N-102-01155-00002				0.32	0.23	0.30	54					S		
11/16"	Gray Advanced Low-E IG	PEL-N-102-01158-00002	5	3	air	0.32	0.24	0.29	54							
	with grilles-between-the-glass	PEL-N-102-01159-00002				0.32	0.22	0.26	54					S		
11/16"	Green Advanced Low-E IG	PEL-N-102-01162-00002	5	3	air	0.32	0.29	0.46	54							
	with grilles-between-the-glass	PEL-N-102-01163-00002				0.32	0.26	0.41	54							

R-Value = 1/U-Factor
SHGC = Solar Heat Gain Coefficient
VLT % = Visible Light Transmission
CR = Condensation Resistance
ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500.

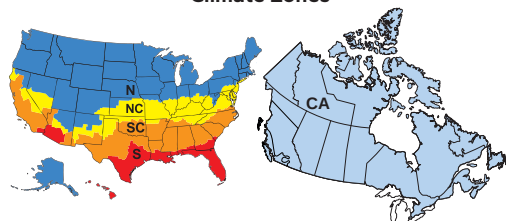
ENERGY STAR® values are updated to 2023 (version 7) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2020 initiative.

For center-glass values, see the Product Performance section.

Visit www.energystar.gov for Energy Star guidelines.

Climate Zones





Impervia® Single-Hung Windows

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ²	
										Zone	ER	Zone			
Vent — with Laminated Glazing										N	NC	SC	S		CA
11/16"	Clear IG	PEL-N-102-01206-00002	3	6	air	0.48	0.56	0.61	42						
	with grilles-between-the-glass	PEL-N-102-01207-00002				0.48	0.50	0.54	42						
11/16"	Advanced Low-E IG	PEL-N-102-01298-00002	3	6	argon	0.31	0.28	0.52	47						
	with grilles-between-the-glass	PEL-N-102-01299-00002				0.32	0.25	0.46	47						
11/16"	SunDefense™ IG	PEL-N-102-01338-00002	3	6	argon	0.31	0.21	0.48	47				S		
	with grilles-between-the-glass	PEL-N-102-01339-00002				0.32	0.19	0.42	47				S		
Vent Laminated Glazing with Foam Insulation															
11/16"	Advanced Low-E IG	PEL-N-102-01066-00002	3	6	argon	0.29	0.28	0.52	50						
	with grilles-between-the-glass	PEL-N-102-01067-00002				0.30	0.25	0.46	50						
11/16"	SunDefense IG	PEL-N-102-01106-00002	3	6	argon	0.28	0.21	0.48	50			SC	S		
	with grilles-between-the-glass	PEL-N-102-01107-00002				0.29	0.19	0.42	50				S		
Vent Laminated High Altitude Glazing															
11/16"	(HA) Advanced Low-E IG	PEL-N-102-01278-00002	3	6	air	0.36	0.28	0.52	47						
	with grilles-between-the-glass	PEL-N-102-01279-00002				0.37	0.26	0.46	47						
11/16"	(HA) SunDefense IG	PEL-N-102-01318-00002	3	6	air	0.36	0.22	0.48	47						
	with grilles-between-the-glass	PEL-N-102-01319-00002				0.37	0.19	0.42	47						
Vent Laminated High Altitude Glazing with Foam Insulation															
11/16"	(HA) Advanced Low-E IG	PEL-N-102-01046-00002	3	6	air	0.34	0.28	0.52	49						
	with grilles-between-the-glass	PEL-N-102-01047-00002				0.35	0.26	0.46	49						
11/16"	(HA) SunDefense IG	PEL-N-102-01086-00002	3	6	air	0.33	0.22	0.48	49						
	with grilles-between-the-glass	PEL-N-102-01087-00002				0.34	0.19	0.42	49						

R-Value = 1/U-Factor
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VLT % = Visible Light Transmission
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ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500.

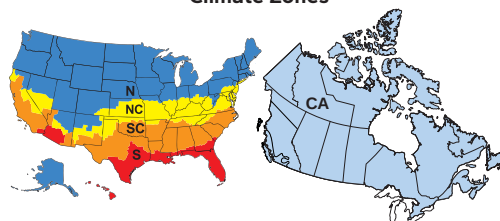
ENERGY STAR® values are updated to 2023 (version 7) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2020 initiative.

For center-glass values, see the Product Performance section.

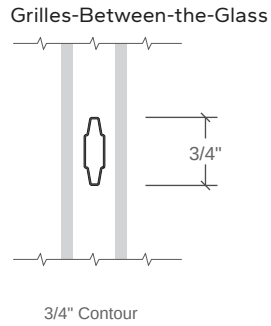
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Climate Zones



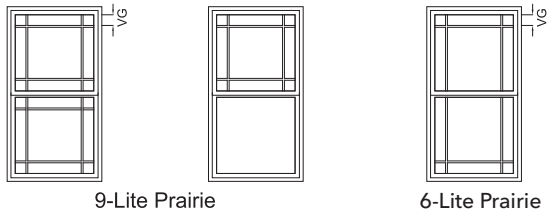


Grille Profiles



Grille Patterns

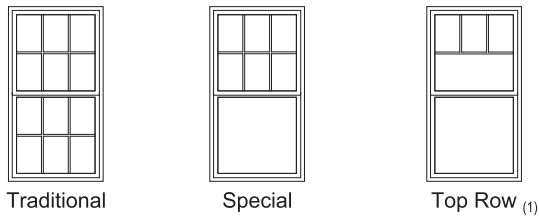
Prairie Lite Patterns



Prairie

- Standard corner lite dimension for Prairie patterns = 4" visible glass (VG).
- Pattern availability may vary depending on size of unit.

Other Patterns



- Pattern availability may vary depending on size of unit.

(1) Standard visible glass to center line of separator bar = 14" or half of total visible glass height, whichever is smaller. Multiple rows are available up to 50% glass size.



Impervia® Single-Hung Windows

Size Tables

Fixed Units

	(457) (445)	(610) (597)	(711) (699)	(762) (749)	(813) (800)	(914) (902)	(1 067) (1 054)	(1 219) (1 207)
Opening	1' 6"	2' 0"	2' 4"	2' 6"	2' 8"	3' 0"	3' 6"	4' 0"
Frame	1' 5 1/2"	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 5 1/2"	3' 11 1/2"
(356) (343)	 1-6/1-2	 2-0/1-2	 2-4/1-2	 2-6/1-2	 2-8/1-2	 3-0/1-2	 3-6/1-2	 4-0/1-2
(457) (446)	 1-6/1-6	 2-0/1-6	 2-4/1-6	 2-6/1-6	 2-8/1-6	 3-0/1-6	 3-6/1-6	 4-0/1-6
(610) (597)	 1-6/2-0	 2-0/2-0	 2-4/2-0	 2-6/2-0	 2-8/2-0	 3-0/2-0	 3-6/2-0	 4-0/2-0

Vent Units

(610) (597)	2' 0"	2' 0"	2' 0"	2' 0"	2' 0"	2' 0"	2' 0"	2' 0"
(762) (749)	2' 6"	2' 6"	2' 6"	2' 6"	2' 6"	2' 6"	2' 6"	2' 6"
(914) (902)	3' 0"	3' 0"	3' 0"	3' 0"	3' 0"	3' 0"	3' 0"	3' 0"
(1 067) (1 054)	3' 6"	3' 6"	3' 6"	3' 6"	3' 6"	3' 6"	3' 6"	3' 6"
(1 219) (1 207)	4' 0"	4' 0"	4' 0"	4' 0"	4' 0"	4' 0"	4' 0"	4' 0"
(1 372) (1 359)	4' 6"	4' 6"	4' 6"	4' 6"	4' 6"	4' 6"	4' 6"	4' 6"
(1 524) (1 511)	5' 0"	5' 0"	5' 0"	5' 0"	5' 0"	5' 0"	5' 0"	5' 0"
(1 676) (1 664)	5' 6"	5' 6"	5' 6"	5' 6"	5' 6"	5' 6"	5' 6"	5' 6"
(1 829) (1 816)	6' 0"	6' 0"	6' 0"	6' 0"	6' 0"	6' 0"	6' 0"	6' 0"
(1 981) (1 969)	6' 6"	6' 6"	6' 6"	6' 6"	6' 6"	6' 6"	6' 6"	6' 6"
	1' 5 1/2"	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 5 1/2"	3' 11 1/2"
	 1-6/2-0	 2-0/2-0	 2-4/2-0	 2-6/2-0	 2-8/2-0			
	 1-6/2-6	 2-0/2-6	 2-4/2-6	 2-6/2-6	 2-8/2-6			
	 1-6/3-0	 2-0/3-0	 2-4/3-0	 2-6/3-0	 2-8/3-0	 3-0/3-0	 3-6/3-0	 4-0/3-0
	 1-6/3-6	 2-0/3-6	 2-4/3-6	 2-6/3-6	 2-8/3-6	 3-0/3-6	 3-6/3-6	 4-0/3-6
	 1-6/4-0	 2-0/4-0	 2-4/4-0	 2-6/4-0	 2-8/4-0	 3-0/4-0	 3-6/4-0	 4-0/4-0
	 1-6/4-6	 2-0/4-6	 2-4/4-6	 2-6/4-6	 2-8/4-6	 3-0/4-6	 3-6/4-6	 4-0/4-6
	 1-6/5-0	 2-0/5-0	 2-4/5-0	 2-6/5-0	 2-8/5-0	 3-0/5-0	 3-6/5-0	 4-0/5-0
	 1-6/5-6	 2-0/5-6	 2-4/5-6	 2-6/5-6	 2-8/5-6	 3-0/5-6	 3-6/5-6	 4-0/5-6
	 1-6/6-0	 2-0/6-0	 2-4/6-0	 2-6/6-0	 2-8/6-0	 3-0/6-0	 3-6/6-0	 4-0/6-0
	 1-6/6-6	 2-0/6-6	 2-4/6-6	 2-6/6-6	 2-8/6-6	 3-0/6-6	 3-6/6-6	 4-0/6-6

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress with High Performance sill adapter kit installed.

(2) Unit meets E1 with High Performance sill adapter kit installed.

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Special size units are available in 1/8" increments. Subtract 1/2" from opening height to calculate vent area for High Performance unit.



Impervia® Single-Hung Windows

Size Tables

Transoms		(356) (343)	(1 067) (1 054)	(1 219) (1 207)	(1 372) (1 359)	(1 524) (1 511)
Opening		1' 2"	3' 6"	4' 0"	4' 6"	5' 0"
Frame		1' 1 1/2"	3' 5 1/2"	3' 11 1/2"	4' 5 1/2"	4' 11 1/2"
Fixed Units	1' 2"	 3-6/1-2	 4-0/1-2	 4-6/1-2	 5-0/1-2	
	1' 6"	 3-6/1-6	 4-0/1-6	 4-6/1-6	 5-0/1-6	
	2' 0"	 3-6/2-0	 4-0/2-0	 4-6/2-0	 5-0/2-0	
	3' 0"	 1-2/3-0	 3-6/3-0	 4-0/3-0	 4-6/3-0	 5-0/3-0
	3' 6"	 1-2/3-6	 3-6/3-6	 4-0/3-6	 4-6/3-6	 5-0/3-6
	4' 0"	 1-2/4-0	 3-6/4-0	 4-0/4-0	 4-6/4-0	 5-0/4-0
	4' 6"	 1-2/4-6	 3-6/4-6	 4-0/4-6	 4-6/4-6	 5-0/4-6
	5' 0"	 1-2/5-0	 3-6/5-0	 4-0/5-0	 4-6/5-0	 5-0/5-0
	5' 6"		 3-6/5-6	 4-0/5-6	 4-6/5-6	 5-0/5-6
	6' 0"		 3-6/6-0	 4-0/6-0	 4-6/6-0	 5-0/6-0

Not to scale.

Special size units are available in 1/8" increments.



Impervia® Single-Hung Windows

Size Tables

Cottage Units

		(457) (445)	(610) (597)	(711) (699)	(762) (749)	(813) (800)	(914) (902)	(1 067) (1 054)	(1 219) (1 207)
Opening		1' 6"	2' 0"	2' 4"	2' 6"	2' 8"	3' 0"	3' 6"	4' 0"
Frame		1' 5 1/2"	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 5 1/2"	3' 11 1/2"
(1 676) (1 664)	5' 6"								
	5' 5 1/2"								
	42"								
(Lower Sash)									
		1-6/5-6 42V	2-0/5-6 42V	2-4/5-6 42V	2-6/5-6 42V	2-8/5-6 42V	3-0/5-6 42V	3-6/5-6 42V	4-0/5-6 42V

Special size Cottage units are available in 1/8" increments on widths only.

Contemporary Units

(1 372) (1 359)	4' 6"	4' 5 1/2"								
	24"	24"								
	(Lower Sash)	(Lower Sash)								
(1 524) (1 511)	5' 0"	4' 11 1/2"	24"	24"	24"	24"	24"	24"	24"	24"
	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)
	1-6/5-0 24V	2-0/5-0 24V	2-4/5-0 24V	2-6/5-0 24V	2-8/5-0 24V	3-0/5-0 24V	3-6/5-0 24V	4-0/5-0 24V	4-0/5-0 24V	4-0/5-0 24V
(1 676) (1 664)	5' 6"	5' 5 1/2"	24"	24"	24"	24"	24"	24"	24"	24"
	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)
	1-6/5-6 24V	2-0/5-6 24V	2-4/5-6 24V	2-6/5-6 24V	2-8/5-6 24V	3-0/5-6 24V	3-6/5-6 24V	4-0/5-6 24V	4-0/5-6 24V	4-0/5-6 24V
(1 829) (1 816)	6' 0"	5' 11 1/2"	24"	24"	24"	24"	24"	24"	24"	24"
	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)
	1-6/6-0 24V	2-0/6-0 24V	2-4/6-0 24V	2-6/6-0 24V	2-8/6-0 24V	3-0/6-0 24V	3-6/6-0 24V	4-0/6-0 24V	4-0/6-0 24V	4-0/6-0 24V
(1 981) (1 969)	6' 6"	6' 5 1/2"	24"	24"	24"	24"	24"	24"	24"	24"
	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)	(Lower Sash)
	1-6/6-6 24V	2-0/6-6 24V	2-4/6-6 24V	2-6/6-6 24V	2-8/6-6 24V	3-0/6-6 24V	3-6/6-6 24V	4-0/6-6 24V	4-0/6-6 24V	4-0/6-6 24V

Not to scale.

Special size Contemporary units are available in 1/8" increments.

See Design Data pages in this section for clear opening dimensions.



Impervia® Single-Hung Windows

Size Tables

Contemporary Units

		(457) (445)	(610) (597)	(711) (699)	(762) (749)	(813) (800)	(914) (902)	(1 067) (1 054)	(1 219) (1 207)
Opening		1' 6"	2' 0"	2' 4"	2' 6"	2' 8"	3' 0"	3' 6"	4' 0"
Frame		1' 5 1/2"	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 5 1/2"	3' 11 1/2"
(1 676) (1 664)	5' 6"	 (Lower Sash) 1-6/5-6 30V	 (Lower Sash) 2-0/5-6 30V	 (Lower Sash) 2-4/5-6 30V	 (Lower Sash) 2-6/5-6 30V	 (Lower Sash) 2-8/5-6 30V	 (Lower Sash) 3-0/5-6 30V	 (Lower Sash) 3-6/5-6 30V	 (Lower Sash) 4-0/5-6 30V
	5' 5 1/2"	 (Lower Sash) 1-6/6-0 30V	 (Lower Sash) 2-0/6-0 30V	 (Lower Sash) 2-4/6-0 30V	 (Lower Sash) 2-6/6-0 30V	 (Lower Sash) 2-8/6-0 30V	 (Lower Sash) 3-0/6-0 30V	 (Lower Sash) 3-6/6-0 30V	 (Lower Sash) 4-0/6-0 30V
	6' 0"	 (Lower Sash) 1-6/6-6 30V	 (Lower Sash) 2-0/6-6 30V	 (Lower Sash) 2-4/6-6 30V	 (Lower Sash) 2-6/6-6 30V	 (Lower Sash) 2-8/6-6 30V	 (Lower Sash) 3-0/6-6 30V	 (Lower Sash) 3-6/6-6 30V	 (Lower Sash) 4-0/6-6 30V
	6' 5 1/2"	 (Lower Sash) 1-6/7-0 30V	 (Lower Sash) 2-0/7-0 30V	 (Lower Sash) 2-4/7-0 30V	 (Lower Sash) 2-6/7-0 30V	 (Lower Sash) 2-8/7-0 30V	 (Lower Sash) 3-0/7-0 30V	 (Lower Sash) 3-6/7-0 30V	 (Lower Sash) 4-0/7-0 30V

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress with High Performance sill adapter kit installed.

(2) Unit meets E1 with High Performance sill adapter kit installed.

See Design Data pages in this section for clear opening dimensions.

Not to scale.

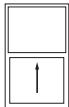
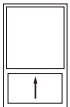
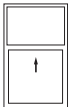
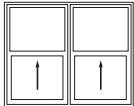
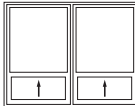
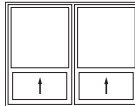
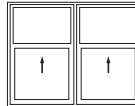
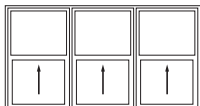
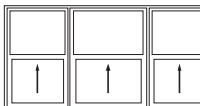
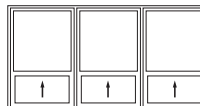
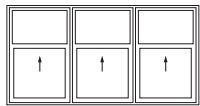
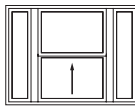
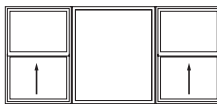
Special size Contemporary units are available in 1/8" increments.

Subtract 1/2" from opening height to calculate vent area for High Performance unit.



Impervia® Single-Hung Windows

Special Sizes and Composite Assemblies

(Equal) Vent	24" Lower Sash Vent	30" Lower Sash Vent	42" Lower Sash Vent
 MINIMUM 1' 5-1/2" W x 1' 11-1/2" H (445 x 609) MAXIMUM 3' 11-1/2" W x 6' 5-1/2" H (1 219 x 1 968)	 MINIMUM 1' 5-1/2" W x 4' 5-1/2" H (445 x 1 359) MAXIMUM 3' 11-1/2" W x 6' 5-1/2" H (1 219 x 1 981)	 MINIMUM 1' 5-1/2" W x 5' 5-1/2" H (457 x 1 664) MAXIMUM 3' 11-1/2" W x 6' 11-1/2" H (1 219 x 2 134)	 MINIMUM 1' 5-1/2" W x 5' 5-1/2" H (445 x 1 664) MAXIMUM 3' 11-1/2" W x 5' 5-1/2" H (1 219 x 1 676)
2-Wide (Equal) Vent Composite	2-Wide 24" Lower Sash Vent Composite	2-Wide 30" Lower Sash Vent Composite	2-Wide 42" Lower Sash Vent Composite
 MINIMUM 2' 11-1/2" W x 1' 11-1/2" H (914 x 609) MAXIMUM 7' 11-1/2" W x 5' 11-1/2" H (3 657 x 1 816)	 MINIMUM 2' 11-1/2" W x 4' 5-1/2" H (914 x 1 359) MAXIMUM 7' 11-1/2" W x 6' 5-1/2" H (2 438 x 1 981)	 MINIMUM 2' 11-1/2" W x 5' 5-1/2" H (914 x 1 664) MAXIMUM 7' 11-1/2" W x 6' 11-1/2" H (2 438 x 2 134)	 MINIMUM 2' 11-1/2" W x 5' 5-1/2" H (914 x 1 676) MAXIMUM 7' 11-1/2" W x 5' 5-1/2" H (2 438 x 1 676)
3-Wide (Equal) Vent Composite	3-Wide (Unequal) Vent Composite	3-Wide 24" Lower Sash Vent Composite	3-Wide 30" Lower Sash Vent Composite
 MINIMUM 4' 5-1/2" W x 1' 11-1/2" H (1 371 x 609) MAXIMUM 8' 9-1/2" W x 6' 5-1/2" H (2 680 x 1 981)	 MINIMUM 4' 5-1/2" W x 1' 11-1/2" H (1 371 x 609) MAXIMUM 8' 9-1/2" W x 6' 5-1/2" H (2 680 x 1 981)	 MINIMUM 4' 5-1/2" W x 4' 5-1/2" H (1 130 x 1 359) MAXIMUM 8' 9-1/2" W x 6' 5-1/2" H (2 680 x 1 981)	 MINIMUM 4' 5-1/2" W x 5' 5-1/2" H (1 371 x 1 664) MAXIMUM 8' 9-1/2" W x 6' 5-1/2" H (2 680 x 1 981) — or — 7' 11-1/2" W x 6' 11-1/2" H (2 426 x 2 133)
3-Wide 42" Lower Sash Vent Composite	Vent with Fixed Flankers Composite	Fixed with Vent Flankers Composite	General Notes: • To convert areas to square meters (m2), multiply square feet by 0.0929. • Rough Opening = Frame Dimension + 1/2". • Keep frame dimensions to the nearest 1/8" increment. • Tempered glass must measure > 18-1/2" diagonally.
 MINIMUM 4' 5-1/2" W x 5' 5-1/2" H (1 371 x 1 664) MAXIMUM 8' 9-1/2" W x 5' 5-1/2" H (2 680 x 1 664)	 MINIMUM 3' 9-1/2" W x 2' 11-1/2" H (1 981 x 914) MAXIMUM Vent: 3' 11-1/2" W x 4' 11-1/2" H (1 219 x 1 524) Fixed: 1' 1-1/2" W x 4' 11-1/2" H (343 x 1 524)	 MINIMUM 4' 1/2" W x 1' 11-1/2" H (1 245 x 610) MAXIMUM 9' 11-1/2" W x 5' 11-1/2" H (3 048 x 1 828) Center Unit Width ≤ 4' 11-1/2"	

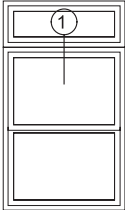
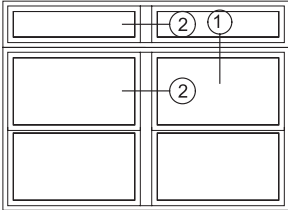
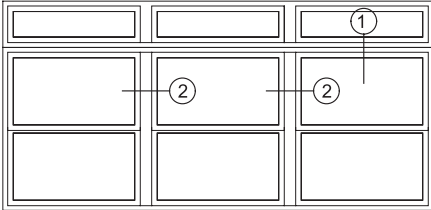
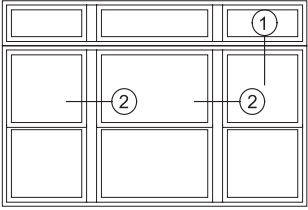
Composite units are not AAMA/WDMA performance certified. Pella Impervia composites are engineered to meet the performance class and grade shown in the Design Data tables.

For special size units, use the performance class and grade for the next larger standard size unit.



Combinations Assemblies

A combination is defined as an assembly formed by two or more separate windows or doors whose frames are mulled together utilizing a combination mullion or reinforcing mullion. See the combinations section for requirements, configurations and size limitations. Consult with your local Pella representative for currently offered factory assembled combinations.

Fixed Over Single-Hung	2-Wide Fixed Over Single-Hung	3-Wide Fixed Over Single-Hung	3-Wide Fixed Over 3-Wide with Unequal Center
			
Minimum 1' 5-1/2" W x 3' 1" H (445 x 940) Maximum 3' 11-1/2" W x 7' 11" H (1 207 x 2 413)	Minimum 2' 11-1/2" W x 3' 1" H (902 x 940) Maximum 7' 11-1/2" W x 7' 11" H (2 426 x 2 413)	Minimum 4' 5-1/2" W x 3' 1" H (1 359 x 940) Maximum 8' 11-1/2" W x 7' 11" H (2 731 x 2 413)	Minimum 4' 5-1/2" W x 3' 1" H (1 359 x 940) Maximum 8' 11-1/2" W x 7' 11" H (2 731 x 2 413)

- ① Joining or Structural Mullion
- ② Integral Mullion

Determining and meeting the structural load requirements and design of the rough opening is the responsibility of the architect or engineer. Window and door frame systems are not designed to support additional elements or components of the building wall system.



Design Data

Miscellaneous Formulas

	Total Glass Height	Actual Glass Width	Actual Vent Glass Height	Actual Fixed Glass Height	Visible Glass Width	Vent Visible Glass Height	Fixed Visible Glass Height
Vent	$FH - 6\text{'}/4''$	$FW - 5\text{'}/8''$	$(FH \div 2) - 3\text{'}/8''$	$TGH - AVGH$	$FW - 6\text{'}/16''$	$(FH \div 2) - 4\text{'}/16''$ or $AVGH - 15/16''$	$AFGH - 15/16''$
Contemporary 2' vent	$FH - 6\text{'}/4''$	$FW - 5\text{'}/8''$	$20\text{'}/58''$	$TGH - AVGH$	$FW - 6\text{'}/16''$	$19\text{'}/116''$	$AFGH - 15/16''$
Contemporary 2'6" vent	$FH - 6\text{'}/4''$	$FW - 5\text{'}/8''$	$26\text{'}/58''$	$TGH - AVGH$	$FW - 6\text{'}/16''$	$25\text{'}/116''$	$AFGH - 15/16''$
Cottage 3'6" vent	$FH - 6\text{'}/4''$	$FW - 5\text{'}/8''$	$38\text{'}/58''$	$TGH - AVGH$	$FW - 6\text{'}/16''$	$37\text{'}/116''$	$AFGH - 15/16''$

Clear Opening Formulas (Equal Vent Single Units Only)

Clear Opening	$Width = Frame\ Width - 3\text{'}/9\text{'}/16''$ $Height = ((Frame\ Height \div 2) - 3\text{'}/9\text{'}/16'')$
Vent Sash Height	$Actual\ Vent\ Glass + 2\text{'}/5\text{'}/16''$

KEY:
AGW = Actual Glass Width
AGH = Actual Glass Height
AVGH = Actual Vent Glass Height
AFGH = Actual Fixed Glass Height
TGH = Total Glass Height
COW = Clear Opening Width
COH = Clear Opening Height

To convert area to square meters (m²), multiply square feet by 0.0929.



Impervia® Single-Hung Windows

Design Data

Single Vent Units - Equal Sash

Unit	Egress	Clear Opening		Vent Area Ft²	Visible Glass Ft²	Standard Glass Thickness (mm)		Performance Class & Grade ³
		Width (Inches)	Height (Inches)			Annealed	Tempered	
1-6/2-0		13-15/16	8-3/16	0.8	1.2	3	3	LC50
1-6/2-6		13-15/16	11-3/16	1.1	1.7	3	3	LC50
1-6/3-0		13-15/16	14-3/16	1.4	2.2	2.5	3	LC50
1-6/3-6		13-15/16	17-3/16	1.7	2.6	2.5	3	LC50
1-6/4-0		13-15/16	20-3/16	2.0	3.1	2.5	3	LC50
1-6/4-6		13-15/16	23-3/16	2.2	3.6	2.5	3	LC50
1-6/5-0		13-15/16	26-3/16	2.5	4.1	2.5	3	LC50
1-6/5-6		13-15/16	29-3/16	2.8	4.5	2.5	3	LC50
1-6/6-0		13-15/16	32-3/16	3.1	5.0	2.5	3	LC40/LC50
1-6/6-6		13-15/16	35-3/16	3.4	5.5	2.5	3	LC40/LC50
2-0/2-0		19-15/16	8-3/16	1.1	1.8	3	3	LC50
2-0/2-6		19-15/16	11-3/16	1.5	2.6	3	3	LC50
2-0/3-0		19-15/16	14-3/16	2.0	3.3	2.5	3	LC50
2-0/3-6		19-15/16	17-3/16	2.4	4.0	2.5	3	LC50
2-0/4-0		19-15/16	20-3/16	2.8	4.7	2.5	3	LC50
2-0/4-6		19-15/16	23-3/16	3.2	5.5	2.5	3	LC50
2-0/5-0		19-15/16	26-3/16	3.6	6.2	2.5	3	LC50
2-0/5-6		19-15/16	29-3/16	4.0	6.9	2.5	3	LC50
2-0/6-0		19-15/16	32-3/16	4.5	7.6	2.5	3	LC40/LC50
2-0/6-6		19-15/16	35-3/16	4.9	8.4	2.5	3	LC40/LC50
2-4/2-0		23-15/16	8-3/16	1.4	2.3	3	3	LC50
2-4/2-6		23-15/16	11-3/16	1.7	3.1	3	3	LC50
2-4/3-0		23-15/16	14-3/16	2.4	4.0	2.5	3	LC50
2-4/3-6		23-15/16	17-3/16	2.9	4.9	2.5	3	LC50
2-4/4-0		23-15/16	20-3/16	3.4	5.8	2.5	3	LC50
2-4/4-6		23-15/16	23-3/16	3.8	6.7	2.5	3	LC50
2-4/5-0		23-15/16	26-3/16	4.3	7.6	2.5	3	LC50
2-4/5-6		23-15/16	29-3/16	4.8	8.5	2.5	3	LC50
2-4/6-0	E1	23-15/16	32-3/16	5.3	9.4	2.5	3	LC40/LC50
2-4/6-6	E	23-15/16	35-3/16	5.8	10.3	2.5	3	LC40/LC50
2-6/2-0		25-15/16	8-3/16	1.5	2.5	3	3	LC50
2-6/2-6		25-15/16	11-3/16	2.0	3.5	3	3	LC50
2-6/3-0		25-15/16	14-3/16	2.6	4.5	2.5	3	LC50
2-6/3-6		25-15/16	17-3/16	3.1	5.4	2.5	3	LC50
2-6/4-0		25-15/16	20-3/16	3.6	6.4	2.5	3	LC50
2-6/4-6		25-15/16	23-3/16	4.2	7.4	2.5	3	LC50
2-6/5-0		25-15/16	26-3/16	4.7	8.4	2.5	3	LC50
2-6/5-6	E1	25-15/16	29-3/16	5.3	9.3	2.5	3	LC50
2-6/6-0	E	25-15/16	32-3/16	5.8	10.3	2.5	3	LC40/LC50
2-6/6-6	E	25-15/16	35-3/16	6.3	11.3	2.5	3	LC40/LC50

1 of 2

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress with High Performance sill adapter kit installed.

(3) Maximum performance when glazed with the appropriate glass thickness.

The second value, where shown, is the maximum performance with Performance Upgrade Kit applied.

To convert area to square meters (m²), multiply square feet by 0.0929.

Subtract 1/2" from opening height to calculate vent area for High Performance unit.



Impervia® Single-Hung Windows

Design Data

Single Vent Units - Equal Sash

Unit	Egress	Clear Opening		Vent Area Ft²	Visible Glass Ft²	Standard Glass Thickness (mm)		Performance Class & Grade ₃
		Width (Inches)	Height (Inches)			Annealed	Tempered	
2-8/2-0		27-15/16	8-3/16	1.6	2.7	3	3	LC50
2-8/2-6		27-15/16	11-3/16	2.2	3.7	3	3	LC50
2-8/3-0		27-15/16	14-3/16	2.7	4.8	2.5	3	LC50
2-8/3-6		27-15/16	17-3/16	3.3	5.9	2.5	3	LC50
2-8/4-0		27-15/16	20-3/16	3.9	6.9	2.5	3	LC50
2-8/4-6		27-15/16	23-3/16	4.5	8.0	2.5	3	LC50
2-8/5-0	E1(1)	27-15/16	26-3/16	5.1	9.0	2.5	3	LC50
2-8/5-6	E1	27-15/16	29-3/16	5.6	10.1	2.5	3	LC50
2-8/6-0	E	27-15/16	32-3/16	6.2	11.2	2.5	3	LC40/LC50
2-8/6-6	E	27-15/16	35-3/16	6.8	12.2	2.5	3	LC40/LC50
3-0/3-0		31-15/16	14-3/16	3.1	5.5	3	3	LC50
3-0/3-6		31-15/16	17-3/16	3.8	6.8	2.5	3	LC50
3-0/4-0		31-15/16	20-3/16	4.5	8.0	2.5	3	LC50
3-0/4-6		31-15/16	23-3/16	5.1	9.2	2.5	3	LC50
3-0/5-0	E	31-15/16	26-3/16	5.8	10.5	2.5	3	LC50
3-0/5-6	E	31-15/16	29-3/16	6.5	11.7	2.5	3	LC50
3-0/6-0	E	31-15/16	32-3/16	7.1	12.9	2.5	3	LC40/LC50
3-0/6-6	E	31-15/16	35-3/16	7.8	14.1	2.5	3	LC40/LC50
3-6/3-0		37-15/16	14-3/16	3.7	6.7	3	3	LC40/LC50
3-6/3-6		37-15/16	17-3/16	4.8	8.2	2.5	3	LC40/LC50
3-6/4-0		37-15/16	20-3/16	5.3	9.6	2.5	3	LC40/LC50
3-6/4-6		37-15/16	23-3/16	6.1	11.1	2.5	3	LC40/LC50
3-6/5-0	E	37-15/16	26-3/16	6.9	12.6	2.5	3	LC40/LC50
3-6/5-6	E	37-15/16	29-3/16	7.7	14.1	2.5	3	LC40/LC50
3-6/6-0	E	37-15/16	32-3/16	8.5	15.5	2.5	3	LC40/LC50
3-6/6-6	E	37-15/16	35-3/16	9.3	17.0	2.5	3	LC40/LC50
4-0/3-0		43-15/16	14-3/16	4.3	7.8	3	3	LC40/LC50
4-0/3-6		43-15/16	17-3/16	5.2	9.5	2.5	3	LC40/LC50
4-0/4-0		43-15/16	20-3/16	6.2	11.3	2.5	3	LC40/LC50
4-0/4-6		43-15/16	23-3/16	7.1	13.0	2.5	3	LC40/LC50
4-0/5-0	E	43-15/16	26-3/16	8.0	14.7	2.5	3	LC40/LC50
4-0/5-6	E	43-15/16	29-3/16	8.9	16.4	2.5	3	LC40/LC50
4-0/6-0	E	43-15/16	32-3/16	9.8	18.2	3	3	LC40/LC50
4-0/6-6	E	43-15/16	35-3/16	10.7	19.9	3.0	3	LC40/LC45

2 of 2

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress with High Performance sill adapter kit installed.

(2) Unit meets E1 with High Performance sill adapter kit installed.

(3) Maximum performance when glazed with the appropriate glass thickness.

The second value, where shown, is the maximum performance with Performance Upgrade Kit applied.

To convert area to square meters (m²), multiply square feet by 0.0929.

Subtract 1/2" from opening height to calculate vent area for High Performance unit.

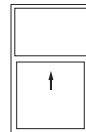


Impervia® Single-Hung Windows

Design Data

Cottage — 42" Lower Sash Height

Unit	Egress	Clear Opening (Inches)		Vent Area Ft²	Visible Glass Ft²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width	Height			Annealed	Tempered	
1-6/5-6		13-15/16	20-3/16	2.0	4.5	2.5	3	LC50
2-0/5-6		19-15/16	20-3/16	2.8	6.9	2.5	3	LC50
2-4/5-6		23-15/16	20-3/16	3.4	8.5	2.5	3	LC40/LC50
2-6/5-6		25-15/16	20-3/16	3.6	9.3	2.5	3	LC40/LC50
2-8/5-6		27-15/16	20-3/16	3.9	10.1	2.5	3	LC40/LC50
3-0/5-6		31-15/16	20-3/16	4.5	11.7	2.5	3	LC40/LC50
3-6/5-6		37-15/16	20-3/16	5.3	14.1	2.5	3	LC40/LC50
4-0/5-6		43-15/16	20-3/16	6.2	16.4	2.5	3	LC40/LC50



Contemporary — 24" Lower Sash Height

Unit	Egress	Clear Opening (Inches)		Vent Area Ft²	Visible Glass Ft²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width	Height			Annealed	Tempered	
1-6/4-6		13-15/16	20-3/16	2.0	3.6	2.5	3	LC50
1-6/5-0		13-15/16	20-3/16	2.0	4.1	2.5	3	LC50
1-6/5-6		13-15/16	20-3/16	2.0	4.5	2.5	3	LC40
1-6/6-0		13-15/16	20-3/16	2.0	5.0	2.5	3	LC40
1-6/6-6		13-15/16	20-3/16	2.0	5.5	2.5	3	LC40
2-0/4-6		19-15/16	20-3/16	2.8	5.5	2.5	3	LC50
2-0/5-0		19-15/16	20-3/16	3.6	6.2	2.5	3	LC50
2-0/5-6		19-15/16	20-3/16	2.8	6.9	2.5	3	LC40
2-0/6-0		19-15/16	20-3/16	2.8	7.6	2.5	3	LC40
2-0/6-6		19-15/16	20-3/16	2.8	8.4	2.5	3	LC40
2-4/4-6		23-15/16	20-3/16	3.4	6.7	2.5	3	LC50
2-4/5-0		23-15/16	20-3/16	3.4	7.6	2.5	3	LC50
2-4/5-6		23-15/16	20-3/16	3.4	8.5	2.5	3	LC40
2-4/6-0		23-15/16	20-3/16	3.4	9.4	2.5	3	LC40
2-4/6-6		23-15/16	20-3/16	3.4	10.3	2.5	3	LC40
2-6/4-6		25-15/16	20-3/16	3.6	7.4	2.5	3	LC50
2-6/5-0		25-15/16	20-3/16	3.6	8.4	2.5	3	LC50
2-6/5-6		25-15/16	20-3/16	3.6	9.3	2.5	3	LC40
2-6/6-0		25-15/16	20-3/16	3.6	10.3	2.5	3	LC40
2-6/6-6		25-15/16	20-3/16	3.6	11.3	2.5	3	LC40
2-8/4-6		27-15/16	20-3/16	3.9	8.0	2.5	3	LC50
2-8/5-0		27-15/16	20-3/16	3.9	9.0	2.5	3	LC50
2-8/5-6		27-15/16	20-3/16	3.9	10.1	2.5	3	LC40
2-8/6-0		27-15/16	20-3/16	3.9	11.2	2.5	3	LC40
2-8/6-6		27-15/16	20-3/16	3.9	12.2	2.5	3	LC40
3-0/4-6		31-15/16	20-3/16	4.5	9.2	2.5	3	LC50
3-0/5-0		31-15/16	20-3/16	4.5	10.5	2.5	3	LC50
3-0/5-6		31-15/16	20-3/16	4.5	11.7	2.5	3	LC40
3-0/6-0		31-15/16	20-3/16	4.5	12.9	2.5	3	LC40
3-0/6-6		31-15/16	20-3/16	4.5	14.1	2.5	3	LC40
3-6/4-6		37-15/16	20-3/16	5.3	11.1	2.5	3	LC40
3-6/5-0		37-15/16	20-3/16	5.3	12.6	2.5	3	LC40
3-6/5-6		37-15/16	20-3/16	5.3	14.1	2.5	3	LC40
3-6/6-0		37-15/16	20-3/16	5.3	15.5	3	3	LC40
3-6/6-6		37-15/16	20-3/16	5.3	17.0	3	3	LC40
4-0/4-6		43-15/16	20-3/16	6.2	13.0	2.5	3	LC40
4-0/5-0		43-15/16	20-3/16	6.2	14.7	2.5	3	LC40
4-0/5-6		43-15/16	20-3/16	6.2	16.4	3	3	LC40
4-0/6-0		43-15/16	20-3/16	6.2	18.2	3	3	LC40/LC50
4-0/6-6		43-15/16	20-3/16	6.2	19.9	3	3	LC40/LC50



(1) Maximum performance when glazed with the appropriate glass thickness.

The second value, where shown, is the maximum performance with Performance Upgrade Kit applied.

To convert area to square meters (m²), multiply square feet by 0.0929.

Subtract 1/2" from opening height to calculate vent area for High Performance unit.

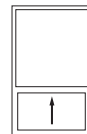


Impervia® Single-Hung Windows

Design Data

Contemporary — 30" Lower Sash Height Units

Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width	Height			Annealed	Tempered	
1-6/5-6		13-15/16	26-3/16	2.5	4.5	2.5	3	LC40/LC50
1-6/6-0		13-15/16	26-3/16	2.5	5.0	2.5	3	LC40/LC50
1-6/6-6		13-15/16	26-3/16	2.5	5.5	2.5	3	LC40/LC50
1-6/7-0		13-15/16	26-3/16	2.5	6.0	3	3	LC40/LC50
2-0/5-6		19-15/16	26-3/16	3.6	6.9	2.5	3	LC40/LC50
2-0/6-0		19-15/16	26-3/16	3.6	7.6	2.5	3	LC40/LC50
2-0/6-6		19-15/16	26-3/16	3.6	8.4	2.5	3	LC40/LC50
2-0/7-0		19-15/16	26-3/16	3.6	9.1	3	3	LC40/LC50
2-4/5-6		23-15/16	26-3/16	4.3	8.5	2.5	3	LC40/LC50
2-4/6-0		23-15/16	26-3/16	4.3	9.4	2.5	3	LC40/LC50
2-4/6-6		23-15/16	26-3/16	4.3	10.3	2.5	3	LC40/LC50
2-4/7-0		23-15/16	26-3/16	4.3	11.2	3	3	LC40/LC50
2-6/5-6		25-15/16	26-3/16	3.6	9.3	2.5	3	LC40/LC50
2-6/6-0		25-15/16	26-3/16	3.6	10.3	2.5	3	LC40/LC50
2-6/6-6		25-15/16	26-3/16	3.6	11.3	2.5	3	LC40/LC50
2-6/7-0		25-15/16	26-3/16	3.6	12.3	3	3	LC40/LC50
2-8/5-6	E ⁽²⁾	27-15/16	26-3/16	5.1	10.1	2.5	3	LC40/LC50
2-8/6-0	E ⁽²⁾	27-15/16	26-3/16	5.1	11.2	2.5	3	LC40/LC50
2-8/6-6	E ⁽²⁾	27-15/16	26-3/16	5.1	12.2	2.5	3	LC40/LC50
2-8/7-0	E ⁽²⁾	27-15/16	26-3/16	5.1	13.3	3	3	LC40/LC50
3-0/5-6	E ⁽¹⁾	31-15/16	26-3/16	5.8	11.7	2.5	3	LC40/LC50
3-0/6-0	E ⁽¹⁾	31-15/16	26-3/16	5.8	12.9	2.5	3	LC40/LC50
3-0/6-6	E ⁽¹⁾	31-15/16	26-3/16	5.8	14.1	2.5	3	LC40/LC50
3-0/7-0	E ⁽¹⁾	31-15/16	26-3/16	5.8	15.4	3	3	LC40/LC50
3-6/5-6	E	37-15/16	26-3/16	6.9	14.1	2.5	3	LC40/LC50
3-6/6-0	E	37-15/16	26-3/16	6.9	15.5	2.5	3	LC40/LC50
3-6/6-6	E	37-15/16	26-3/16	6.9	17.0	3.0	3	LC40/LC50
3-6/7-0	E	37-15/16	26-3/16	6.9	18.5	3	5	LC40/LC50
4-0/5-6	E	43-15/16	26-3/16	8.0	16.4	2.5	3	LC40/LC50
4-0/6-0	E	43-15/16	26-3/16	8.0	18.2	3.0	3	LC40/LC50
4-0/6-6	E	43-15/16	26-3/16	8.0	19.9	3.0	3	LC40/LC50
4-0/7-0	E	43-15/16	26-3/16	8.0	21.6	3	5	LC40/LC50



Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress with High Performance sill adapter kit installed.

(2) Unit meets E1 with High Performance sill adapter kit installed.

(1) Maximum performance when glazed with the appropriate glass thickness.

The second value, where shown, is the maximum performance with Performance Upgrade Kit applied.

To convert area to square meters (m²), multiply square feet by 0.0929.

Subtract 1/2" from opening height to calculate vent area for High Performance unit.



Impervia® Single-Hung Windows

Design Data

Unit	Visible Glass Ft²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
Flankers				
1-2/3-0	1.5	3	3	CW50
1-2/3-6	1.8	3	3	CW50
1-2/4-0	2.1	–	3	CW50
1-2/4-6	2.5	–	3	CW50
1-2/5-0	2.8	–	3	CW50
Transoms				
1-6/1-2	0.6	3	3	CW50
1-6/1-6	0.9	3	3	CW50
1-6/2-0	1.4	3	3	CW50
2-0/1-2	0.9	3	3	CW50
2-0/1-6	1.4	3	3	CW50
2-0/2-0	2.1	3	3	CW50
2-4/1-2	1.1	3	3	CW50
2-4/1-6	1.7	3	3	CW50
2-4/2-0	2.6	3	3	CW50
2-6/1-2	1.2	3	3	CW50
2-6/1-6	1.9	3	3	CW50
2-6/2-0	2.8	3	3	CW50
2-8/1-2	1.3	3	3	CW50
2-8/1-6	2.0	3	3	CW50
2-8/2-0	3.1	3	3	CW50
3-0/1-2	1.5	3	3	CW50
3-0/1-6	2.3	3	3	CW50
3-0/2-0	3.6	3	3	CW50
3-6/1-2	1.8	3	3	CW50
3-6/1-6	2.8	3	3	CW50
3-6/2-0	4.3	3	3	CW50
4-0/1-2	2.1	3	3	CW50
4-0/1-6	3.3	3	3	CW50
4-0/2-0	4.3	3	3	CW50
4-6/1-2	2.5	3	3	CW50
4-6/1-6	3.8	2.5	3	CW50
4-6/2-0	5.7	3	3	CW50
5-0/1-2	2.8	3	3	CW50
5-0/1-6	4.2	2.5	3	CW50
5-0/2-0	6.5	2.5	3	CW50

Single Fixed				
Unit	Visible Glass Ft²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
3-6/3-0	7.2	2.5	3	CW50
3-6/3-6	8.7	2.5	3	CW45
3-6/4-0	10.2	3	3	CW45
3-6/4-6	11.7	3	3	CW40
3-6/5-0	13.2	3	3	CW40
3-6/5-6	14.6	3	3	CW40
3-6/6-0	16.1	3	3	CW40
4-0/3-0	8.5	2.5	3	CW50
4-0/3-6	10.2	3	5	CW45
4-0/4-0	11.9	3	5	CW40
4-0/4-6	13.7	3	5	CW40
4-0/5-0	15.4	3	5	CW40
4-0/5-6	17.1	3	5	CW35
4-0/6-0	18.8	5	5	CW35
4-6/3-0	9.7	2.5	3	CW45
4-6/3-6	11.7	3	5	CW40
4-6/4-0	13.7	3	5	CW40
4-6/4-6	15.6	3	5	CW35
4-6/5-0	17.6	5	5	CW35
4-6/5-6	19.6	5	5	CW35
4-6/6-0	21.6	5	5	CW35
5-0/3-0	10.9	3	3	CW45
5-0/3-6	13.2	3	5	CW40
5-0/4-0	15.4	3	5	CW40
5-0/4-6	17.6	5	5	CW35
5-0/5-0	19.8	5	5	CW35
5-0/5-6	22.1	5	5	CW30
5-0/6-0	24.3	5	5	CW30

(1) Maximum performance when glazed with the appropriate glass thickness. Second value, where shown, requires tempered glass.

To convert area to square meters (m²), multiply square feet by 0.0929.

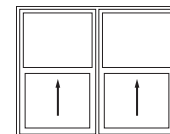


Impervia® Single-Hung Windows

Design Data

Vent — Equal Sash 2-Wide Composites

Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
		Width	Height			Annealed	Tempered	
3-0/2-0		13-15/16	8-3/16	1.6	2.4	2.5	3	LC30
3-0/2-6		13-15/16	11-3/16	2.2	3.4	2.5	3	LC30
3-0/3-0		13-15/16	14-3/16	2.7	4.3	2.5	3	LC30
3-0/3-6		13-15/16	17-3/16	3.3	5.3	2.5	3	LC30
3-0/4-0		13-15/16	20-3/16	3.9	6.3	2.5	3	LC30
3-0/4-6		13-15/16	23-3/16	4.5	7.2	2.5	3	LC30
3-0/5-0		13-15/16	26-3/16	5.1	8.2	2.5	3	LC30
3-0/5-6		13-15/16	29-3/16	5.6	9.1	2.5	3	LC30
3-0/6-0		13-15/16	32-3/16	6.2	10.1	2.5	3	LC30
3-0/6-6		13-15/16	35-3/16	6.8	11.0	2.5	3	LC30
4-0/2-0		19-15/16	8-3/16	2.3	3.7	2.5	3	LC30
4-0/2-6		19-15/16	11-3/16	3.1	5.2	2.5	3	LC30
4-0/3-0		19-15/16	14-3/16	3.9	6.6	2.5	3	LC30
4-0/3-6		19-15/16	17-3/16	4.8	8.1	2.5	3	LC30
4-0/4-0		19-15/16	20-3/16	5.6	9.5	2.5	3	LC30
4-0/4-6		19-15/16	23-3/16	6.4	11.0	2.5	3	LC30
4-0/5-0		19-15/16	26-3/16	7.2	12.4	2.5	3	LC30
4-0/5-6		19-15/16	29-3/16	8.1	13.9	2.5	3	LC30
4-0/6-0		19-15/16	32-3/16	8.9	15.3	2.5	3	LC30
4-0/6-6		19-15/16	35-3/16	9.7	16.8	2.5	3	LC30
4-8/2-0		23-15/16	8-3/16	2.7	4.6	2.5	3	LC30
4-8/2-6		23-15/16	11-3/16	3.7	6.4	2.5	3	LC30
4-8/3-0		23-15/16	14-3/16	4.7	8.2	2.5	3	LC30
4-8/3-6		23-15/16	17-3/16	5.7	9.9	2.5	3	LC30
4-8/4-0		23-15/16	20-3/16	6.7	11.7	2.5	3	LC30
4-8/4-6		23-15/16	23-3/16	7.7	13.5	2.5	3	LC30
4-8/5-0		23-15/16	26-3/16	8.7	15.3	2.5	3	LC30
4-8/5-6		23-15/16	29-3/16	9.7	17.1	2.5	3	LC30
4-8/6-0	E1	23-15/16	32-3/16	10.7	18.9	2.5	3	LC30
4-8/6-6	E	23-15/16	35-3/16	11.7	20.7	2.5	3	LC30
5-0/2-0		25-15/16	8-3/16	2.9	5.0	2.5	3	LC30
5-0/2-6		25-15/16	11-3/16	4.0	7.0	2.5	3	LC30
5-0/3-0		25-15/16	14-3/16	5.1	8.9	2.5	3	LC30
5-0/3-6		25-15/16	17-3/16	6.2	10.9	2.5	3	LC30
5-0/4-0		25-15/16	20-3/16	7.3	12.8	2.5	3	LC30
5-0/4-6		25-15/16	23-3/16	8.3	14.8	2.5	3	LC30
5-0/5-0		25-15/16	26-3/16	9.4	16.7	2.5	3	LC30
5-0/5-6	E1	25-15/16	29-3/16	10.5	18.7	2.5	3	LC30
5-0/6-0	E	25-15/16	32-3/16	11.6	20.6	2.5	3	LC30
5-0/6-6	E	25-15/16	35-3/16	12.7	22.6	2.5	3	LC30



1 of 2

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

V = Vent Only

(1) Composite units are not AAMA/WDMA performance certified. Pella Impervia Composites are engineered to meet the performance class and grade shown. Engineered performance also applies for fixed-vent or vent-fixed composites.

(2) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.

When ordering and sizing composites, use overall frame/rough opening dimensions.

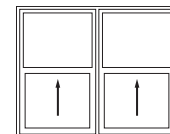


Impervia® Single-Hung Windows

Design Data

Vent — Equal Sash 2-Wide Composites

Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
		Width	Height			Annealed	Tempered	
5-4/2-0		27-15/16	8-3/16	3.2	5.4	2.5	3	LC30
5-4/2-6		27-15/16	11-3/16	4.3	7.6	2.5	3	LC30
5-4/3-0		27-15/16	14-3/16	5.5	9.7	2.5	3	LC30
5-4/3-6		27-15/16	17-3/16	6.7	11.8	2.5	3	LC30
5-4/4-0		27-15/16	20-3/16	7.8	13.9	2.5	3	LC30
5-4/4-6		27-15/16	23-3/16	9.0	16.0	2.5	3	LC30
5-4/5-0	E ⁽³⁾	27-15/16	26-3/16	10.2	18.2	2.5	3	LC30
5-4/5-6	E ¹	27-15/16	29-3/16	11.3	20.3	2.5	3	LC30
5-4/6-0	E	27-15/16	32-3/16	12.5	22.4	2.5	3	LC30
5-4/6-6	E	27-15/16	35-3/16	13.6	24.5	2.5	3	R25
6-0/3-0		31-15/16	14-3/16	6.3	11.2	2.5	3	LC30
6-0/3-6		31-15/16	17-3/16	7.6	13.6	2.5	3	LC30
6-0/4-0		31-15/16	20-3/16	8.9	16.1	2.5	3	LC30
6-0/4-6		31-15/16	23-3/16	10.3	18.6	2.5	3	LC30
6-0/5-0	E ⁽⁴⁾	31-15/16	26-3/16	11.6	21.0	2.5	3	LC30
6-0/5-6	E	31-15/16	29-3/16	12.9	23.5	2.5	3	LC30
6-0/6-0	E	31-15/16	32-3/16	14.3	25.9	2.5	3	LC30
6-0/6-6	E	31-15/16	35-3/16	15.6	28.4	2.5	3	R20
7-0/3-0		37-15/16	14-3/16	7.5	13.5	2.5	3	LC30
7-0/3-6		37-15/16	17-3/16	9.0	16.4	2.5	3	LC30
7-0/4-0		37-15/16	20-3/16	10.6	19.4	2.5	3	LC30
7-0/4-6		37-15/16	23-3/16	12.2	22.3	2.5	3	LC30
7-0/5-0	E	37-15/16	26-3/16	13.8	25.3	2.5	3	LC30
7-0/5-6	E	37-15/16	29-3/16	15.4	28.2	2.5	3	LC30
7-0/6-0	E	37-15/16	32-3/16	16.9	31.2	2.5	3	R25
7-0/6-6	E	37-15/16	35-3/16	18.5	34.1	2.5	3	R20
8-0/3-0		43-15/16	14-3/16	8.6	15.8	2.5	3	LC30
8-0/3-6		43-15/16	17-3/16	10.5	19.2	2.5	3	LC30
8-0/4-0		43-15/16	20-3/16	12.3	22.7	2.5	3	LC30
8-0/4-6		43-15/16	23-3/16	14.1	26.1	2.5	3	LC30
8-0/5-0	E	43-15/16	26-3/16	16.0	29.6	2.5	3	LC30
8-0/5-6	E	43-15/16	29-3/16	17.8	33.0	2.5	3	R25
8-0/6-0	E	43-15/16	32-3/16	19.6	36.5	2.5	3	R20



2 of 2

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(3) = If high performance sill adapter kit is installed unit will not meet egress.

(4) = Unit meets E1 if high performance sill adapter kit is installed.

V = Vent Only

(1) Composite units are not AAMA/WDMA performance certified. Pella Impervia Composites are engineered to meet the performance class and grade shown. Engineered performance also applies for fixed-vent or vent-fixed composites.

(2) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.

When ordering and sizing composites, use overall frame/rough opening dimensions.

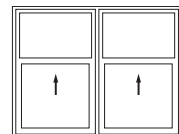


Impervia® Single-Hung Windows

Design Data

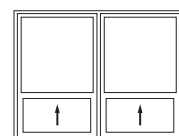
Cottage Vent Unequal 42" Lower Sash 2-Wide Composites

Unit	Lower Sash	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
			Width	Height			Annealed	Tempered	
3-0/5-6	42V		13-15/16	20-3/16	3.9	9.1	2.5	3	LC30
4-0/5-6	42V		19-15/16	20-3/16	5.6	13.9	2.5	3	LC30
4-8/5-6	42V		23-15/16	20-3/16	6.7	17.1	2.5	3	LC30
5-0/5-6	42V		25-15/16	20-3/16	7.3	18.7	2.5	3	LC30
5-4/5-6	42V		27-15/16	20-3/16	7.8	20.3	2.5	3	LC30
6-0/5-6	42V		31-15/16	20-3/16	8.9	23.5	2.5	3	LC30
7-0/5-6	42V		37-15/16	20-3/16	10.6	28.2	2.5	3	LC30
8-0/5-6	42V		43-15/16	20-3/16	12.3	33.0	2.5	3	R25



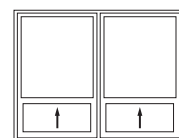
Contemporary Vent Unequal 30" Lower Sash 2-Wide Composites

Unit	Lower Sash	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
			Width	Height			Annealed	Tempered	
3-0/7-0	30V		13-15/16	26-3/16	5.1	12.0	2.5	3	LC30
4-0/7-0	30V		19-15/16	26-3/16	7.2	18.3	2.5	3	LC30
4-8/7-0	30V		23-15/16	26-3/16	8.7	22.4	2.5	3	R20
5-0/7-0	30V		25-15/16	26-3/16	9.4	24.5	2.5	3	R20
5-4/7-0	30V	E1(3)	27-15/16	26-3/16	10.2	26.6	2.5	3	R20



Contemporary Vent Unequal 24" Lower Sash 2-Wide Composites

Unit	Lower Sash	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
			Width	Height			Annealed	Tempered	
3-0/5-6	24V		13-15/16	20-3/16	3.9	9.1	2.5	3	LC30
3-0/6-0	24V		13-15/16	20-3/16	3.9	10.1	2.5	3	LC30
3-0/6-6	24V		13-15/16	20-3/16	3.9	11.0	2.5	3	LC30
4-0/5-6	24V		19-15/16	20-3/16	5.6	13.9	2.5	3	LC30
4-0/6-0	24V		19-15/16	20-3/16	5.6	15.3	2.5	3	LC30
4-0/6-6	24V		19-15/16	20-3/16	5.6	16.8	2.5	3	LC30
4-8/5-6	24V		23-15/16	20-3/16	6.7	17.1	2.5	3	LC30
4-8/6-0	24V		23-15/16	20-3/16	6.7	18.9	2.5	3	LC30
4-8/6-6	24V		23-15/16	20-3/16	6.7	20.7	2.5	3	LC30
5-0/5-6	24V		25-15/16	20-3/16	7.3	18.7	2.5	3	LC30
5-0/6-0	24V		25-15/16	20-3/16	7.3	20.6	2.5	3	LC30
5-0/6-6	24V		25-15/16	20-3/16	7.3	22.6	2.5	3	LC30
5-4/5-6	24V		27-15/16	20-3/16	7.8	20.3	2.5	3	LC30
5-4/6-0	24V		27-15/16	20-3/16	7.8	22.4	2.5	3	LC30
5-4/6-6	24V		27-15/16	20-3/16	7.8	24.5	2.5	3	R25
6-0/5-6	24V		31-15/16	20-3/16	8.9	23.5	2.5	3	LC30
6-0/6-0	24V		31-15/16	20-3/16	8.9	25.9	2.5	3	LC30
6-0/6-6	24V		31-15/16	20-3/16	8.9	28.4	2.5	3	R20
7-0/5-6	24V		37-15/16	20-3/16	10.6	28.2	2.5	3	LC30
7-0/6-0	24V		37-15/16	20-3/16	10.6	31.2	2.5	3	R20
7-0/6-6	24V		37-15/16	20-3/16	10.6	34.1	2.5	3	R20
8-0/5-6	24V		43-15/16	20-3/16	12.3	33.0	3	3	R25
8-0/6-0	24V		43-15/16	20-3/16	12.3	36.5	3	3	R20



Egress Notes:

Check all applicable local codes for emergency egress requirements.

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(3) = If high performance sill adapter kit is installed unit will not meet egress.

V = Vent only.

(1) Maximum performance when glazed with the appropriate glass thickness.

(2) Composite units are not AAMA/WDMA performance certified. Pella Impervia Composites are engineered to meet the performance class and grade shown. Engineered performance also applies for fixed-vent or vent-fixed composites.

To convert area to square meters (m²), multiply square feet by 0.0929.

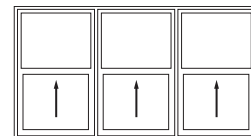


Impervia® Single-Hung Windows

Design Data

Vent Equal Sash 3-Wide Composites

Unit	Egress	Clear Opening (Inches)		Vent Area Ft²	Visible Glass Ft²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
		Width	Height			Annealed	Tempered	
4-6/2-0		13-15/16	8-3/16	2.4	3.7	2.5	3	LC30
4-6/2-6		13-15/16	11-3/16	3.2	5.1	2.5	3	LC30
4-6/3-0		13-15/16	14-3/16	4.1	6.5	2.5	3	LC30
4-6/3-6		13-15/16	17-3/16	5.0	8.0	2.5	3	LC30
4-6/4-0		13-15/16	20-3/16	5.9	9.4	2.5	3	LC30
4-6/4-6		13-15/16	23-3/16	6.7	10.8	2.5	3	LC30
4-6/5-0		13-15/16	26-3/16	7.6	12.2	2.5	3	LC30
4-6/5-6		13-15/16	29-3/16	8.5	13.7	2.5	3	LC30
4-6/6-0		13-15/16	32-3/16	9.3	15.1	2.5	3	LC30
4-6/6-6		13-15/16	35-3/16	10.2	16.5	2.5	3	LC30
6-0/2-0		19-15/16	8-3/16	3.4	5.6	2.5	3	LC30
6-0/2-6		19-15/16	11-3/16	4.6	7.8	2.5	3	LC30
6-0/3-0		19-15/16	14-3/16	5.9	9.9	2.5	3	LC30
6-0/3-6		19-15/16	17-3/16	7.1	12.1	2.5	3	LC30
6-0/4-0		19-15/16	20-3/16	8.4	14.3	2.5	3	LC30
6-0/4-6		19-15/16	23-3/16	9.6	16.5	2.5	3	LC30
6-0/5-0		19-15/16	26-3/16	10.9	18.7	2.5	3	LC30
6-0/5-6		19-15/16	29-3/16	12.1	20.8	2.5	3	LC30
6-0/6-0		19-15/16	32-3/16	13.4	23.0	2.5	3	LC30
6-0/6-6		19-15/16	35-3/16	14.6	25.2	2.5	3	LC30
7-0/2-0		23-15/16	8-3/16	4.1	6.9	2.5	3	LC30
7-0/2-6		23-15/16	11-3/16	5.6	9.5	2.5	3	LC30
7-0/3-0		23-15/16	14-3/16	7.1	12.2	2.5	3	LC30
7-0/3-6		23-15/16	17-3/16	8.6	14.9	2.5	3	LC30
7-0/4-0		23-15/16	20-3/16	10.1	17.6	2.5	3	LC30
7-0/4-6		23-15/16	23-3/16	11.5	20.3	2.5	3	LC30
7-0/5-0		23-15/16	26-3/16	13.0	22.9	2.5	3	LC30
7-0/5-6		23-15/16	29-3/16	14.5	25.6	2.5	3	LC30
7-0/6-0	E1	23-15/16	32-3/16	16.0	28.3	2.5	3	LC30
7-0/6-6	E	23-15/16	35-3/16	17.5	31.0	2.5	3	LC30
7-6/2-0		25-15/16	8-3/16	4.4	7.5	2.5	3	LC30
7-6/2-6		25-15/16	11-3/16	6.0	10.4	2.5	3	LC30
7-6/3-0		25-15/16	14-3/16	7.7	13.4	2.5	3	LC30
7-6/3-6		25-15/16	17-3/16	9.3	16.3	2.5	3	LC30
7-6/4-0		25-15/16	20-3/16	10.9	19.2	2.5	3	LC30
7-6/4-6		25-15/16	23-3/16	12.5	22.2	2.5	3	LC30
7-6/5-0		25-15/16	26-3/16	14.1	25.1	2.5	3	LC30
7-6/5-6		25-15/16	29-3/16	15.8	28.0	2.5	3	LC30
7-6/6-0		25-15/16	32-3/16	17.4	30.9	2.5	3	LC30
7-6/6-6		25-15/16	35-3/16	19.0	33.9	2.5	3	LC30
8-0/2-0		27-15/16	8-3/16	4.8	8.1	2.5	3	LC30
8-0/2-6		27-15/16	11-3/16	6.5	11.3	2.5	3	LC30
8-0/3-0		27-15/16	14-3/16	8.2	14.5	2.5	3	LC30
8-0/3-6		27-15/16	17-3/16	10.0	17.7	2.5	3	LC30
8-0/4-0		27-15/16	20-3/16	11.7	20.9	2.5	3	LC30
8-0/4-6		27-15/16	23-3/16	13.5	24.0	2.5	3	LC30
8-0/5-0	E1(3)	27-15/16	26-3/16	15.2	27.2	2.5	3	LC30
8-0/5-6	E1	27-15/16	29-3/16	17.0	30.4	2.5	3	LC30
8-0/6-0	E	27-15/16	32-3/16	18.7	33.6	2.5	3	LC30
8-0/6-6	E	27-15/16	35-3/16	20.5	36.8	2.5	3	R25
9-0/3-0		31-15/16	14-3/16	9.4	16.8	2.5	3	LC30
9-0/3-6		31-15/16	17-3/16	11.4	20.5	2.5	3	LC30
9-0/4-0		31-15/16	20-3/16	13.4	24.1	2.5	3	LC30
9-0/4-6		31-15/16	23-3/16	15.4	27.8	2.5	3	LC30
9-0/5-0	E(4)	31-15/16	26-3/16	17.4	31.5	2.5	3	LC30
9-0/5-6	E	31-15/16	29-3/16	19.4	35.2	2.5	3	LC30
9-0/6-0	E	31-15/16	32-3/16	21.4	38.9	2.5	3	LC30
9-0/6-6	E	31-15/16	35-3/16	23.4	42.5	2.5	3	R20



Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(3) = If high performance sill adapter kit is installed unit will not meet egress.

(4) = Unit meets E1 if high performance sill adapter kit is installed.

V = Vent Only

(1) Composite units are not AAMA/WDMA performance certified. Pella Impervia Composites are engineered to meet the performance class and grade shown. Engineered performance also applies for fixed-vent or vent-fixed composites.

(2) Maximum performance when glazed with the appropriate glass thickness.

When ordering and sizing composites, use overall frame/rough opening dimensions.

To convert area to square meters (m²), multiply square feet by 0.0929.

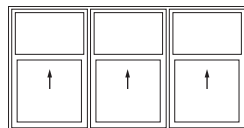


Impervia® Single-Hung Windows

Design Data

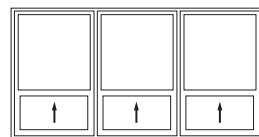
Cottage Vent Unequal 42" Lower Sash 3-Wide Composites

Unit	Lower Sash	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
			Width	Height			Annealed	Tempered	
4-6/5-6	42V		13-15/16	20-3/16	5.9	13.7	2.5	3	LC30
6-0/5-6	42V		19-15/16	20-3/16	8.4	20.8	2.5	3	LC30
7-0/5-6	42V		23-15/16	20-3/16	10.1	25.6	2.5	3	LC30
7-6/5-6	42V		25-15/16	20-3/16	10.9	28.0	2.5	3	LC30
8-0/5-6	42V		27-15/16	20-3/16	11.7	30.4	2.5	3	LC30
9-0/5-6	42V		31-15/16	20-3/16	13.4	35.2	2.5	3	LC30



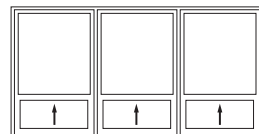
Contemporary Vent Unequal 30" Lower Sash 3-Wide Composites

Unit	Lower Sash	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
			Width	Height			Annealed	Tempered	
4-6/7-0	30V		13-15/16	26-3/16	7.6	18.0	2.5	3	LC30
6-0/7-0	30V		19-15/16	26-3/16	10.9	27.4	2.5	3	LC30
7-0/7-0	30V		23-15/16	26-3/16	13.0	33.7	2.5	3	R20
7-6/7-0	30V		25-15/16	26-3/16	14.1	36.8	2.5	3	R20
8-0/7-0	30V	E1(3)	27-15/16	26-3/16	15.2	39.9	2.5	3	R20



Contemporary Vent Unequal 24" Lower Sash 3-Wide Composites

Unit	Lower Sash	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ^{1,2}
			Width	Height			Annealed	Tempered	
4-6/5-6	24V		13-15/16	20-3/16	5.9	13.7	2.5	3	LC30
4-6/6-0	24V		13-15/16	20-3/16	5.9	15.1	2.5	3	LC30
4-6/6-6	24V		13-15/16	20-3/16	5.9	16.5	2.5	3	LC30
6-0/5-6	24V		19-15/16	20-3/16	8.4	20.8	2.5	3	LC30
6-0/6-0	24V		19-15/16	20-3/16	8.4	23.0	2.5	3	LC30
6-0/6-6	24V		19-15/16	20-3/16	8.4	25.2	2.5	3	LC30
7-0/5-6	24V		23-15/16	20-3/16	10.1	25.6	2.5	3	LC30
7-0/6-0	24V		23-15/16	20-3/16	10.1	28.3	2.5	3	LC30
7-0/6-6	24V		23-15/16	20-3/16	10.1	31.0	2.5	3	LC30
7-6/5-6	24V		25-15/16	20-3/16	10.9	28.0	2.5	3	LC30
7-6/6-0	24V		25-15/16	20-3/16	10.9	30.9	2.5	3	LC30
7-6/6-6	24V		25-15/16	20-3/16	10.9	33.9	2.5	3	LC30
8-0/5-6	24V		27-15/16	20-3/16	11.7	30.4	2.5	3	LC30
8-0/6-0	24V		27-15/16	20-3/16	11.7	33.6	2.5	3	LC30
8-0/6-6	24V		27-15/16	20-3/16	11.7	36.8	2.5	3	R25
9-0/5-6	24V		31-15/16	20-3/16	13.4	35.2	2.5	3	LC30
9-0/6-0	24V		31-15/16	20-3/16	13.4	38.9	2.5	3	LC30
9-0/6-6	24V		31-15/16	20-3/16	13.4	42.5	2.5	3	R20



Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(3) = If high performance sill adapter kit is installed unit will not meet egress.

V = Vent Only

(1) Composite units are not AAMA/WDMA performance certified. Pella Impervia Composites are engineered to meet the performance class and grade shown. Engineered performance also applies for fixed-vent or vent-fixed composites.

(2) Maximum performance when glazed with the appropriate glass thickness.

When ordering and sizing composites, use overall frame/rough opening dimensions.

To convert area to square meters (m²), multiply square feet by 0.0929.



Detailed Product Descriptions

Frame

- Frame is Duracast® fiberglass composite — five-layer pultruded fiberglass material [with optional foam insulation₁] reinforced with a Pella patented interlocking mat.
- Overall frame depth is 3".
- Nominal wall thickness of Duracast fiberglass composite members is .050" to .070" thick.
- Frame corners are mitered, joined and bonded with corner lock and mechanically fastened with injected polyurethane adhesive.
- Sill is fitted with weep valve assemblies.
- Jambs contain factory drilled (counter-bored) installation screw holes. Block and Flush Flange frames only.
- Optional factory-applied jamb extensions available in 4-9/16" and 6-9/16".

Sash

- Sash is Duracast fiberglass composite—five-layer pultruded fiberglass material [with optional foam insulation₁] reinforced with a Pella patented interlocking mat.
- All sash members have mitered corners bonded with corner lock and sealed with injected polyurethane adhesive.

Exterior / Interior

- Duracast fiberglass composite surfaces with powder-coat paint finish.
 - Color is [White] [Brown] [Black] [Tan] [Morning Sky Gray].
— or —
 - Dual-color option [Brown] [Black] [Tan] [Morning Sky Gray] exterior with White interior₂.

Glazing System

- Quality float glass complying with ASTM C 1036.
- 11/16" insulating glass [[annealed] [tempered]] [obscure₃] [[clear] [Advanced] [SunDefense™] [SunDefense+] [AdvancedComfort] [NaturalSun] [NaturalSun+]] Low-E coated, with argon]] sealed and bonded to sash.
- High altitude glazing available.

Weatherstripping

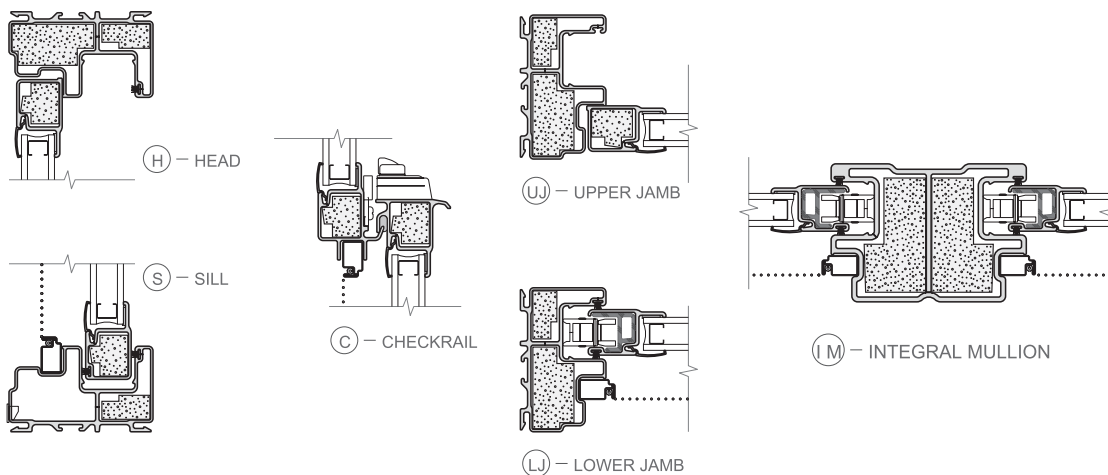
- Sash is weatherstripped around the perimeter with a dual fin-type pile weatherstrip.

Hardware

- Galvanized block-and-tackle balances connected to sash with polyester cord and concealed within the frame.
- Lower sash shall be fully operable for ventilation.
- Window jamb has take-out clips to remove vent.
- All fasteners are of a corrosion-resistant material.
- Two locks are installed on units 37" wide or greater.
- Locks are zinc die-cast, self-aligning cam action factory-installed on the interlocker [powder-coat painted [White] [Brown] [Black] [Tan] [Morning Sky Gray] to match finish] [Satin Nickel] [Bright Brass] [Oil-Rubbed Bronze].

Foam Insulation Inserts₁

Single Hung



(1) Foam insulation inserts are not available with clear glazing.

(2) Dual-color finish is not available on products with integral nailing fin.

(3) Obscure glazing is not available when AdvancedComfort Low-E coated IG is specified.

Optional Products

Screens

- InView™ Screen
 - Half-size with black vinyl coated 18/18 mesh fiberglass screen cloth complying with SMA 1201.
 - Set in aluminum frame and fitted to outside of window.
 - Supplied complete with all necessary hardware.
 - Screen frame finish is baked enamel, color to match exterior.

Grilles

- Grilles-Between-the-Glass
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Grilles are factory prefinished [White] [Brown] [Black] [Tan] [Morning Sky Gray] to match interior and exterior finish.

Hardware

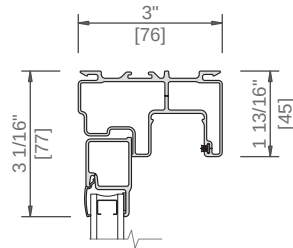
- Optional limited opening device available for field installation on vent units in [White] [Brown] [Black] vinyl to match interior of unit; nominal 3-3/4" opening.
- Optional window opening control device available for field installation. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.
- Optional field applied Duracast sash lift available for vent units in [White] [Brown] [Black] [Tan] [Morning Sky Gray].



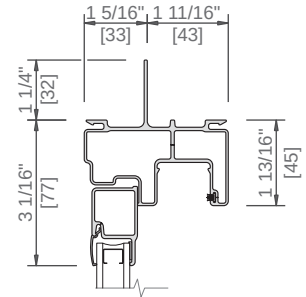
Impervia® Single-Hung Windows

Frame Types

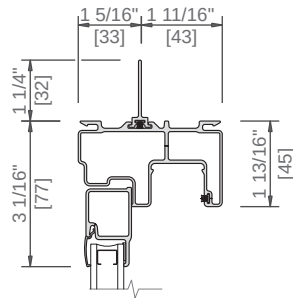
STANDARD
BLOCK FRAME



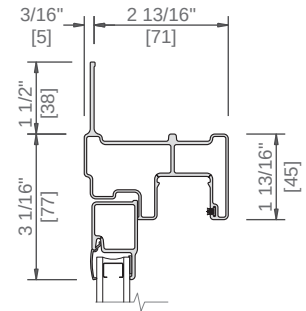
INTEGRAL NAILING FIN



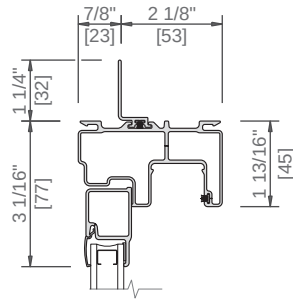
BLOCK FRAME
STANDARD FIN



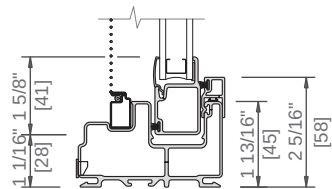
FLUSH FLANGE



BLOCK FRAME
OFFSET FIN



BLOCK FRAME
DP50 SILL DAM



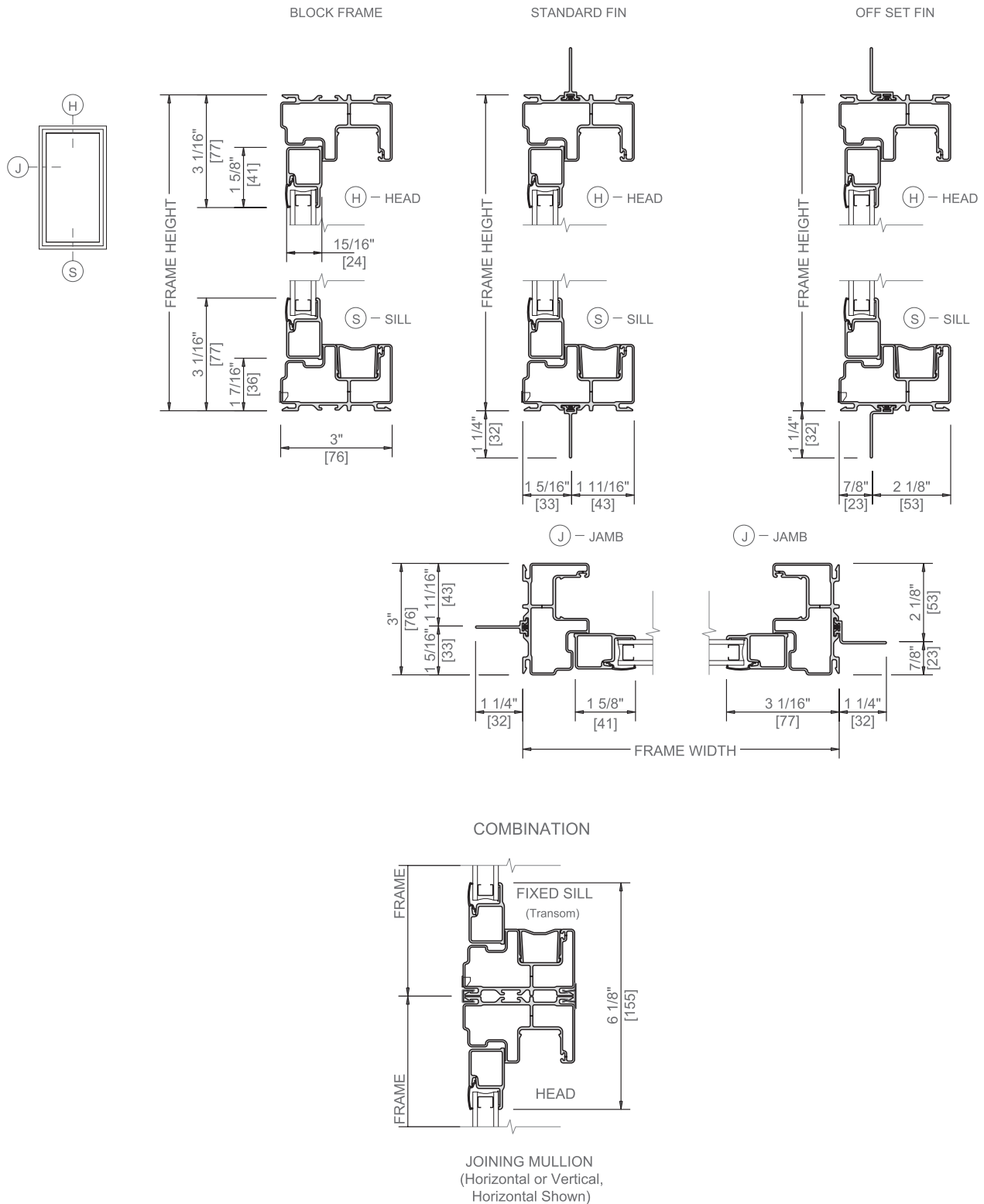
Scale 3" = 1' 0"

All dimensions are approximate.



Impervia® Single-Hung Windows

Unit Sections



Scale 3" = 1' 0"

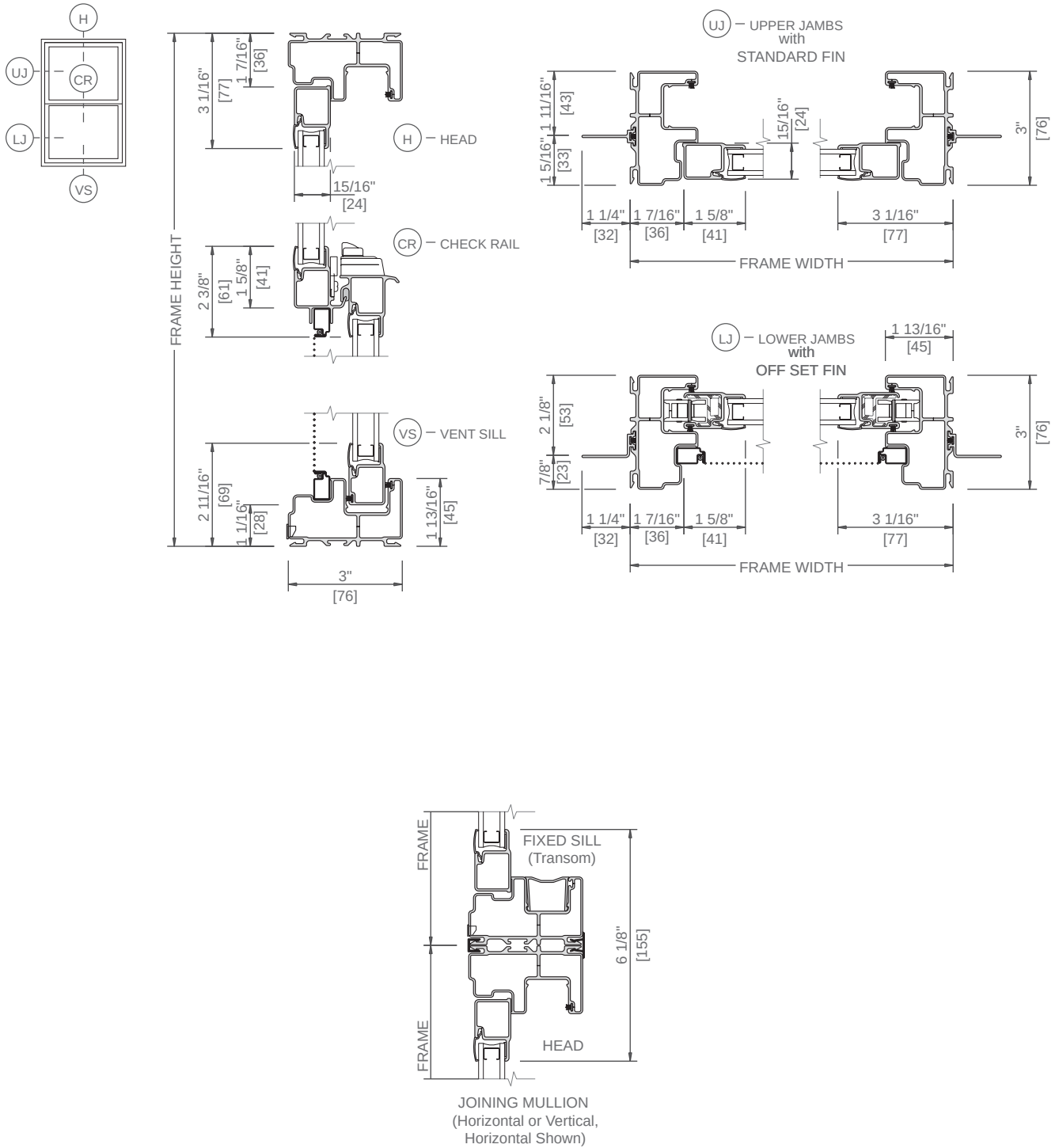
All dimensions are approximate.

See Combination section for mullion application and structural limitations.



Impervia® Single-Hung Windows

Unit Sections



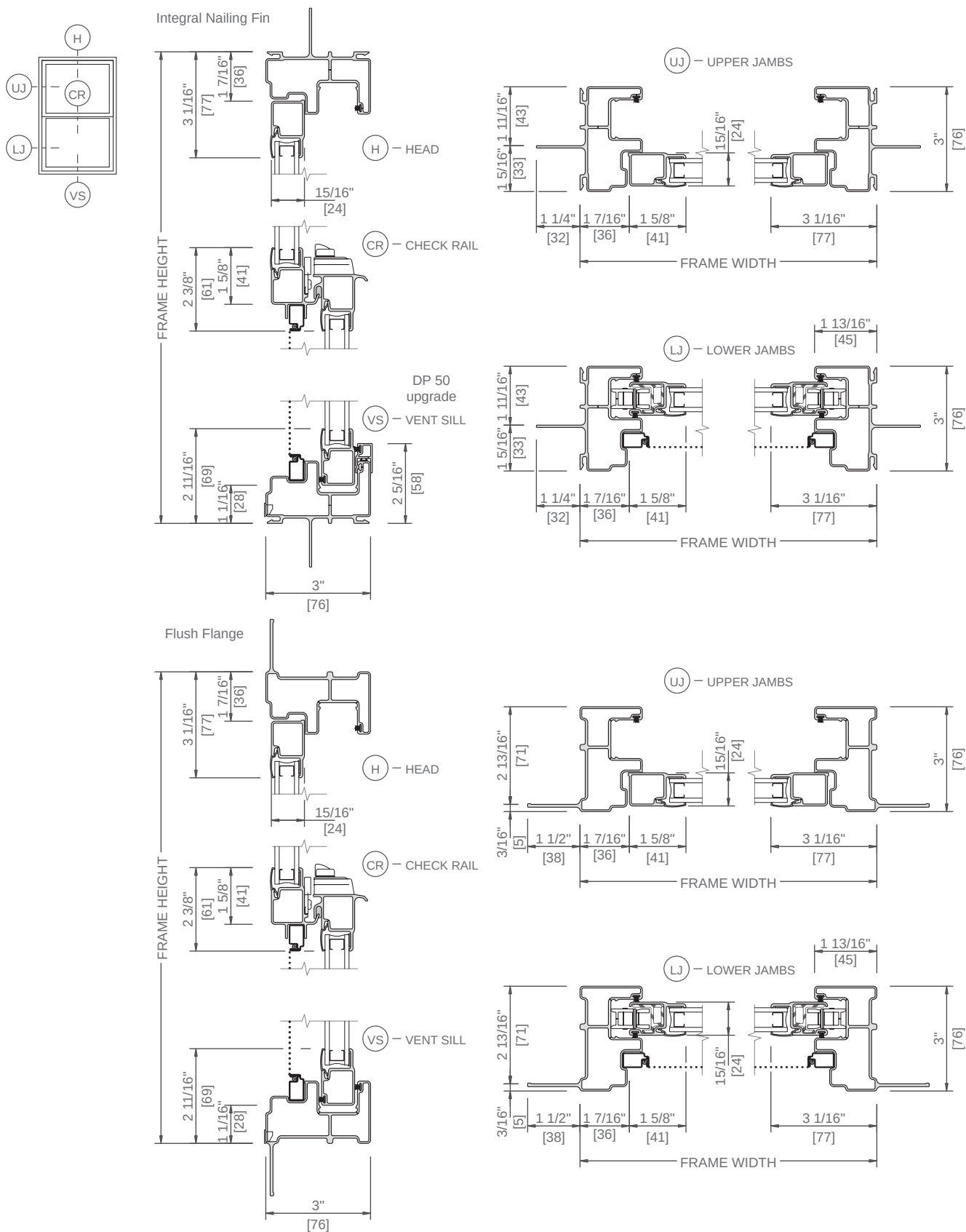
Scale 3" = 1' 0"

All dimensions are approximate.



Impervia® Single-Hung Windows

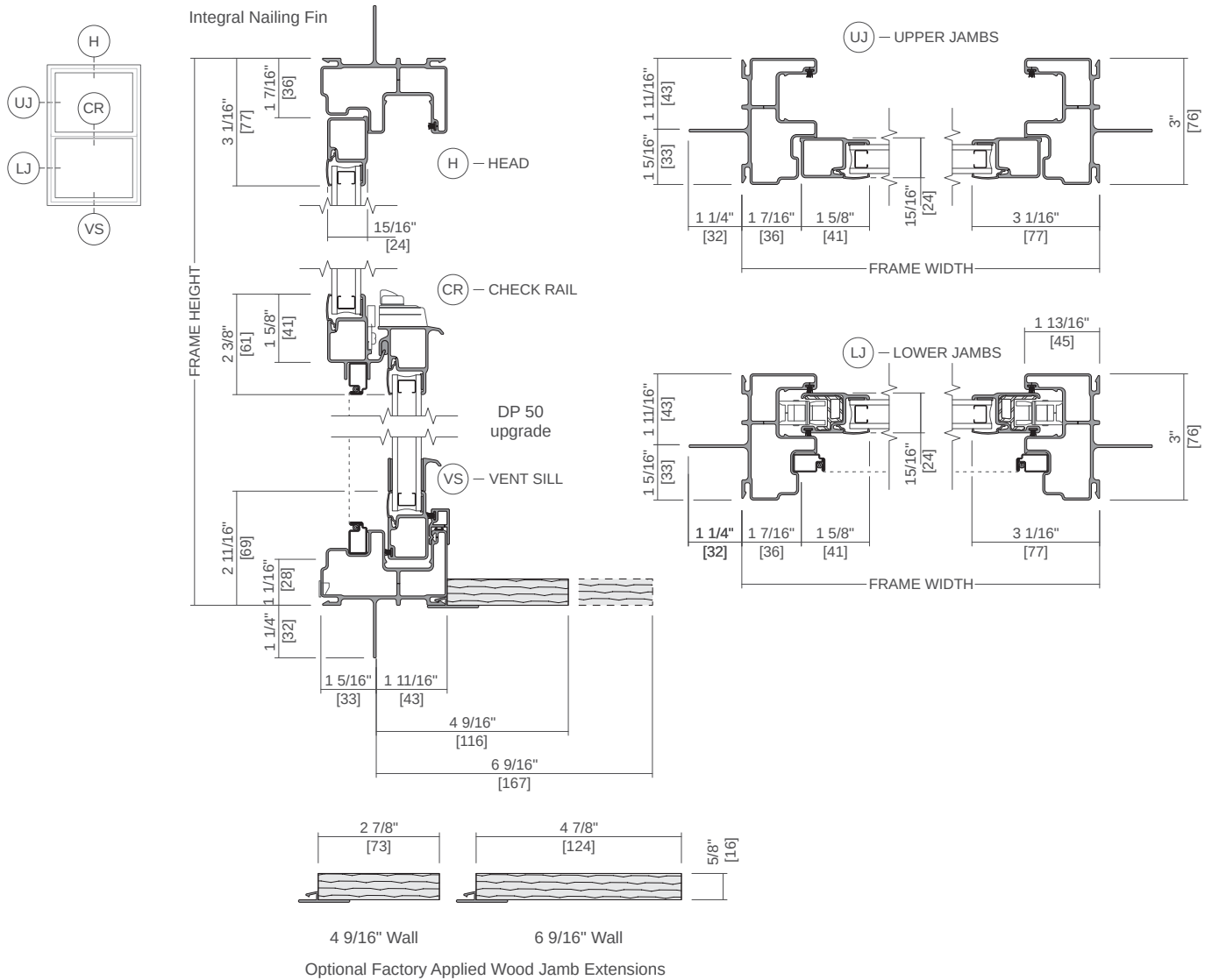
Unit Sections





Impervia® Single-Hung Windows

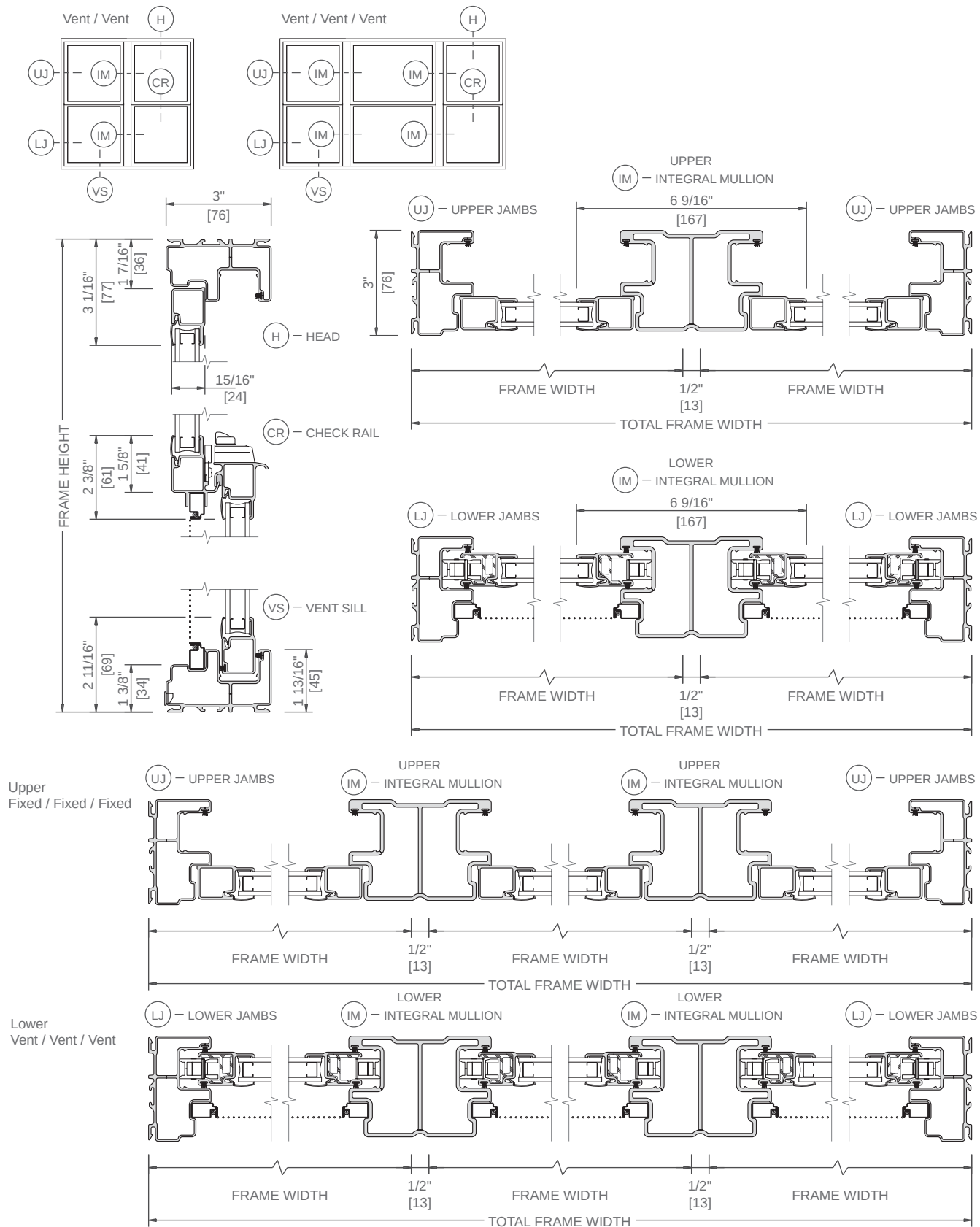
Unit Sections





Impervia® Single-Hung Windows

Unit Sections - Composites



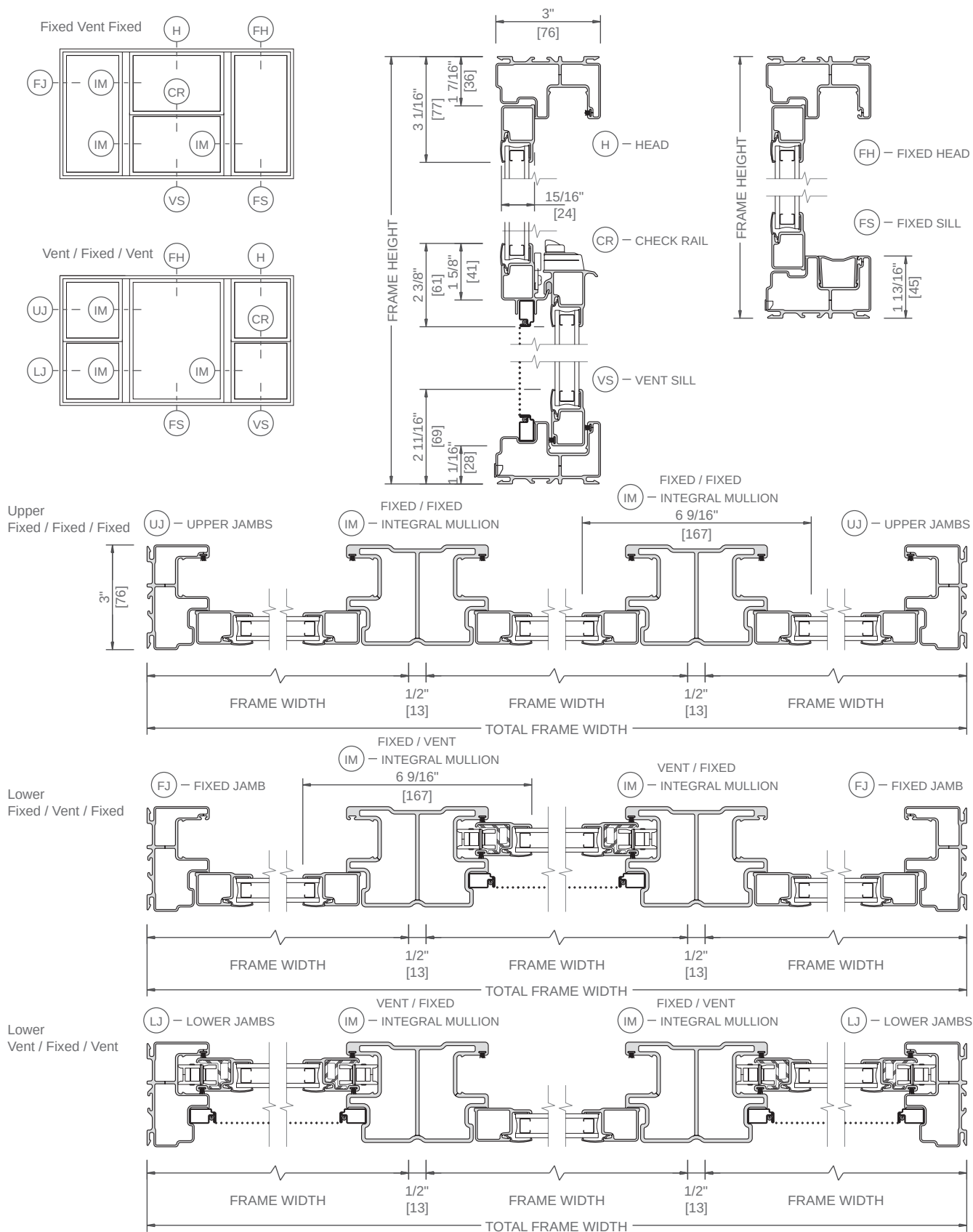
Scale 3" = 1' 0"

All dimensions are approximate.



Impervia® Single-Hung Windows

Unit Sections - Composites



Scale 3" = 1' 0"

All dimensions are approximate.