TOWN OF RYE
HISTORIC DISTRICT COMMISSION

Masonry and Stucco

18th-19th Century Brick - A soft, fired-clay, fairly regularly shaped building component; often with color and surface variations

20th Century Brick - A hard, dense, fired-clay, regularly shaped building component; sometimes with a glazed surface.

Cast Stone Units - Formed masonry units made from water, cement, and sand aggregate.

Fieldstone - Locally quarried stone, typically uncoursed of varied sizes, shapes, and colors.

Granite - A hard rock consisting of small, yet visible, grains of minerals; can be highly polished or textured.

Limestone - A sedimentary rock; used for building walls, window sills and lintels, ornamental stone trim and sculpture.

Use of Masonry and Stucco

In the Town of Rye, a few prominent civic and institutional buildings are constructed of masonry, as are several buildings on Star Island

At residences, masonry and stucco tend to be limited to foundations and chimneys at wood framed homes. Masonry landscape and retaining walls are also common at residential properties.

These *Guidelines* were developed in conjunction with the Town of Rye's Historic District Commission (HDC). Please review this information during the early stages of planning a project. Familiarity with this material can assist in moving a project forward -saving both time and money. The Building Department is available for informal meetings with potential applicants who are considering improvements to their properties.

Guidelines and application information are available at the Rye Town Hall and on the Commission's website at www.town.rye.nh.us/historic-district-commission. For more information, to clarify whether a proposed project requires HDC review, or to obtain permit applications, please call the Building Department at (603) 964-9800.

MASONRY AND STUCCO

Historically, a building's exterior masonry surface serves both visual and functional purposes. Visually, it is an important design feature that establishes the rhythm and scale of a building. Functionally, historic exterior masonry typically acts as the principal load bearing system for the building, as exterior walls, or as a building foundation, and can serve as its "skin" by shedding water and deflecting sunlight and wind.

Historic Exterior Masonry:

- Acts as an important design feature, helping to define a building's architectural style
- Establishes a building's scale, mass, and proportion
- Adds pattern and texture by casting shadows on wall surfaces
- Acts as a principal element in the structural system
- Establishes a weather-tight enclosure, providing protection from rain, wind, and sun

With proper maintenance, exterior masonry and stucco can last for centuries. However, if maintenance and repairs are not completed properly and in a timely manner, masonry and stucco can be severely damaged. Typical issues that cause deterioration are moisture penetration, freeze-thaw cycling, the installation of very hard mortar, inappropriate painting or coatings, as well as harsh or abrasive cleaning.

Masonry Components

Masonry walls, foundations and piers were historically constructed of either bricks or stones, stacked on top of each other. The individual units were bonded by mortar, which served to hold the masonry units together and fill the gaps or joints between them.

Historically, the masonry was bearing, meaning it carried its own weight to the ground, as well as the load of other building elements atop it, such as walls, floors and a roof. Beginning in the 20th century, thin masonry veneers, often of brick, marble or granite, were "hung" on an underlying support structure at storefronts and, later, at entire façades.

Brick

Brick is a common masonry material in Rye and can be found in some of the Town's earliest residential buildings, and it continues to be used today. Bricks are made by pressing clay into a mold and then firing or baking the brick at very high heat. While historic brick sizes vary, modern brick is generally a standardized unit, 8" by 4" by 2-1/4" in size.

The color of brick can vary, but red is by far the most common. Other colors can include yellow, orange, and brown. The color is determined by the chemical and mineral content of the clay and the temperature and conditions of the kiln or oven. Similar to the color, the strength or hardness of brick is determined by the clay ingredients and the firing method, but it is also determined by the way the brick is manufactured.

- **Hand-pressed bricks** tend to be very soft and can be found on buildings and structures built during the 18th and 19th centuries. They were made by pressing wet clay into a wood or metal mold, historically by hand; the shaped clay was then dried and fired. In this process, small air pockets and impurities were trapped in the clay, and the bricks were often slightly irregularly shaped with holes or voids and rounded edges and corners.
- **Dry-pressed bricks** are similar to hand-pressed bricks except the clay used is drier and it is pressed into the molds with greater force and fired longer. The result is a brick of medium hardness with sharp corners and edges. Dry pressed bricks gained in popularity in the second half of the 19th century.
- **Extruded bricks** were popularized in the early 20th century and are the hardest bricks. Unlike hand pressed bricks and dry pressed bricks, which were often made near the construction site, extruded bricks are typically made in large factories and shipped to the site. To make extruded bricks, very dry clay is forced through a form to create a long ribbon that then is cut into individual bricks. With large-scale production it is easier to achieve higher quality control and uniformity in color and hardness.
- **Veneer bricks** are thin extruded bricks, often about 1/4" thick, adhered to an underlying surface. Brick veneers have no structural capacity and are more susceptible to damage from freeze-thaw cycles and impact, which can result in cracking or popping off a surface.

Stone

The most common types of stone in Rye are granite and brownstone. Limestone detailing can be found at brick buildings, such as the Junior High, and some of Rye's buildings include fieldstone, particularly on Star Island. The stone hardness varies by type with brownstone and limestone being soft, while granite and marble are very hard. The finish can be rubble stone of varied size and arrangement, or range from a rusticated base to a highly polished, reflective surface such as stone veneer at a storefront. In addition, stone can be carved for decorative elements and sculpture.

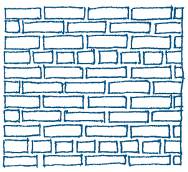
Cast Stone

Cast stone is a cast concrete product intended to simulate cut stone. In Rye, it can be found at chimney caps and foundations.

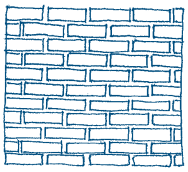
Concrete Masonry Units

Concrete masonry units (CMUs), also known as concrete blocks, are similar to bricks in that they are formed, structural elements made from a mixture of water, cement, sand and aggregate, which is placed in forms to harden. CMUs are typically 8- by 8- by 16-inches in size with internal voids. Similar to brick, they are stacked and bonded with mortar and laid in a running-bond pattern. Today, CMUs are available in various colors with different textures and finishes, including rusticated masonry, also known as split-faced block.

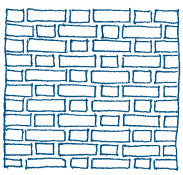
Brick Bonding Patterns



Common Bond



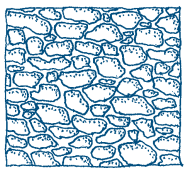
Running Bond



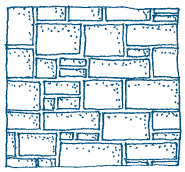
Flemish Bond

The most frequently constructed brick pattern is common bond, which features stretcher courses with a header course every 6th row. Other familiar brick bonding patterns include running bond, comprised of only stretcher course, and Flemish bond, alternating stretchers and headers.

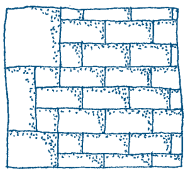
Stone Bonding Patterns



Uncoursed Fieldstone



Coursed Fieldstone



Coursed Cut Stone with Quoins

Uncoursed and coursed field stone are common foundation materials in Rye. There are fewer cases of cut stone walls. Quoins are large rectangular stones located at a building's outside corners. Historically, quoins were used in a variety of bonding patterns including fieldstone.

MORTAR

Historically, mortar was composed of only three ingredients: sand, lime and water, and sometimes additives such as animal hair or oyster shells. Starting in the mid-19th century, a small amount of Portland cement was added into the mix to improve workability and hasten setting time. In the early-20th century, corresponding with the manufacture of harder bricks, the amount of Portland cement in mortar was increased, resulting in harder mortar.

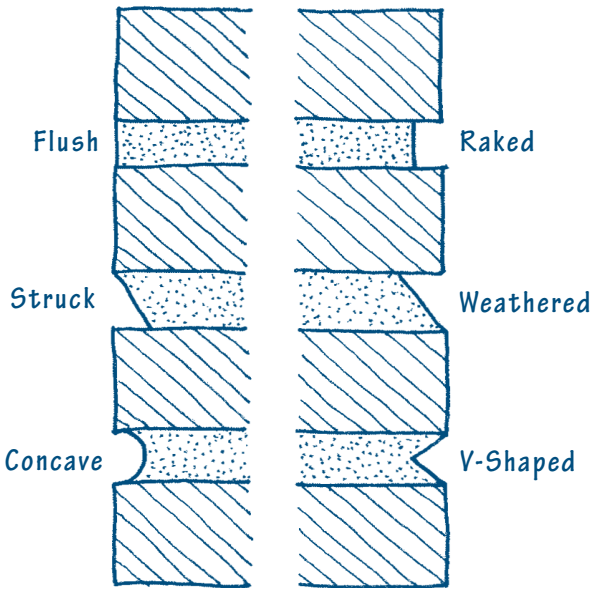
Sand is by far the largest component of mortar and defines its color, character and texture. Since masons utilized readily available products, sand from historic mortars tended to have weathered, rounded edges, and was available in a great variety of grain sizes and shades of white, grey and yellow. Most sand available today has sharper edges and comes in standard sizes from being mechanically broken and sieved. As a result, mixing sand colors and sizes might be needed to match historic mortar.

Lime and Portland Cement act as binders for the mortar. High lime mortar is soft, porous and varies little in volume with seasonal temperature fluctuations. Because lime is slightly water-soluble, high-lime mortars can be self-healing and reseal hairline cracks. Lime-based mortars can also deteriorate with continual wet-dry cycles, similar to hand pressed brick. By contrast, Portland cement shrinks significantly upon setting, undergoes relatively large thermal movements, can be extremely hard and resistant to water movement, and is available in white or grey, which can be mixed to achieve a desired color. **In general, high lime mortars are recommended for nearly all repointing projects at 18th and 19th century brick and soft masonry construction to ensure a good bond with original mortar and masonry.** It is possible to add a very small percentage of Portland cement to a high lime mixture to improve workability and plasticity. In most cases, Portland cement generally can be increased when repointing 20th century brick or harder stone such as marble and granite.

Water needs to be potable, clean and free of salts, harmful minerals and acid. If not, it can break down the mortar and adjacent masonry and discolor finished surfaces.

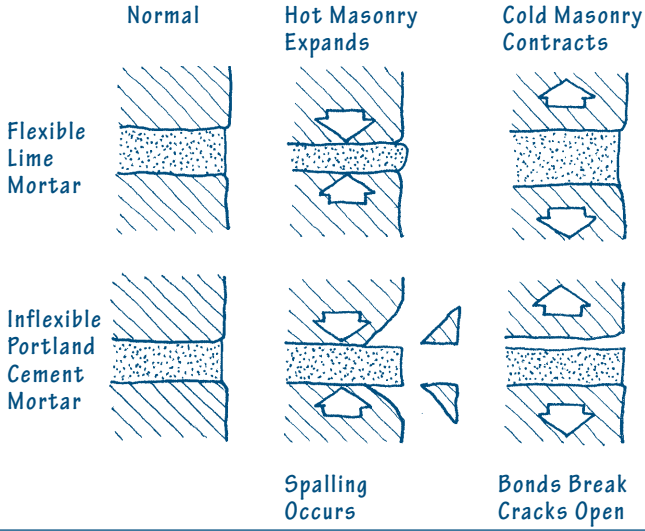
Historic Additives included oyster shells, animal hair, and clay particles. To duplicate the character of historic mortar, it might be necessary to include additives to match the original in hardness, texture, appearance and color. It should be noted that there are several types of chemical additives available today including those that increase or reduce setting time or expand the recommended temperature installation range. **The use of newer chemical additives is strongly discouraged at historic masonry unless they have been specifically tested over an extended period of time with historic materials similar to the proposed installation conditions.**

Joint Profiles



There are numerous mortar joint profile types, or shapes, with each producing different shadow lines and highlights. When repointing an area of masonry, it is important to tool the mortar to match the existing joint profile for a consistent appearance.

Mortar Hardness and Masonry



Temperature changes cause masonry units to expand when heated and contract when cold. This expansion and contraction results in compression and flexing of the adjacent mortar joints.

Lime-based mortar is pliable and more likely to compress and flex through temperature cycles. Properly installed mortar should be softer than the adjacent masonry.

Portland cement-based mortars are significantly harder than lime-based mortars and far less elastic. In addition, cement mortars tend to be substantially harder than historic masonry. When masonry units expand in warm temperatures, they press against the harder cement mortar and tend to spall at the edges. During colder temperatures, masonry units tend to pull away from mortar, resulting in open cracks that can admit moisture.

Typical Masonry Problems

It is important to identify masonry problems early to minimize damage. This is particularly true of masonry that is exposed to moisture. Once water is permitted to penetrate a masonry wall, the rate of deterioration accelerates very quickly, becoming more severe and costly. The following images include some typical masonry problems in Rye and possible repairs. Some conditions, such as movement or settlement issues, might require professional evaluation by an architect or engineer.

1. **Many problems associated with historic masonry result from failure to keep mortar joints or coatings in good repair.** Deteriorated mortar joints allow moisture to penetrate the masonry and cause severe interior and exterior damage. There are five principal causes of mortar joint failure as described below.
2. **Weathering** of mortar or stucco occurs when rain, wind and pollution erode softer historic mortar over time. Historic mortar and stucco were purposely soft to allow the masonry wall to expand and contract with seasonal temperature changes. (Refer to *Mortar Hardness and Masonry,* page 04-3.)

The mortar has weathered from most of the brick joints, reducing the structural capacity of the wall. The surface of some bricks has spalled, and a settlement crack has developed near the corner of the window.

3. **Uneven Settling** of masonry walls and piers may result in cracks in stucco surfaces, along masonry joints or within masonry units.

Definitions

Efflorescence: Water-soluble salts leach out of masonry or concrete by capillary action and deposit on a surface by evaporation, usually as a white, powdery coating

Mortar Joints: The exposed joints of mortar in masonry

Repointing: Repairing existing masonry joints by removing defective mortar and installing new mortar

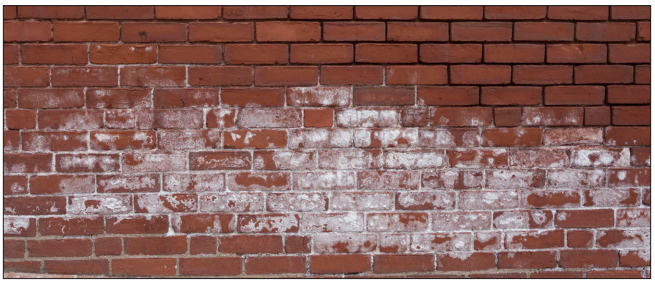
Spalling: Chipping or popping off the surface of masonry or stucco

The surface of the center brick has spalled. The repointing mortar is harder than the brick and likely includes too much Portland cement. The mortar should be completely replaced with softer mortar.

4. **Temperature Cycles** can cause masonry, stucco and mortar to expand and contract at different rates, breaking the masonry's bond with the stucco and mortar. This situation can be worsened if moisture enters an open joint, then freezes and expands, potentially spalling, that is, popping off the surface of the stucco, mortar and the masonry.

Chimneys, particularly gable-end chimneys, are highly prone to wide temperature cycle variations.

5. **Poor Original Materials** can cause ongoing problems if the masonry and mortar are incompatible or inappropriate for their installation location, or if the masonry does not properly shed water.



Efflorescence, or white bloom, is an indication of moisture in the wall. There is a lack of mortar at the upper right.

6. **Insufficient Exterior Maintenance** may result in water entering a masonry wall and accelerating deterioration. Potential areas of concern are open joints in masonry or stucco; poorly functioning gutters, downspouts and flashing; rising damp from saturated soil; standing water at foundations; water splashing off hard surfaces onto walls; condensation discharge from air conditioners; or water-entrapping vegetation such as vines or shrubs on or near a masonry wall, foundation, pier, or chimney.

A saw was used to cut out the joints during repointing, thereby extending the vertical joints and damaging the bricks. In addition, both the vertical and horizontal joints have been widened.

Repointing Historic Masonry

Repointing work can last at least 50 years when completed properly. For the best results, skilled craftsmen are needed to remove the existing mortar with hand tools to minimize damage to adjacent masonry, achieve the appropriate mortar mix, color and hardness, apply the mortar, and tool it to match the historic joint style and appearance. As a result, it is generally recommended that repointing projects be limited to areas of deterioration rather than an entire building unless deterioration is prevalent.

To achieve the best results, repointing work is best completed when the temperature ranges between 40˚F and 90˚F for at least two days after the installation of the mortar to help the mortar bond to the masonry. Mortar should be placed in joints in layers no more than 3/8-inch thick and allowed to harden. The final outer layer should be tooled to match the historic joint profile. (Refer to *Joint Profiles*, page 04-3.)

The central bricks have been repointed with what appears to be a Portland cement mortar that is harder than the hand-made brick. In addition, the mortar color and tooling poorly match the original mortar.

Long cracks at masonry, particularly cracks that split individual bricks or stones, can be an indication of a significant structural problem. In cases of more significant or recurrent cracking, consultation with an architect or structural engineer may be prudent prior to repointing.

Repairing Historic Masonry

When repairing masonry walls, infill pieces of masonry and mortar should match the existing in visual characteristics and hardness. For example, deteriorated hand-pressed brick must be replaced with hand-pressed brick; a granite sill should be replaced with a granite sill. (Salvaged materials should be reused with care since historic materials can have different properties based upon their installation locations. For example, brick can be exterior or interior grade). Mortar must match the original tooling, appearance and hardness.

Although mortar can easily be matched by analyzing the composition of the remaining mortar, matching brick and stone is more difficult. Fabricating new brick by hand to achieve similar irregularity and coloration can be costly. Matching stone with new stone is more likely if the original quarry remains active.

An alternative to obtaining new masonry is to utilize salvaged units. Although the labor to clean off excess mortar and prepare salvaged material for reuse could be more expensive than purchasing new brick, the visual characteristics, irregularity and hardness would be comparable to the existing material.

Using The Correct Mortar and Stucco

Most pre-mixed mortar available from hardware stores is generally inappropriate for historic masonry as it contains too much Portland cement and is too hard for older brick and many types of stone.

The best method of matching historic mortar and stucco is having an existing sample analyzed by a professional lab. The HDC is also available to provide guidance based upon the type, location, and condition of the masonry.

Masonry Cleaning

Appropriate masonry cleaning can enhance the character and overall appearance of a building. However, improper cleaning of historic masonry can damage historic surfaces and cause more harm than good, both physically and visually. Masonry cleaning methods fall within three general categories:

- Low pressure water, with the possible use of gentle detergent and brushing with a natural bristle brush
- Chemical cleaning
- Mechanical cleaning including sand blasting, high-pressure power washing, grinding, sanding and wire brushing

Because of the softness of historic brick and some types of stone, as well as the potential damage to historic masonry surfaces, cleaning should be completed only when absolutely necessary, using the gentlest means possible. In many cases, soaking the masonry with low pressure water can remove much of the surface dirt and deposits. If the soaking method is not successful, it might be necessary to add a non-ionic detergent, such as dish washing detergent, and brush the wall surface with a natural bristle brush.

Chemical cleaners can etch, stain, bleach or erode masonry surfaces. The use of mechanical methods, including abrasive blasting, power washing, sanding or grinding, can potentially remove decorative details and the protective surface of the masonry, resulting in an eroded surface and permanent damage. Abrasively cleaned masonry usually has a rough surface that can hold dirt and be more difficult to clean in the future. Both mechanical and chemical cleaning methods can destroy the outer protective layer, making masonry surfaces more porous and deteriorating mortar joints, thus allowing water entry and accelerated deterioration. **The use of mechanical methods for cleaning masonry is strongly discouraged by the HDC. The use of chemical cleaners should only be used when all other methods are unsuccessful. Cleaners must be diluted and tested at a discrete area prior to general application.**

Before beginning any cleaning process, it is important to ensure that all mortar joints are sealed to prevent water or any detergent or cleaning solution from entering the wall structure and causing additional damage. In addition, cleaning should be scheduled to allow the wall to thoroughly dry out prior to potential frost to minimize spalling.

The rough texture and uneven surface suggest an aggressive cleaning method was used. Stucco patches replace bricks and efflorescence, a white powdery substance, can be seen on the surface.

Masonry Coating

Water repellent and waterproof coatings generally are applied to prevent water from entering a masonry wall. They can be unnecessary on weather-tight historic buildings and are problematic long-term. Water infiltration through masonry buildings is often caused by other moisture related problems including open mortar joints and deferred maintenance. **In instances where the surface of the masonry has been compromised severely, such as by sandblasting, the use of water repellent coatings may be appropriate.**

Water Repellent Coatings, also referred to as "breathable" coatings, keep liquid from penetrating a surface while allowing water vapor to escape. Many water repellent coatings are transparent when applied, but might darken or discolor over time, and require frequent reapplication.

Waterproof Coatings seal surfaces and prevent water and vapor from permeating the surface. Generally, waterproof coatings are opaque or pigmented and include bituminous coatings or elastomeric coatings and some types of paint. Waterproof coatings can trap moisture inside a wall and intensify damage. Trapped moisture can freeze, expand, and spall masonry surfaces.

STUCCO

Stucco is a relatively inexpensive material that can provide a more finished appearance to brick, or stone or, in rare examples in Rye, wood-framed buildings. In some cases, stucco was scored or rusticated to look like stone. Stucco acts as a weather repellent coating, protecting the building from the elements including rain, snow, sunlight, and wind. Stucco can also provide an insulating layer to a wall, reducing the passage of air, as well as improving a building's fire resistance. A stucco wall surface is generally about 1-inch thick and applied in 3 coats.

Stucco was not historically used as a primary wall material in Rye. Instead, it was applied on some buildings and structures as a remodeling material when constructing an addition to vary the original appearance or to conceal a modification or deterioration. The components of stucco are similar to pointing mortar and include sand, lime, Portland cement, water, and possible binders like animal hair or straw. In some cases, pigments are added to alter the finished color.

Stucco Application

Stucco is essentially a skin of mortar held in position by the bond formed with the underlying material. Historically, on masonry walls, one of the best ways to achieve a bond was to "rake-out" the mortar joints approximately 1/2-inch to form a groove that holds the stucco in place. When installed on masonry, stucco becomes an integral part of the wall when set. When stucco was installed on wood framed walls, the stucco was generally "hung" on strips of wood called lath that were nailed to wall studs in the same way interior plaster was applied. By the mid-20th century, metal lath replaced wood lath for stucco application on wood-framed buildings.

Patching Stucco

Similar to repointing mortar, stucco should be applied in moderate weather conditions, avoiding extreme heat, sun, humidity and freezing temperatures. The final appearance should duplicate the existing as closely as possible in composition, color and texture. Successful patching of stucco surfaces requires the services of a skilled craftsman.

Hairline cracks in stucco can generally be filled with a thin slurry coat of the finish coat ingredients. By contrast, larger cracks and bulging wall areas need to be cut out and prepared for a more extensive repair. For the best appearance, the area to be patched should be squared off and terminated at a building joint or change in materials such as a window or door frame. Larger stucco repairs are applied in three coats similar to initial stucco application. (Refer to *Stucco*, at left.) Similar to pointing mortar, if stucco patches are too hard, they can cause additional damage to the adjacent historic stucco surfaces or lead to the formation of cracks that can allow water migration into the wall.

When painting stucco, it is recommended that loose or flanking paint be removed prior to applying a breathable masonry paint .

Masonry and Stucco Painting

If the exterior of the masonry surface has been compromised through previous sandblasting, moisture infiltration or the use of harsh chemicals, painting with mineral silicate paint can provide a degree of protection. Repaired masonry or stucco walls often will need to be repainted for a uniform appearance. When selecting paint, it is important that the new paint be compatible with earlier coats of paint and the stucco material and be applied following the manufacturer's recommendations.

When repainting masonry, proper preparation is critical to a successful masonry painting project. This includes: removal of vegetation and loose or flaking paint; maintenance of adjoining materials, such as leaking downspouts or gutters; and repointing of open joints.

The HDC generally recommends mineral silicate paint for the best long-term adhesion, which includes lime and silicate that binds to masonry, providing long-lasting durability and weather resistance. Lime-based paint is also appropriate for historic masonry, although it is not as weather resistant. If the building has been painted previously, it is important to select a type of undercoat and paint appropriate for the surface coating on the building and apply them following manufacturer's recommendations. (Refer to the *Exterior Paint*, *Guidelines for Exterior Woodwork*, page 03-8.)

Badly peeling paint can be an indication of poor preparation or moisture issues.

Removing Paint from Masonry

When considering whether to remove paint from a masonry surface, it is important to determine whether removal is appropriate. In some instances, the building might have been meant to be limewashed or painted, or limewash or paint was used to hide deterioration, later changes or additions. It might be appropriate to consider stripping paint if the existing paint has failed, the paint was applied to cover other problems such as a dirty building, or to reduce the long-term maintenance requirements associated with repainting.

Signs of failed paint include paint that is badly chalking, flaking or peeling, possibly due to moisture penetration. Prior to repainting, it is recommended that the cause of the moisture infiltration be identified and repaired to minimize the potential for future failure. It is also prudent to review whether the masonry has been "sealed" by excessive layers of paint or by waterproof coatings. The underlying masonry might not be able to "breathe" and dispel the internal moisture and salts. Eventually, pressure from moisture and salts can build up under paint layers and cause the paint to peel and masonry to spall.

If paint is stable, complete paint stripping might not be necessary. However, new paint should be compatible with previous paint layers and surface for best adhesion.

Synthetic Stucco

The Exterior Insulation and Finish System, or EIFS, is a synthetic stucco system popularized in the United States in the late-20th century. One significant problem with EIFS is that it does not "breathe" and can trap moisture within the wall thickness. This can lead to powdering or melting of soft, hand pressed bricks, rotting of wood sills and framing, and potential mold and mildew development in the building. In addition, EFIS can provide a desirable home for termites and carpenter ants where they can easily migrate to other parts of a building. In addition to problems with its physical properties, EIFS is typically installed with control joints or grooves to allow the surface to expand and contract with temperature patterns, often resulting in unusual wall patterns that distract from the architectural design.

Because of the differences in the visual characteristics of EIFS from stucco and the potential to harm historic building fabric, the HDC does not recommend the application of synthetic stucco or EIFS to any existing building or structure.

Masonry and Stucco Guide

The HDC encourages

- Replacement masonry that matches the historic in appearance, type, color, texture, size, shape, bonding pattern, and compressive strength
- Replacement masonry that is toothed into existing masonry, continuing the historic pattern
- Repointing mortar or stucco of the same hardness or softer than the original mortar or stucco and always softer than the original masonry - older buildings typically of high lime content with limited Portland cement
- Using mortar and stucco that matches the appearance, color, texture, pattern, joint size, and tooling of the historic installation
- Carefully removing algae, moss, vines, and other vegetation from masonry and stucco walls and removing shrubs from the building perimeter
- Completing masonry and stucco work in fair weather, for improved bonding and curing

The HDC discourages:

- Widening or extending the existing mortar joints or overlapping the new mortar over the masonry surface
- Removal or covering of historic masonry surfaces or details
- Removal of historic stucco from masonry surfaces exposing the soft, underlying brick to the elements
- Installing stucco over brick, stone or wood framed buildings that were not intended to have stucco unless covering previously damaged masonry
- Installing modern bricks for patching historic masonry, even if they are "antiqued", since they are generally much harder and do not match the historic masonry
- Using pre-mixed mortar that does not match the appearance of the historic mortar
- Using pre-mixed mortar or stucco that contains a high percentage of Portland cement at softer or historic masonry or stucco installations
- Using power tools to remove existing mortar from joints since they can damage historic masonry - these methods can damage the exterior and inappropriately change the visual appearance
- Using modern chemical additives in mortar or stucco
- Installing pointing mortar or stucco in a single layer greater than 3/8" deep
- Installing an Exterior Insulation and Finish System, or EIFS

Masonry Cleaning

The HDC encourages:

- Cleaning using the gentlest means possible
- Making sure mortar joints are sound and building is water-tight before water cleaning
- Using water without traces of iron or copper that can discolor masonry
- Conducting water cleaning a minimum of one month before freezing temperatures to minimize the potential for spalling
- Minimizing water pressure, generally no more than 100 psi, to reduce potential etching of masonry surfaces
- Using non-ionic detergent and natural bristle brushes when water soaking is not successful

The HDC discourages:

- Using mechanical methods including sand blasting, grinding, sanding, and wire brushing - these methods can damage the exterior and inappropriately change the visual appearance
- Using water with excessive salts, acids or minerals that can deposit on masonry surfaces
- Using chemical cleaning

Masonry Coating

The HDC encourages:

- Applying mineral silicate paint, in lieu of latex paint, where it is appropriate to paint masonry

The HDC discourages:

- Applying water repellent or waterproof coatings to weather-tight historic masonry or concrete unless it is below the surface of the surrounding grade
- Painting previously unpainted historic brick or stone

Removing Paint from Masonry

The HDC encourages:

- Considering paint-removal appropriateness
- Removing paint using the gentlest means possible

The HDC discourages:

- Applying water repellent or waterproof coatings to intact masonry, including paint that can trap moisture and prevent the wall from "breathing"
- Applying waterproof coatings on masonry above the surface grade level

The Guidelines project has been financed in part with Federal funds from the National Park Service, U.S. Department of the Interior, through the New Hampshire Division of Historical Resources. However, the contents and opinions do not necessarily reflect the views or policies of the Department of the Interior, or the New Hampshire Division of Historical Resources, nor does the mention of trade names or commercial products constitute endorsement or recommendation by the Department of the Interior, or the New Hampshire Division of Historical Resources. This program receives Federal financial assistance for identification and protection of historic properties. Under Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975, as amended, the U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, disability or age in its federally assisted programs. If you believe you have been discriminated against in any program, activity, or facility as described above, or if you desire further information, please write to: Office for Equal Opportunity, National Park Service, 1849 C Street NW, Washington, DC 20240.

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