

FYI No. 6

SYNTHETIC SIDING

Thousands of historic buildings in Virginia, ranging from George Washington's Mount Vernon to myriad millworkers' cottages, are sheathed in wood siding. Wood siding requires regular maintenance to maintain its structural integrity and its appearance. Paint, the most common finish on exterior siding, is a temporary protective coating that requires regular renewal. Some property owners, concerned with the cost of maintaining old wood siding, consider alternative treatments, such as covering or replacing wood siding with synthetic siding of vinyl or aluminum.

In almost every circumstance, installation of vinyl or aluminum siding, either as a cover or as a replacement for wooden siding, will not solve the problems that the property owners face. In almost every circumstance, installation of vinyl or aluminum siding will compromise a building's historic integrity.

In many circumstances, installation of vinyl or aluminum siding can contribute to more serious problems. For projects seeking federal or state certification, proposals to install synthetic siding will regularly be denied. The following observations are designed to clarify issues involving the installation of synthetic siding.

Failing paint is unsightly, but in many instances it is a symptom of a greater problem.¹ Paint peeling down to bare wood is an indication of excessive moisture in the underlying wood, moisture which can destroy the wood as surely as termites. This problem may be caused by improper surface preparation, failing gutters and downspouts, inadequate flashing, defective plumbing, or by condensation from an improper vapor barrier. Installation of synthetic siding under these circumstances does not address the real problem. Rather than solve the problem, synthetic siding merely masks the symptoms. The potential for undetected and accelerated serious structural problems will increase dramatically. All other problems with exterior woodwork are secondary to this one.

Preservation of the appearance of historic buildings in their context should be a second priority for property owners and managers. Installation of synthetic siding may result in the following changes to the historic building which not only diminish its integrity, but alter the character of its environment as well:

¹Problems with exterior woodwork are analyzed in the Department of the Interior's Preservation Brief 10, "Exterior Paint Problems on Historic Woodwork," available without charge from the Department of Historic Resources.

1. Alteration of the historic appearance

- a. The siding usually changes the scale, texture, and detailing of the building's overall appearance, by covering up historic features such as beveled siding, and by removing or covering decorative trim around windows, doors, and rooflines.
- b. The siding decreases the projection of door and window frames, thus reducing shadow lines and giving the building a flat appearance.

2. Additional deterioration of the historic siding

- a. Insects may use the space between sidings to nest; they are protected from natural enemies and insecticides.
- b. Water can enter through cracks caused by impact or poor installation.
- c. Water vapor (which is always present in occupied buildings) can condense between sidings or between the historic siding and rigid foam backer board, causing the original siding to further rot.

Aluminum siding has many inherent problems, aside from the problems associated with its use on frame buildings. Aluminum is not a maintenance-free material. It tends to dent easily, and it requires regular cleaning. If aluminum siding is ever painted, it will require repainting as often as wood. Paints specially formulated for painting aluminum siding are widely marketed. These problems are now widely recognized, and aluminum siding has become less popular. Vinyl siding, a relatively newer product, is being used more often than aluminum siding.

Vinyl siding also has inherent drawbacks. Like aluminum, it is not a maintenance-free material.

1. Expansion and Contraction. Vinyl siding has a wide range of thermal expansion. If vinyl siding is installed tight enough for winter, it can expand in summer. Conversely, if installed loosely in summer, it will shrink in winter.

2. Maintenance. Vinyl is not a maintenance-free product. It requires washing in spring and fall. Vinyl can crack under impact, and its cracks must be repaired.

3. Vapor. Vinyl can contribute to the problem of overcompensation of the vapor envelope in a building meant to breathe, thus causing moisture-related problems on the interior.

4. Appearance. Many vinyl sidings have an imitation "wood-grain" surface texture. The imitation wood graining is exaggerated on vinyl in a manner that woodworkers shun. In many cases, vinyl siding will not match the width of the historic wood siding.

5. Color. The color of vinyl runs through the material. This color is permanent, difficult to paint, and it may fade over time.

6. Fire. Vinyl normally will melt under intense heat but can ignite at 400 degrees. Heat from fires at other properties can melt vinyl siding on distant buildings.

The Department has many publications detailing the problems associated with the maintenance of exterior woodwork. These publications are provided free of charge. Please note in particular the following:

The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, revised 1990.

_____ "Conserving Energy in Historic Buildings" (Preservation Brief 3)

_____ "Aluminum and Vinyl Sidings on Historic Buildings" (Preservation Brief 8)

_____ "The Repair of Historic Wooden Windows" (Preservation Brief 9)

_____ "Exterior Paint Problems on Historic Woodwork" (Preservation Brief 10)

_____ "The Use of Substitute Materials on Historic Building Exteriors" (Preservation Brief 16)

_____ "Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character" (Preservation Brief 17)

Please call Bill Crosby or Calder Loth at the Department of Historic Resources, (804) 367-2323 if you require assistance.

The following example shows how a building's historic character has been diminished by the application of synthetic siding.

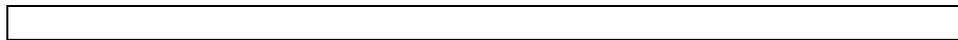


Figure 1 George P. Cook House, Bon Air, Virginia; photo circa 1886.

Decorative sawn work in gable panel

Vertical siding in gable and end adds texture and variety

bracketed cornice
spindle frieze
turned posts

Cross bracing shows
stick style influence

cross-braced balustrade

bracketed cornice

paneled bay window
apron

Victorian details of
sawn work and vertical
siding gone; attic
window removed



Figure 2 George P. Cook House, after installat-
ion of synthetic siding; photo circa 1986.

new porch of stock wrought
iron; texture and variety
gone

flatter, smoother appearance
to side of house;
paneled apron removed

Turned posts removed
and replaced; cross
bracing removed and
replaced.