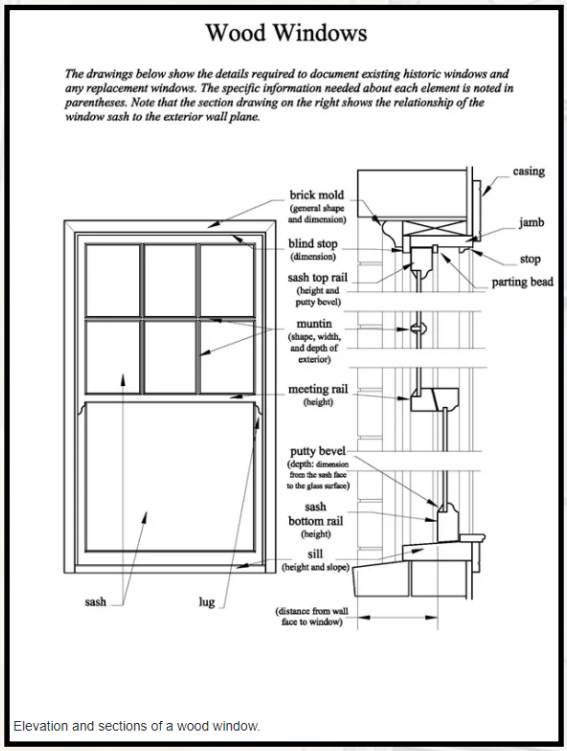
Treatment Resource Guide: Historic Windows

Windows are considered a character-defining features of a building. “When historic windows exist, they should be repaired when possible. When they are too deteriorated to repair, selection of the replacement windows must be guided by Standard 6. Design, visual qualities, and materials are specific criteria provided by the Standard that are pertinent to evaluating the match of a replacement window. Evaluating the adequacy of the match of the replacement window involves the consideration of multiple issues.” Existing windows must be repaired rather than replaced. If these windows are deteriorated beyond what is technically or feasibly-appropriate repair, thorough documentation of the need for replacement **must** be submitted before any replacement windows should be installed.

Minimum Documentation Required for Proposed Window Replacement:

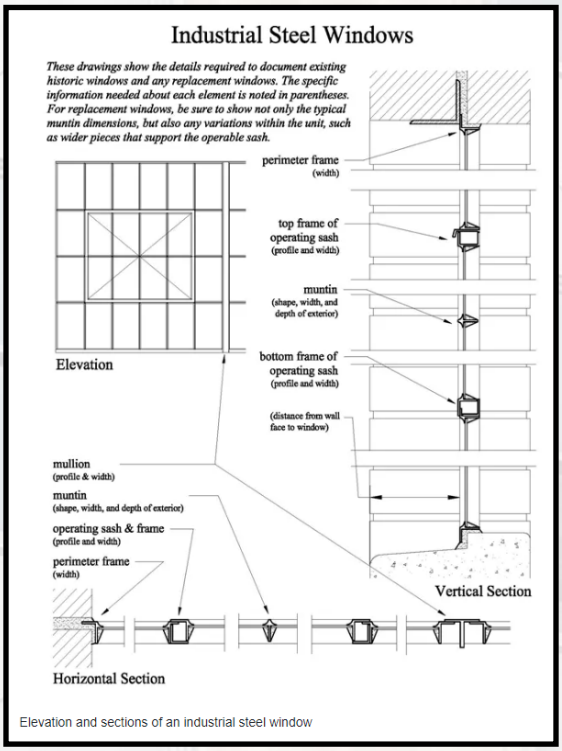
Documentation Requirements for Proposed Window Replacement

- Clear Photographs of *Existing* Windows
- If replacement windows are proposed due to deterioration of existing windows, the deterioration ***must*** be documented through detailed, comprehensive photographs.
- Dimensioned Drawings Showing the Elevation and Horizontal and Vertical Sections of *Existing* Windows
- Dimensioned Drawings Showing the Elevation and Horizontal and Vertical Sections of *Proposed Replacement* Windows



Elevation and sections of a wood window.

Images from the National Park Service—Technical Preservation Services



Elevation and sections of an industrial steel window

**Manufacturers’ cut sheets are usually not an adequate substitute for detailed drawings. The drawings show the existing and proposed windows in relation to the specific building being rehabbed. The manufacturers’ cut sheets do not provide this level of detail needed to assess the compatibility of the replacement windows.

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Proposed Replacement Windows

Factors to Consider in Evaluating the Match of a Replacement Window

Compatibility with the historic character of the building

Window unit placement in relation to the wall plane

Window frame size and shape

Glass size, divisions, and characteristics

Sash elements width and depth

Materials and finish

Matching the appearance and design of historic windows is vital component of replacement window considerations.

In this example, the replacement windows (right) do not match the appearance, size, design, profiles, or proportions of the historic windows (left).

Why might the proposed replacement windows not meet the *Standards*?

- The existing windows can, and should, be repaired. There is not adequate documentation to show that replacement is necessary.
- Proposed replacement windows do not match the appearance, size, design, proportions or profiles of the existing windows.
- Proposed replacement windows are generally incompatible with the historic character of the building.
- Documentation was not provided to show that the proposed replacement windows match the character of the building (when no windows currently exist).
- Proposed replacement windows give a false sense of historic development and character.
- Proposed replacement windows could not be properly evaluated because the required documentation (drawings of: elevation, horizontal sections, and vertical sections) was not provided.

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Basic Window Components

Example is a wooden six-over-six (6:6), single-hung window.

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Additional Resources:

Historic Windows Preservation, Rehabilitation, and Documentation:

Documentation Requirements for Proposed Window Replacement

Tech Notes—Windows #1: Planning Approaches to Window Preservation

Tech Notes—Windows #10: Temporary Window Vents in Unoccupied Historic Buildings

Tech Notes—Windows #7: Window Awnings

Windows and Energy Efficiency:

Weatherization of Historic Buildings: Repair and Upgrade Windows and Doors

Preservation Brief #3: Improving Energy Efficiency in Historic Buildings

Tech Notes—Windows #3: Exterior Storm Windows: Casement Design Wooden Storm Sash

Tech Notes—Windows #2: Installing Insulating Glass in Existing Steel Windows

Tech Notes—Windows #5: Interior Metal Storm Windows

Tech Notes—Windows #8: Thermal Retrofit of Historic Wooden Sash Using Interior Piggyback Storm Panels

Tech Notes—Windows #9: Interior Storm Windows: Magnetic Seal

Tech Notes—Windows #11: Installing Insulating Glass in Existing Wooden Sash Incorporating the Historic Glass

Tech Notes—Windows #15: Interior Storms for Steel Casement Windows

Repairing Historic Windows:

Preservation Brief #9: The Repair of Historic Wooden Windows

Preservation Brief #13: The Repair and Thermal Upgrading of Historic Steel Windows

Preservation Brief #33: The Preservation and Repair of Historic Stained and Leaded Glass

Incentives: A Guide to the Federal Historic Preservation Tax Incentives Program for Income-Producing Properties: Windows

Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings: Windows

Preservation Tech Notes—Windows #14: Reinforcing Deteriorated Wooden Windows

Preservation Tech Notes—Windows #16: Repairing and Upgrading Multi-Light Wooden Mill Windows

Preservation Tech Notes—Windows #17: Repair and Retrofitting Industrial Steel Windows

Preservation Tech Notes—Windows #19: Repairing Steel Casement Windows

Preservation Tech Notes—Windows #22: Maintenance and Repair of Historic Aluminum Windows

Replacement Windows or New Window Openings:

Interpreting the Standards Bulletin #14: New Openings in Secondary Elevations or Introducing New Windows in Blank Walls

Interpreting the Standards Bulletin #23: Selecting New Windows to Replace Non-Historic Windows

Replacement Windows Where No Historic Windows Remain

Replacement Windows That Meet the Standards

Preservation Tech Notes—Windows #4: Replacement Wooden Frames and Sash: Protecting Woodwork Against Decay

Preservation Tech Notes—Windows #6: Replacement Wooden Sash and Frames with Insulating Glass and Integral Muntins

Preservation Tech Notes—Windows #12: Aluminum Replacements for Steel Industrial Sash

Preservation Tech Notes—Windows #13: Aluminum Replacement Windows with Sealed Insulating Glass and Trapezoidal Muntin Grids

Preservation Tech Notes—Windows #18: Aluminum Replacement Windows with True Divided Lights, Interior Piggyback Storm Panels, and Exposed Historic Wooden Frames

Preservation Tech Notes—Windows #21: Replacement Wood Sash Utilizing True Divided Lights and An Interior Piggyback Energy Panel

Incentives: A Guide to the Federal Historic Preservation Tax Incentives Program for Income-Producing Properties: Replacement of Severely Deteriorated Windows