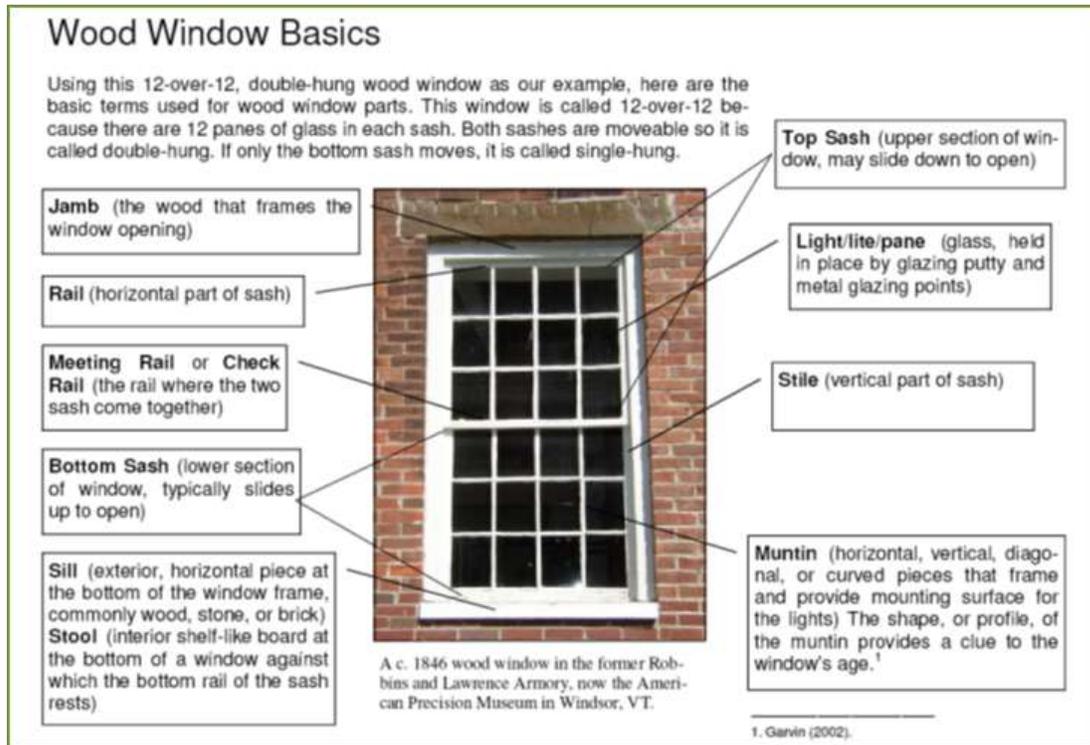


## REPLACEMENT WINDOWS FOR HISTORIC BUILDINGS

AND

## NEW WINDOWS FOR NEW CONSTRUCTION IN HISTORIC OVERLAYS



### Why Keep Old Windows?

Repairing and maintain existing windows maintains value and historic character, is environmentally responsible and can be much less expensive.

Historic windows can be endlessly repaired whereas replacement windows have relatively short warranties and once the window fails, the entire sash must be replaced which creates an endless cycle of purchasing, replacing and sending materials to the landfill. Manufactures often offer lifetime warranties but what they don't make clear is that 30% of the time, a replacement window will be replaced within 10 years. Many old windows are made of old growth wood that is denser and therefore longer lasting than wood available today.

Consider using a "sash pack" that retains the original window casings, frame and sill. It's cheaper than a full replacement and allows you to retain some of the historic features that create value in a historic building.

## **What About Energy Efficiency?**

Multiple studies have shown that properly maintained windows with the addition of storm windows, particularly interior storm windows, can be as efficient as replacement windows, and also continue to maintain the integrity of a building's historic fenestration. While the exact figure will vary depending on the type of window installed and whether or not a storm window is used, studies have found that it could take 100 years or more for a replacement window to pay for itself in energy savings. In addition, the majority of energy loss is through the roof so it may be more cost efficient to replace or increase attic insulation rather than replacing windows.

Storm windows should use blind-stops and have a meeting rail that lines up with the existing meeting rail.

## **ASSESSING THE DETAILS**

**MATERIAL TEXTURE:** The material should have a flat finish. Hi-gloss materials, such as most vinyl windows, are not appropriate.

**CASINGS:** Many new windows do not consider appropriate casings. Sometimes the casings are sold as an accessory. Windows on a frame building should have a flat 4" to 6" casing and windows within a masonry building should have a brick mold.

**PAIRED WINDOWS:** Paired windows or ribbons of multiple window sashes should have a mullion between them of 4" to 6". Historically, the side of windows had chains and ropes in order to operate the sashes. If this space isn't mimicked on the new windows, the overall dimension and profile are incompatible with a historic neighborhood. (Mullions may not be required between casement windows, depending on the situation.)

**SASH DIMENSIONS/PLANES:** Historically the four sides of a sash were different dimensions, and a new window should be similar. Historically the tallest section was the bottom rail, and the top had an approximately 2" meeting railing. In addition, the two sashes were in different planes allowing for the movement of one or both sashes.

**SHADOW LINES:** The thickness of the frame should be similar to historic windows. A typical residential building was approximately 1 ¾" thick while larger windows might be as much as 2.5" thick. One inch is usually too shallow to mimic the shadow lines of historic windows.

**WEEP HOLES:** Large, conspicuous exterior weep holes are not appropriate. When present, weep holes should be minimal, flat, and match the color of the sash in order to minimize their visibility.

**GRIDS (Also known as muntins, dividers, and glazing bars):** Use simulated divided lights (SDL) with spacer bar or no muntin grills. Bars should range between 5/8" to 1 1/4", depending on the style of the window.

**SCREENS:** Screens, blinds, and muntins should not be between-the-glass or be non-removable.

**EMERGENCY EGRESS:** When a casement-style window is required for a dormer to meet emergency egress requirements, but other similar dormers on the structure have double-hung windows, a new casement that incorporates an applied grill pattern mimicking double-hung sashes should be selected as these are readily available from multiple common manufacturers, are more compatible with the building's existing historic millwork, and fully meet applicable code requirements for secondary exit of a residential sleeping space. This type of grill pattern would not be appropriate for non-dormer windows. DH windows with 2 tilt sashes also meet emergency egress requirements.

Window Manufacturer	Model or Series	Exterior Material	Preferred Muntin Type & Size	Approved for New Construction	Approved for Replacement Windows in Preservation Overlay	Notes
Alliance Window Systems	Windgate	Vinyl		X	X	Fusion Welds, Beveled Frames
Alside	Mezzo, Sheffield, UltraMaxx, Fusion	Vinyl		X	X	Fusion Welds, Beveled Frames
American Craftsman	50 Series, 70 Series	Vinyl		X	X	Fusion Welds, Large Weep Vents
American Craftsman	Architectural Series	Aluminum	None	✓	X	SDL does not have spacer between glass
Andersen	100 Series	Fibrex	Full Divided Light, 3/4"	X	X	
Andersen	200 Series	Vinyl	None	X	X	High Sheen, One-piece Exterior
Andersen	400 Series Vinyl	Vinyl		X	X	meeting rails and top/bottom rails not one piece
Andersen	400 Woodwright	Fibrex	Full Divided Light, 3/4", 7/8", with spacer bar	✓	X	
Andersen	A Series	Fiberglass, Fibrex	Full Divided Light, Full Divided Light with Energy Spacer, 5/8"		X	Need to see sample
Andersen	E Series	Aluminum	Full Divided Light, 5/8"	✓	X	
Andersen	Renewal	Fibrex	Full Divided Light, 3/4"		X	Need to see sample
Atrium		Vinyl		X	X	Fusion Welds, Beveled Frames
Champion		Vinyl		X	X	Fusion Welds, Beveled Frames
Earthwise		Vinyl		X	X	Fusion Welds, Beveled Frames
Harvey	All Wood	Aluminum	Simulated Divided Lite with Spacer Bar (SDLS)	✓	X	
Interstate	CompositWood	Composite		X	X	Fusion Welds, Glossy Finish, Tall top rail
Jeld-Wen	Auraline	Composite		✓		

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Jeld-Wen	Brickmould Vinyl	Vinyl		X	X	Fusion Welds
Jeld-Wen	Builders Vinyl V-2500	Vinyl		X	X	Fusion Welds, Beveled Frame
Jeld-Wen	Premium Vinyl V-4500	Vinyl		X	X	Fusion Welds, Beveled Frames
Jeld-Wen	Siteline	Aluminum	Simulated Divided Lites (SDL), 7/8"	✓	X	
Jeld-Wen	W-2500 Series	Aluminum	Simulated Divided Lites (SDL), 7/8"	✓	X	Fusion Welds
Jeld-Wen	W-5500 Series	Aluminum	Simulated Divided Lites (SDL), 7/8"	✓	X	
Jeld-Wen	Custom Wood	Wood	Simulated Divided Lites (SDL), 7/8"	✓*	✓*	Case by case review
Lincoln Windows	Aluminum Clad	Aluminum	Simulated Divided Lites (SDL), 7/8" or narrower approved	✓	X	
Lowen	All Wood	Wood	5/8, 1 1/8" putty-style	✓	✓	
Lowen	Metal-Clad	Aluminum	5/8, 1 1/8" putty-style	✓	?	Check with MHZC staff
Lowen	Cyprium	Aluminum or Bronze	5/8, 1 1/8" putty-style	✓	X	
Luxview	All with non-visible weep holes	Aluminum		✓	X	Only approved if weep holes are not visible and are hidden
Marvin	Elevate	Fiberglass	Simulated Divided Lite with Spacer Bar (SDLS)	✓	X	
Marvin	Essential	Fiberglass	None	✓	X	
Marvin	Signature Ultimate	Aluminum	5/8, 1 1/8" putty-style	✓	X	
Marvin	Signature Ultimate G2	Aluminum	Simulated Divided Lite with Spacer Bar (SDLS), or None	✓	X	
Marvin	Signature Ultimate Wood	Wood	Authentic Divided Lite (ADL), Simulated Divided Lite with Spacer Bar (SDLS), or None	✓	✓	

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MGM Industries	Sienna Series	Vinyl		X	X	Fusion Welds
MGM Industries	Southern Rose 7010 Series	Vinyl	3/4"		X	
MGM Industries	Southern Rose 8010 Series	Vinyl	3/4"	X	X	
MGM Industries	Southern Rose 4710 Casement series	Vinyl	3/4"	✓		
MGM Industries	Southern Rose 8017 Series	Vinyl	3/4" Simulated Divided Lite with Spacer Bar	✓	X	Mechanical or Mitred Joints
MGM Industries	Southern Rose 8027 Series	Vinyl	3/4" Simulated Divided Lite with Spacer Bar	✓	X	
Monarch	Majestic	Aluminum	7/8, 1 1/2"	✓	?	Check with MHZC staff
Noradex	Extreme 3000 & 8000 Series	Vinyl		X	X	
Pella	250 Vinyl	Vinyl		X	X	
Pella	Reserve Traditional	Wood	7/8" Integral Light Technology (ILT) with between-the-glass nonglare spacer	✓	✓	
Pella	Reserve Traditional	Aluminum	7/8" Integral Light Technology (ILT) with between-the-glass nonglare spacer	✓	X	
Pella	Reserve Contemporary	Aluminum	7/8" Integral Light Technology (ILT) with between-the-glass nonglare spacer	✓	X	
Pella	Lifestyle	Aluminum	7/8" Simulated Divided Light with between-the-glass spacer	✓	X	
Pella	Impervia	Fiberglass		✓	X	
Ply Gem	1500 Vinyl Collection	Vinyl		X	X	
Ply Gem	Mira	Aluminum	7/8"	✓	X	
Ply Gem	Pro Series 200	Composite	No Grids, or SDL with Shadow Bar	✓	X	

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Precision Millworks	(Enviroguard) BT30 300 Series, Series 100	Cellular PVC	Simulated Divided Light (SDL) with True Light Filler (GBG)	X	X	
Precision Millworks	(Enviroguard Series 200	Wood Sash and Frame, PVC Trim	True Divided Light, Simulated Divided Light (SDL) with True Light Filler (GBG)	X	X	
Preservation		Vinyl		X	X	Fusion Welds, Beveled Frames
Quaker	AdvantEdge	Vinyl		X	X	Fusion Welds, Beveled Frames
Quaker	Manchester	Vinyl		X	X	Fusion Welds, Beveled Frames
Quaker	Brighton	Aluminum	7/8" SDL with internal shadow bar	✓	X	
Quaker	CityVu	Aluminum		✓	X	
Reliabilt		Vinyl		X	X	
Sierra Pacific	Premium All-Wood	Wood	Simulated Divided Light, (Putty or Traditional, (5/8" or 7/8"))	✓	✓	
Sierra Pacific	FeelSafe, H3, Monument, Premium, Westchester	Aluminum	Simulated Divided Light, (Putty or Traditional, (5/8" or 7/8"))	✓	X	
Sierra Pacific	Builders & Designers 8000 Series, 8500 Series	Vinyl		X	X	Fusion Welds, Beveled Frames
Sun Windows	Vinyl 57	Vinyl		X	X	Fusion Welds, Weep holes, Some with beveled frames
Sun Windows	USA Clad	Aluminum clad wood	SDL, 5/8"	✓	X	
Sun Windows	Patriot Casement	Aluminum clad vinyl	SDL with Inner Bar	✓	X	

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Tucker	Classic Series 1100	Wood	SDL, 7/8"	✓	✓	
Tucker	Traditional Series 2100	Wood	SDL, 7/8"	✓	✓	
Tucker	Timeless Series 2200	PVC	SDL, 7/8"		X	Need to see sample
Tucker	Modern Series 2300	Vinyl			X	Need to see sample
ViWin Tech	1150	Vinyl		X	X	Fusion Welds, Beveled Frames
Weather Shield	Aspire Series	Vinyl		X	X	(May have been discontinued)
Weather Shield	Premium Wood Series	Wood	SDL, 5/8", 7/8"	✓	✓	
Weather Shield	Premium Series	Aluminum	SDL, 5/8", 7/8"	✓	X	
Weather Shield	Signature Series	Aluminum	SDL, 5/8", 7/8"	✓	X	
Wincore	400 Series, 500 Series, 5400 Series, 7700 Series, 8400 Series, 8800 Series	Vinyl		X	X	
Window Craft		Wood	True Divided Lite	✓	✓	
Window World		Vinyl		X	X	Fusion Welds, Beveled Frames
Windsor	Pinnacle Clad	Aluminum		✓	X	
Windsor	Pinnacle Primed	Wood		✓	✓	Wood Casing Only
Win-Gate	Heritage E95 outswing	Aluminum Clad		✓	✓	
Win-Gate	Wood Plus E-80 Series	Aluminum Clad		✓	✓	Should be no visible weep holes.
A&S	Specialty	Steel		✓	✓*	* May be appropriate for Industrial, Commercial, or Tudor Revival Buildings

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Hopes	Specialty	Steel, Bronze		✓	✓*	* May be appropriate for Industrial, Commercial, or Tudor Revival Buildings
Kawneer (Formerly Traco)	Specialty	Aluminum		✓	✓*	* May be appropriate for Industrial, Commercial, or Tudor Revival Buildings
St. Cloud Window Series 2500	Specialty	Steel		✓	✓*	* May be appropriate for Industrial, Commercial, or Tudor Revival Buildings
Torrance	Specialty	Steel		✓	✓*	* May be appropriate for Industrial, Commercial, or Tudor Revival Buildings