

Use of exterior metal for the Historic District

Commissioners

I've put a list of "questions or topics" that I feel need to be addressed when we discuss the use of metals. These topics are generally broad and some can be answered quickly in order to keep the discussions moving forward.

As others have pointed out the design guidelines are generally silent or vague on the use of metal. So we have an opportunity to make decisions that can clarify the use of metal.

In the Design Guidelines metal (for use as siding) is only rarely mentioned. Two of the most important comments are listed below. Note that all of the mentions are in a "should" recommendation sense, not as a "shall".

RWF 4.3.H. The replacement of wood siding façade material should be done in kind, with another wood product; the use of composite wood, fiberboard, vinyl and metal should be avoided if practicable when replacing wood siding.

RNHF 4.4.B. Since the colors of metal and vinyl siding will fade over time, and since modern paint does not bond well with either material without extensive preparation, removing the non-historic material and repairing the underlying historic material should be considered. Remove dirt, mold and mildew.

ADDITIONAL INFORMATION FOR NON HISTORIC FACADE MATERIALS

Some buildings in Cambridge's Historic District have been covered with non-historic materials such as asbestos shingles or vinyl and metal siding. This was usually done to avoid the expense of repainting. Asbestos shingles were introduced in the early 20th century, remaining popular until the late 1970s when asbestos was regulated as a potential health hazard. They are a cement based material with asbestos fibers that act as a binding agent as well as provide a certain level of fire protection. Often applied directly over existing wood siding, they are left in their natural gray color or sometimes painted. The Environmental Protection Agency considers asbestos shingles to be "non-friable" that is not easily crumbled or reduced to powder, which releases the asbestos fibers into the air. Intact asbestos shingles do not pose a serious health hazard. Coated steel and aluminum clapboard siding became a popular faced material for new home constructed immediately after World War II, promoted as a maintenance free material to cover older wood facades.

In the 1960s vinyl siding was introduced, becoming the preferred non-historic siding material by the 1970s due to its lower cost

Questions to decide

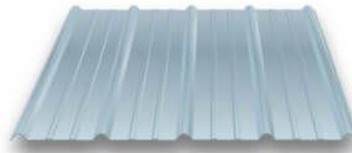
- 1) What are we calling "metal"?
 - a. Typically aluminum is discouraged for new use as exterior siding or roofing. Repair of aluminum siding is permitted. For the purpose of this discussion what are we calling a metal? Is aluminum to be grouped with steel or are we just discussing steel or variants and not "old aluminum siding"?
 - b. Sheet metal is measured in "gauge" A chart of the gauge thickness gauge is included as a reference should thickness and weight become part of the discussion. As an example

most steel roofing is either 26 gauge or 28 gauge while 22 to 24 gauge siding is also available.

- 2) Does the discussion include the primary structure or just accessory structures, sheds and outbuildings or both types of structures?
- 3) Does the discussion include using metal for the roof as well as the siding?
 - a. Currently the HPC has approved standing seam metal for roofing, primarily on a porch roof. I am only aware of one main roof on a house that is standing seam in the historic district, but it was approved in the last 3 years or so.
- 4) Metal roofing: There are different ways of attaching metal roofing. Some metal roofing (and siding) use exposed fasteners while other types of metal uses hidden fasteners. An example of both is presented below. The YouTube video is a good explanation of the differences between metal roofing with standing seam hidden fasteners and exposed fasteners pointing out the differences.
 - a. Examples of different type of metal roofing



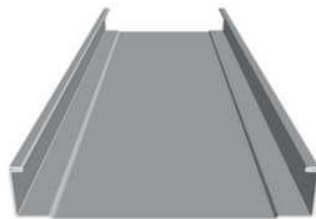
Wave Panel



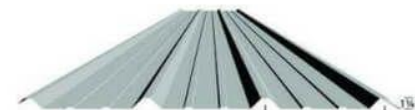
Rib Panel



5V Crimp



Standing Seam



PBR Panel

- b. <https://www.youtube.com/watch?v=iJpVabNAQY>
- 5) Residential steel siding manufacturers make a distinction between roofing material and siding. Metal siding also has attachment methods similar to metal roofing for attaching it to the support structure. From an admittedly non exhaustive survey, I've found that most industrial or commercial metal siding can be obtained in both exposed fasteners as well as hidden fasteners. Most residential metal siding uses a type of hidden fastener system although external fastener roofing panels are commonly used as siding panels for some applications.
 - a. <https://www.plygem.com/siding/siding-materials/steel/>
 - b. <https://www.qualityedge.com/siding/>
- 6) This YouTube video is how to install steel board and batten siding
 - a. <https://www.youtube.com/watch?v=rTESnQaNPWU>
- 7) Why are these examples important for the HPC to understand the differences between them? The reason is that in our design guidelines have several sections dedicated to repair, replacement and restoration of exterior facades. While they do not address the type of material

they do address the look of the façade and how it needs to relate to the original façade that is being replaced. So in our discussion we need to understand the guidelines that we have developed and approved. Please review the guidelines on your own to determine the appropriateness of the materials that have been suggested.

a) **How do I decide whether to Preserve, Repair or Replace my façade?**

The Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings state that you should first decide if the aspect of the building of concern can be preserved. For example, if the siding needs to be painted, but doesn't have any area in need of repair, you should paint it rather than repair or replace it. If there are areas that have small cracks, those areas should be repaired. If the areas that are broken or missing are beyond repair and/or the repair would be too extensive or too expensive, replacement in kind or with a substitute material listed in Appendix B can be made.

- b) **GW 4.3.C.** Replacing historic wood facades and decorative elements shall be considered only where the original material is too deteriorated to repair. If replacement is necessary, wood facades and decorative elements shall be replaced in kind with new wood, or appropriate substitute material, that matches the original as closely as possible in species, shape, profile, texture, and other character defining features.
- c) **RWF 4.3.H.** The replacement of wood siding façade material should be done in kind, with another wood product; the use of composite wood, fiberboard, vinyl and metal should be avoided if practicable when replacing wood siding.
- d) **RWF 4.3.I** Removing or covering wood facades or decorative elements should not be undertaken as such action compromises character defining features of a building.

Note that there are other sections which reference repair and replacement of siding and siding for new construction. In all of the sections that I have found the appropriateness of the siding material is usually mentioned. Generally these sections do not preclude the use of metal siding as long as it fits within the character of the neighborhood for new construction and does not alter the appearance or defining features of an existing building. The discussion that we will have will help define the use of metal and hopefully remove ambiguities from the existing Design Guidelines.