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Alternative Materials and Their Use in Historic Districts

Prepared for the Historic Preservation Office City of Columbus, Ohio Planning Division



Introduction

The appropriateness of alternative materials in local historic districts is an issue often considered by Historic Preservation Commissions and their staff. Most historic preservation ordinances and design guidelines have an emphasis on repairing original features and if repair is not possible, replacing the features with similar materials. The use of synthetic materials in historic districts is generally discouraged since these materials can be incompatible in their appearance, profile or texture with historic building features. However, with increasing concerns over sustainability and the expense and unavailability of traditional historic materials, many Commissions are revising their guidelines with more flexibility towards the appropriateness of alternative materials.

This report was prepared for the Historic Preservation Office of the City of Columbus, Ohio which in 2013 was conducting a review of its existing design guidelines. At the request of the Historic Preservation Officer a survey was conducted of eight cities similar in size to Columbus to review the various approaches to the use of most common alternative materials used in historic districts. The cities and informants included the following:

Boston, Massachusetts—Ellen Lipsey, Boston Landmarks Commission El Paso, Texas—Providencia Velazquez, Historic Preservation Officer Nashville, Tennessee—Robin Zeigler, Metro Historic Zoning Commission Charlotte, North Carolina—Stewart Gray, Preservation Planner Memphis, Tennessee- Nancy Jane Baker, Landmarks Commission Jacksonville, Florida—Lisa Sheppard, Senior Historic Preservation Planner Indianapolis, Indiana—Ashley Payne, Preservation Planner Austin, Texas—Steve Sadowsky, Historic Preservation Officer

In addition to the eight major cities which participated in this study, the Consultant also included information on the acceptance of alternative materials based on his work with preparing design guidelines for the following communities during the past decade.

Fernandina Beach, Florida Lexington, Kentucky Covington, Louisiana Monroe, Louisiana Oklahoma City, Oklahoma Waynesville, North Carolina Franklin, Tennessee Lynchburg, Virginia Roanoke, Virginia Olympia, Washington



Consultant, Thomason and Associates, Preservation Planners , Nashville, Tennessee www.thomasonandassociates.com

Cementitious Siding

Cementitious siding is a product popularized by the James Hardie Company in the mid-1980s. Cementitious siding is made from cement mixed with ground sand, cellulose fiber and other additives. Its content is approximately 45 percent Portland cement, 45 percent silica sand, and 10 percent wood fiber. It's cured with pressurized steam to increase its strength and stability. The siding comes in 4" to 12" widths and 1/4" and 7/16" thicknesses. There are different surface patterns, including wood-grained and smooth. Horizontal siding has three main options: beaded, Dutch and traditional. Shaped siding is available in octagons, squares, half rounds and shingles. Vertical siding can have a stucco look, be smooth or mimic cedar. Soffits are also available in smooth or cedar textures. Any of the siding can be ordered pre-finished or ready-to-paint.

Cementitious siding is considered to be a "green" material and typically gets high marks from environmental and sustainability organizations. The product is breathable as well as termite and fire resistant. Many manufacturers claim that the material will last for fifty years or more but since it is a relatively new product its longevity is unknown. The smooth lap siding has an appearance similar to wood siding as long as traditional widths and profiles are followed. The grained siding is a much less compatible product since it does not have the appearance, texture and profile of traditional wood siding.



Cementitious siding was applied to the exterior of this house and has the smooth, lap siding finish exposed.



Cementitious siding which is manufactured with a wood grain appearance is considered to be incompatible with the appearance of traditional wood siding.

The use of cementitious siding in historic districts is considered appropriate under certain circumstances by many commissions. All of the cities surveyed, with the exception of Boston, allow cementitious siding to be used for new infill construction, additions and outbuildings. The smooth lap siding product is considered to be a compatible material for new construction in historic neighborhoods.

There are several different approaches to the use of cementitious siding as a replacement material on a historic dwelling where the original wood siding has deteriorated. Indianapolis and Nashville do not allow the use of this material as a substitute for wood on any elevation. El Paso allows the use of cementitious siding only on rear or non-readily visible side elevations. Jacksonville and Memphis only allow the use of this material on a rear elevation for the bottom rows (24" in Memphis) of siding. Charlotte and Austin allow the replacement of deteriorated wood siding with cementitious siding on primary elevations if the material matches the original siding in texture, depth and appearance.

In the other cities and smaller communities there is widespread acceptance that cementitious siding in the smooth lap design is appropriate for new construction, rear additions and garages. Most communities will not allow this material to be installed on primary elevations but there is more flexibility on rear elevations or those not readily visible from the street. The key issue for most Commissions is requiring the applicant to demonstrate that the siding cannot be repaired and/or maintained. The lower rows of siding close to the ground often are exposed to more moisture infiltration and the approaches of Jacksonville and Memphis reflect the flexibility towards this common issue.

Doors and Garage Door Materials

Commissions are often faced with requests to allow alternative materials for the replacement of doors on historic buildings and outbuildings such as garages. Most commissions will only allow the replacement of doors on primary facades if the original door is missing or damaged beyond repair. Similarly, the replacement of doors on historic garages is also often requested when these doors are beyond repair or have already been replaced.

Doors

Doors come in a wide variety of alternative materials such as aluminum, steel, vinyl, fiberglass or composites. Composite doors are comprised of wood and vinyl, wood and fiberglass and similar materials. Steel security doors are often requested by property owners for rear doors where safety is an issue.





Examples of a composite door (left) and steel security door (right).

Garage Doors

Historic district guidelines generally recommend the preservation of original garages and their materials and elements such as garage doors. Garage doors are often replaced due to deterioration, failure of the operating hardware, or the need to accommodate larger vehicles than the garages were originally designed for. For garages which have missing or non-repairable original garage doors some commissions require that new wood garage doors be installed while others allow replacement doors of alternative materials. The most common replacement materials are vinyl on a metal frame or solid metal doors of steel or aluminum. Many commissions are more flexible on the appearance of these doors depending on their visibility from the street.



While many alternative material garage doors are of solid or raised panels (left) others more closely resemble a traditional wood garage door design (right).

There are differing approaches to allowing the installation of metal, fiberglass and composite material doors on rear elevations or secondary elevations not visible from the street. These types of doors are approvable in El Paso, Nashville, Jacksonville, and Austin. In Memphis, metal doors are approved but not those of composite materials. In Boston rear elevations are not reviewed so these types of doors can be installed. Metal or composite doors are not approvable in Charlotte or Indianapolis. In the smaller communities these types of materials are generally approvable as long as they are not visible from the public right-of-way.

Alternative material garage doors are approved in many communities as long as the designs are closely compatible with the original garage doors. Several manufacturers of garage doors now produce overhead track doors which resemble traditional designs. Nashville, Jacksonville, and El Paso allow the installation of metal, vinyl and fiberglass garage doors. Austin and Memphis allow new garage doors of steel or aluminum but do not allow vinyl. Indianapolis, Charlotte and Boston require wood garage doors and do not allow those of metal or vinyl. In the smaller cities and communities most commissions allow metal or vinyl garage doors. In most cases garages are given a fair amount of flexibility in their review since many are located at rear elevations, along alleys or recessed on a side elevation and not readily visible from the public right-of-way. Garages which are directly on a side street or otherwise readily visible from the street are reviewed more stringently and in these cases there may be the requirement that the property owner install a compatible wood door.

Porch Materials

Original porch materials are generally of wood although brick, concrete, concrete block and stone were also widely used, especially in the early 20th century. Wood elements on porches include columns, railings, floors, valences and friezes. Columns in the Victorian era were often milled in a variety of shapes including square, round and chamfered. By the early 20th century porches were generally designed with classically-derived designs such as Tuscan, Doric, Ionic and Corinthian. The rise of the Craftsman movement led to porch columns of tapered wood and with the columns placed on pedestals or piers of brick, concrete or stone. Because of their exposure to the elements, porches require regular maintenance and repair.

Composite Porch Floors

A popular alternative material for porch floors is a composite product made of recycled plastic and wood. This material is considered to be "green" in that most products are made from 50% recycled plastic (including plastic grocery bags) and 50% recycled wood products from woodworking operations such as sawdust and discarded pallets. There are a variety of companies which manufacture these products with the Trex Company one of the best known. This is a relatively new product so its life expectancy is still unknown. The manufacturers claim the product will last longer than wood and that the wood content will protect against fading from ultra-violet (UV) rays.

These materials are manufactured into imitation wood planks that are then attached to a substructure much like a wood porch floor. Composite porch floors can be manufactured in a variety of textures and colors.





Composite porch floor materials are manufactured in a variety of colors and textures including imitation wood floor boards.



This example of a composite porch floor has a smooth finish in a light color.

The use of composite porch floors appears to be gaining favor as an appropriate alternative material. Of the cities surveyed, half allow the use of composite porch floors on the primary elevations while half do not. In Jacksonville, a committee is now proposing that this material be staff approved on primary elevations as long as it is painted. In Memphis, this material has also been approved on primary elevations depending on the visibility from the street. All of the cities surveyed allowed this material to be used on porches on side and rear elevations not visible from the public right-of-way.

In the other cities and smaller communities commissions are generally receptive to this material because of its recycled composition, potential longevity, and compatibility to recede into the background on a historic wood porch. Denial of this material for front porches is generally based on visibility from the street. This material has widespread acceptance for rear and side porches not visible from the street and infill buildings in historic districts.

Fiberglass Porch Columns

During the past ten years the use of fiberglass columns has increased in historic districts. Fiberglass is a material consisting of extremely fine filaments of glass that are combined in yarn and woven into fabrics, used in masses as a thermal and acoustical insulator, or embedded in various resins to make doors, windows and porch columns. Fiberglass is considered to be a "green" material since its manufacturing process requires less energy than other synthetic materials. It appears to have good longevity and is largely made from an abundant material (sand). Fiberglass columns are composed of very thin glass fibers which are combined with a plastic material reinforcing the plastic, resulting in a rigid material. One of the most widely used fiberglass composite materials is fiberglass reinforced polymer, commonly known as FRP. Fiberglass reinforced polymer is the primary material used for composite or fiberglass columns which are manufactured by several companies.

Most fiberglass columns on the market are designed in round or square shapes and mimic classical orders such as Tuscan, Doric, Ionic and Corinthian. Several companies make tapered columns in imitation of Bungalow and Craftsman porch columns. Fiberglass columns in the shape of Victorian milled columns for styles such as Queen Anne and Italianate do not appear to be on the market as of yet. Comments about these columns by property owners on various web sites show general satisfaction with durability and appearance. Fiberglass columns are currently more expensive than wood.





Most fiberglass columns are manufactured to resemble classical columns such as Corinthian (left) and Doric (right).



In addition to columns, other porch elements such as balusters and railings can also be made from fiberglass as this photo illustrates.

Fiberglass columns are considered to be an acceptable material by several cities if the original columns are badly deteriorated, missing, or previously replaced. Austin, Jackson-ville, El Paso and Indianapolis allow these types of porch columns on primary elevations if the dimensions, proportions and texture has the appearance of wood columns. Memphis does not allow fiberglass columns on primary elevations but does allow them on rear or non-readily visible side elevations. Nashville, Charlotte, and Boston do not approve these types of columns for historic rehabilitation projects on any elevation.

In the other cities and smaller communities there is general acceptance of fiberglass columns for rear elevations and growing acceptance for primary elevations. Generally if the column has the correct proportions to resemble a historic wood column Commissions will grant approval. There is also the understanding that this material is relatively new for porch columns and the need to monitor how these columns will weather over time.

Vinyl Porch Columns

Columns of vinyl are now widely manufactured and come in a wide variety of designs. These are most commonly used for new construction but some Commissions have been requested to approve this column material in historic districts. Like vinyl siding, vinyl columns are made from polyvinyl chloride (PVC) and are manufactured to be both standalone columns and as a "wrap" around existing wood columns.

Vinyl is highly toxic in its manufacturing process and is not considered a "green" material. While vinyl can be molded easily into a variety of column shapes and forms, its exterior surface and texture has difficulty resembling wood. Vinyl columns typically have a bright sheen and do not have the muted surface or varied textures that historic wood columns have. The designs of many of these columns and other porch elements are often over-or under-sized compared to the dimensions of traditional wood columns. There is also concern over the amount of fading and stippling of vinyl surfaces due to exposure to UV rays over time.





Vinyl porch columns are available in a variety of shapes and sizes including designs made to resemble Victorian-era milled columns but are not considered a green material.



Vinyl is also used to wrap wood porch columns but is not considered a green material.

Almost all of the Commissions surveyed do not allow the installation of vinyl columns or use of vinyl wrap on a historic house's primary or secondary elevations. The only exception is El Paso which does allow vinyl columns on primary elevations if they closely match the original in design and dimensions. In the other cities and smaller communities there is general agreement that vinyl columns are not appropriate for the main façade. However, vinyl columns may be approved at rear elevations or those not readily visible from the street, if they are in traditional designs and appropriate to the style of the house. Commissions try to discourage property owners from using vinyl columns because of questionable longevity and potential changes to the column's appearance due to long exposures to UV rays.

Synthetic Slate Roof Shingles

Slate is an important historic roof material and was widely used in many areas of the country in the 18th, 19th and early 20th centuries. It was the roof material of choice in many cities since it was durable and fire-resistant. Slate is a metamorphic rock that splits into thin, smooth-layered surfaces. The durability of a slate roof depends on the type of slate used. Many slate roofs have lasted well over 100 years and remain in good condition. Softer slate may begin to flake, crack and crumble after fifty to sixty years. Slate roofs cannot be repaired or restored after the slate has reached the end of its useful life. Even the hardest slate roofs can develop cracks and breaks over time. Slate is stone and some individual slate pieces may have tiny imperfections or fractures that are not evident at the time of installation. Environmental factors such as freeze-thaw cycles may eventually cause these slates to crack, break or fall off.

Some cities with extensive amounts of slate roofs are now finding that the slate installed in the late 19th century is reaching the end of its life expectancy. Most Commissions encourage the installation of new slate roofs but recognize that new slate roofs are three to four times the cost of asphalt or fiberglass shingles. In these cases the use of synthetic slate shingles may be an option.

Synthetic slate is manufactured in a variety of materials. Some are made of slate and clay with reinforcing from fiberglass and resins. Others are ceramic based, while others are from recycled post-industrial rubber and plastic. The "greenness" of these materials varies as do their profiles and overall compatibility with historic slate.



Lamarite (left) and DaVinci (right) are two common synthetic slate products.



Example of a synthetic slate roof in a Roanoke, Virginia historic district.

Synthetic slate materials have been approved in a number of historic districts. Indianapolis, Charlotte, and Jacksonville all allow the installation of synthetic slate shingles if the original materials are clearly deteriorated and beyond repair. In Nashville slate can be replaced if shown to be unrestorable but the city has yet to receive a request for the use of synthetic slate shingles. Likewise the commission in Austin has yet to receive a request for synthetic slate but would likely approve it if the material was comparable to the original slate.

In Boston, the Landmarks Commission recently approved synthetic slate materials for the roof of a large church building. The material was approved since it has color variations for individual shingles, is made from recycled rubber and the texture and size of the shingles are comparable to the original slate. Memphis and El Paso do not currently allow the installation of synthetic slate. In many of the smaller communities slate was an uncommon roof material so these materials have not been requested. Slate was widely used in Roanoke and Lynchburg, Virginia and these cities allow the use of synthetic slate in their historic districts.

Window Materials

The replacement of original windows with new windows continues to be a major issue for commissions across the country. In recent decades, the growth of the replacement window industry along with the renewed emphasis on energy efficiency led many historic building owners to request the removal and replacement of their original windows. Some commissions will not allow the removal of original windows unless they are clearly demonstrated to be beyond repair. In other communities removal is allowed if the new windows match the original in design and profile. Most guidelines recommend the replacement of non-repairable wood windows with new wood windows to match the original. However, concerns over the longevity of new wood windows has caused some commissions to reconsider the use of alternative materials. The most common window replacement materials are aluminum clad, vinyl, vinyl clad and composite.

Aluminum Clad

Aluminum clad windows typically come with anodized or baked enamel finishes. The baked enamel finish allows for a wide variety of colors to match other colors of the building. Aluminum is used as the facing material over the wood frame for the trim, sash units and muntins. They are often manufactured with double glazing for energy efficiency. Aluminum clad windows have been approved by the National Park Service for tax certification projects where the original windows are beyond repair. Aluminum clad windows are not considered to be particularly "green" because of the large amount of energy expended in the aluminum manufacturing process and the use of new-growth wood in the frame.



Cross section of an aluminum clad window.

Vinyl Clad

Vinyl clad windows are similar to aluminum clad in that the vinyl is wrapped over the wood frame. Vinyl clad windows come in a variety of designs and often have double or triple glazing for energy efficiency. Vinyl windows are not considered to be a "green" material since the vinyl is petroleum based and new-growth wood is used in the frames.

Vinyl

Vinyl windows made of PVC (polyvinyl chloride) and glass are the most common replacement windows available. For historic buildings vinyl windows have been problematic due to their incompatible appearance, inflexibility in expansion and contraction and fading and warping due to UV exposure. They are not considered to be a green material since they are a petroleum based product and difficult to recycle. The longevity of vinyl windows is also an issue with many requiring replacement after only ten to fifteen years of service.

Composite/Fiberglass

Relatively new on the market are windows made of composite materials such as fiberglass and wood and vinyl and wood. These windows are considered to be "greener" than vinyl, vinyl clad or aluminum clad windows since they use recycled materials. These windows typically have more of a "matte" finish than the bright plastic appearance associated with vinyl and vinyl clad windows. Since these materials are of recent vintage their longevity is unknown.



Alternative materials for windows include vinyl clad (left), vinyl (center) and fiberglass (right).



Example of a vinyl clad window approved by the Commission in Roanoke, Virginia

Use in Historic Districts

Most commissions do not allow historic wood or steel windows to be removed and replaced unless they can be demonstrated to be beyond repair. Most commission's first recommendation is to replace windows with new windows to match in materials, design and profile. The acceptance of alternative materials varies depending on which elevation the windows are located and visibility from the street.

Boston does not allow vinyl, vinyl clad or composite windows in their historic districts but does allow aluminum clad on commercial and industrial buildings on a case by case basis. Nashville, Indianapolis, Austin and Charlotte do not allow the use of vinyl or vinyl clad windows on any elevations. Their guidelines do allow the installation of aluminum clad windows with both anodized and baked enamel finishes on primary facades and other elevations. Indianapolis does not allow composite windows while Austin and Charlotte have yet to have requests for these materials.

In Jacksonville and El Paso, design guidelines allow for the use of aluminum clad, vinyl, vinyl clad and composite windows as long as they match in dimensions, profile and overall appearance. Jacksonville does not allow for the use of anodized aluminum windows.



This house in Fort Smith, Arkansas shows the visual effects of an incompatible vinyl window... and also what a hail storm does to vinyl siding.

Memphis does not allow the installation of vinyl windows in their historic districts. The commission does allow vinyl clad and aluminum clad on rear or non-readily visible elevations. Composite window materials are allowed only above the third floor or commercial buildings.

In the other cities and smaller communities the approval of aluminum clad, vinyl or vinyl clad window has been fairly common as long as they match as closely as possible to the original window. Some ommissions have revised their guidelines to no longer approve vinyl but would consider the use of vinyl clad. Recent studies such as those by the Preservation Green Lab provide more confirmation of the economic benefits of preserving old-growth wood windows. Commissions are increasingly using this information to substantiate their positions on not allowing vinyl windows in their historic districts.

Vinyl Fences

Vinyl fencing is an alternative material increasingly requested for approval by property owners in historic districts. Vinyl fencing is available in a variety of traditional designs such as picket fencing and privacy fencing. Applications for approval of vinyl fencing can be for both front yards and side and rear yards. As in the case with other vinyl products, commissions have expressed concerns over the appearance and durability of this material. Vinyl fencing is a relatively new product and its ability to maintain its color and texture given its exposure to UV rays is unknown.



Vinyl fencing is available in imitation of a wood picket fence for front yards (left) and as a solid privacy fence for side and rear yards (right).

Use in Historic Districts

Vinyl fencing is not allowed under any circumstances in Nashville, El Paso, Charlotte, Indianapolis, and Memphis. In Jacksonville and Boston, vinyl fencing is not approvable on front yards but may be installed in rear yards or areas which are not readily visible from the street. In Austin, the use of vinyl fencing is "discouraged" for front yards but allowed on side and rear yards. In the other cities and smaller communities design guidelines often recommend against vinyl fences but allow them as long as they resemble traditional designs. In the past few years more commissions have taken a more restrictive approach to this material for front yards while allowing more flexibility on rear or non-readily visible side yards.

Summary

The appropriateness and use of alternative materials for historic building rehabilitation has been the focus of the National Park Service (NPS) and Historic Preservations Commissions for many decades. This issue was addressed in 1988 with the NPS publication of Preservation Brief 16, "The Use of Substitute Materials on Historic Building Exteriors" by Sharon Park. Since 1988, the range of alternative materials marketed for historic homes has continued to expand. Historic building owners are increasingly requesting the use of alternative materials including buildings in districts subject to design review.

One of these materials, cementitious siding, has been widely adopted and accepted in historic districts for new infill and outbuilding construction. If a property's original wood siding has deteriorated some cities allow the installation of this material on primary elevations while others only allow it on elevations not readily visible from the public right-ofway.

Composite materials of recycled plastic and wood as a substitute for wood porch floors is also approvable in many communities. Of the cities surveyed half allow the use of composite porch floors on the primary elevations. In Jacksonville, a committee is now proposing that this material be staff approved on primary elevations as long as it is painted. In Memphis, this material has also been approved on primary elevations depending on the visibility from the street. All of the cities surveyed allowed this material to be used on porches on side and rear elevations not visible from the public right-of-way. In the other cities and smaller communities Commissions are generally receptive to this material because of its recycled composition, potential longevity, and compatibility to recede into the background on a historic wood porch.

Materials such as fiberglass and vinyl are also considered by Commissions for new porch columns. Austin, Jacksonville, El Paso and Indianapolis allow the installation of fiberglass porch columns on primary elevations if the dimensions, proportions and texture has the appearance of wood columns. Memphis does not allow fiberglass columns on primary elevations but does allow them on rear or non-readily visible side elevations. Nashville, Charlotte, and Boston do not approve these types of columns for historic rehabilitation projects on any elevation. In the other cities and smaller communities there is general acceptance of fiberglass columns for rear elevations and growing acceptance for primary elevations.

Almost all of the Commissions surveyed do not allow the installation of vinyl columns or use of vinyl wrap on a historic house's primary or secondary elevations. The only exception is El Paso which does allow vinyl columns on primary elevations if they closely match the original in design and dimensions. In the other cities and smaller communities there is general agreement that vinyl columns are not appropriate for the main façade. However, vinyl columns may be approved at rear elevations or those not readily visible from the street, if they are in traditional designs and appropriate to the style of the house. Installing new metal or composite material doors on rear elevations or secondary elevations is approved in the majority of the cities surveyed. These types of doors are approvable in El Paso, Nashville, Jacksonville, and Austin. In Memphis, metal doors are approved but not those of composite materials. In Boston rear elevations are not reviewed so these types of doors can be installed. Metal or composite doors are not approvable in Charlotte or Indianapolis. In the smaller communities these types of materials are generally approvable as long as they are not visible from the public right-of-way.

Alternative material garage doors are approved in many communities as long as the designs are closely compatible with the original garage doors. Nashville, Jacksonville, and El Paso allow the installation of metal and vinyl garage doors while Austin and Memphis only allow those of steel or aluminum. Indianapolis, Charlotte and Boston require wood garage doors and do not allow those of metal or vinyl.

Synthetic slate materials have been approved in a number of historic districts. Indianapolis, Charlotte, Nashville and Jacksonville all allow the installation of synthetic slate shingles if the original materials are clearly deteriorated and beyond repair. Boston has approved this material in some cases while Memphis and El Paso do not currently allow the installation of synthetic slate. Synthetic slate has also been approved in small communities such as Roanoke and Lynchburg, Virginia.

Requests for new windows of alternative materials such as vinyl, aluminum clad and composite has been especially common in historic districts in recent decades. Boston does not allow vinyl, vinyl clad or composite windows in their historic districts but does allow aluminum clad on commercial and industrial buildings on a case by case basis. Nashville, Indianapolis, Austin and Charlotte do not allow the use of vinyl or vinyl clad windows on any elevations. Their guidelines do allow the installation of aluminum clad windows with both anodized and baked enamel finishes on primary facades and other elevations. Indianapolis does not allow composite windows while Austin and Charlotte have yet to have requests for these materials. In Jacksonville and El Paso, design guidelines allow for the use of aluminum clad, vinyl, vinyl clad and composite windows as long as they match in dimensions, profile and overall appearance. Jacksonville does not allow for the use of anodized aluminum windows. Memphis does not allow the installation of vinyl windows in their historic districts. The Commission does allow vinyl clad and aluminum clad on rear or non-readily visible elevations. Composite window materials are allowed only above the third floor or commercial buildings. In the other cities and smaller communities the approval of aluminum clad, vinyl or vinyl clad window has been fairly common as long as they match as closely as possible to the original window.

This survey reflects current trends in Historic Preservation Commission design review regarding some of the most common alternative materials used in building rehabilitation. The survey assists in understanding the different approaches towards the acceptance and use of these materials.