CITY OF NEW ORLEANS

Vieux Carré Commission

Guidelines for Masonry & Stucco

MASONRY & STUCCO

Exterior masonry includes brick, terra cotta and stone. In the Vieux Carré, many masonry buildings are covered with a protective layer of stucco or exterior plaster.

A building's exterior masonry and/or stucco surfaces serve both visual and functional purposes. Visually, they are an important design feature that establish the rhythm and scale of a building. Historic exterior masonry and stucco:

- Act as an important design feature, helping to define a building's architectural style
- Establish a building's scale, mass and proportion
- Add pattern and cast shadows on a wall surface

Functionally, historic exterior masonry and stucco act as a building's "skin," establishing a weather-tight enclosure that provides protection from rain, wind and sun. Exterior masonry walls can also act as a principal element of a building's structural system.

SECTION INDEX

The Vieux Carré Commission (VCC) reviews any modification to exterior masonry and stucco, including repointing and painting. This section includes:

All applicants must obtain a Vieux Carré Commission (VCC) permit as well as all other necessary City permits prior to proceeding with any work. Reviewing and becoming familiar with these *Guidelines* during the early stages of a project can assist in moving a project quickly through the permit approval process, saving an applicant both time and money. Staff review of all details is required to ensure proposed work is appropriate to a specific property.

Guidelines addressing additional historic property topics are available at the VCC office and on its website at www.nola.gov/vcc. For more information, to clarify whether a proposed project requires VCC review, or to obtain a property rating of significance or a permit application, contact the VCC at (504) 658-1420.

The first step in using these *Guidelines* is to understand a property's color rating. The rating corresponds to the historical and/or architectural significance and then determines what type of change will be permitted and the review process required for each property under the jurisdiction of the VCC.

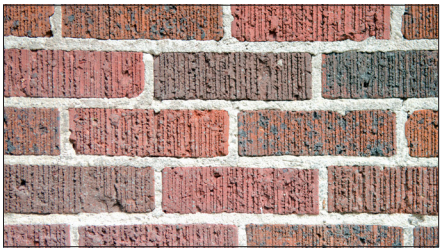
Review boxes provided throughout the *Guidelines* indicate the lowest level of review required for the specified work. Staff can forward any application to the Architectural Committee (AC) and/or the Commission for further consideration.

TYPES OF MASONRY & STUCCO

The photographs below represent some common types of masonry and stucco found in the Vieux Carré. For more information on appropriate mortar stucco and mixes for historic masonry in the Vieux Carré, refer to *Mortar & Stucco Mixes*, page 06-8.

Local 19th Century Brick *– A soft, fired-clay, fairly regularly-shaped building component; locally known as lake or mud brick; often with color and surface variations; used primarily in walls, piers, foundations and exterior paving.*

20th Century Brick *– A hard, dense, fired-clay, regularly-shaped building component; typically extruded; sometimes with a glazed surface; used primarily in walls, piers, foundations and exterior paving.*



Wire Cut Brick *– A dense, fired-clay, regularly-shaped building component; typically extruded with a ridged surface; used primarily in 20th century building walls.*

Yellow Brick *– A hard, dense, fired-clay, regularly-shaped building component made from high lime content clay; typically extruded, sometimes with a glazed surface; used primarily in walls, piers, foundations and exterior pavers.*

Glazed Brick *– A hard, dense, fired-clay, regularly-shaped building component; typically extruded with a glazed surface; used primarily in walls.*

Terra Cotta *– A fired-clay, non-structural building component; often with colored glaze; used for decorative, ornate details and wall finishes.*

Granite *– A hard rock, consisting of small, yet visible, grains of minerals; can be highly polished or textured; used for walls, piers, columns, stoops and street curbs; commonly gray, black or pink.*

Marble *– A fine grained stone able to be highly polished; has a wide range of colors and patterns; used for steps and stoops, statuary and fine masonry.*

Textured Concrete Block *– A structural building material made by mixing water, cement, sand and aggregate, placing it in a form and hardening; commonly used for foundations, walls and piers; popular in the early to mid-20th century.*

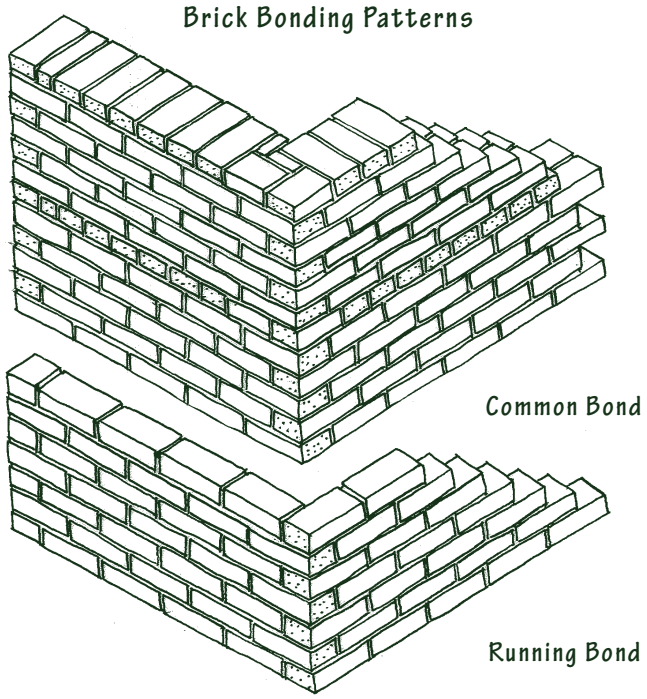
Scored Stucco *– Smooth finish with scoring to simulate stone joints.*

Dash Finish Stucco *– Textured finish with pronounced aggregate at the surface.*

Textured Finish Stucco *– Highly stylized finish with pronounced ridges and shadows from trowel application.*

MASONRY COMPONENTS

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



The most prevalent brick bonding pattern is common bond, which is built of stretcher courses with a header course every sixth row. Another familiar bonding pattern is running bond, comprised only of stretcher courses.

Brick

Brick is by far the most common masonry material in the French Quarter and can be found at some of the city's earliest buildings as well as those constructed today. Bricks are made by inserting clay into a mold and then firing or baking it at very high heat. The result is a standardized unit, generally 8- by 4- by 2-1/4-inches in size. The color of brick can vary, but bricks in the color range of orange/red and pink/brown are the most common in the Vieux Carré. 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, in addition to the way the brick is manufactured.

Lake bricks, also known as **mud bricks**, tend to be very soft and highly absorptive, and can be found on buildings and structures built during the 19th century. High moisture and humidity levels result in regular wetting and drying cycles for the brick, causing the brick to "powder" or "melt." Lake bricks were made by pressing wet local clay into a wood or metal mold by hand; the shaped clay was dried and then fired. In the 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. Variations in temperature in the firing process resulted in a great color range. **Because lake bricks are very soft, they were usually covered with stucco to protect them from the elements.**

Dry pressed bricks are similar to lake bricks except the clay used is drier and it is pressed into the mold with greater force and fired longer. The result is a harder brick with sharper 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 typically the hardest bricks. Unlike mud bricks and dry pressed bricks, which tended to be made near the construction site, extruded bricks are made in large factories and shipped to the project site. To make extruded bricks, very dry clay is forced through a form to create a long ribbon before being cut into individual bricks. Large-scale production makes it easier to achieve higher quality control of the color and hardness, as well as a wider range of colors.

Terra Cotta

Similar to brick, terra cotta is made of fired clay, it is often used for decorative details and wall finishes. It can have the color of red or yellow brick, or be fired with a clear or colored glaze. Terra cotta became popular in the 20th century, and was often highly decorative and ornate.

Concrete Masonry Unit

Concrete masonry units (CMUs), also known as concrete blocks, are similar to bricks in that they are formed structural elements. They are made from a mixture of water, cement, sand and aggregate, which is placed in a form to harden. The blocks 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. CMUs are typically not visually appropriate to the historic character of the Vieux Carré.

Stone

Stone buildings are relatively rare due to the lack of local building stone. The most common type of stone in the French Quarter is granite used for piers and lintels found on Greek Revival buildings. Historically, stone walls and piers were weight bearing and constructed of individual stones bonded with mortar. In the mid-20th century, thin stone veneers were popularized, typically marble or granite, which were "hung" on an underlying structural support system.

MASONRY SURFACE HARDNESS

Through the firing process, brick and terra cotta tend to develop a hard outer "crust". When they are used in construction, the crust of the exposed face continues to harden through exposure to atmospheric conditions. Damaging the crust exposes the softer inner core of the material to the elements and advances its deterioration. (A similar process occurs with stone, particularly softer sedimentary stone like limestone.)

MORTAR

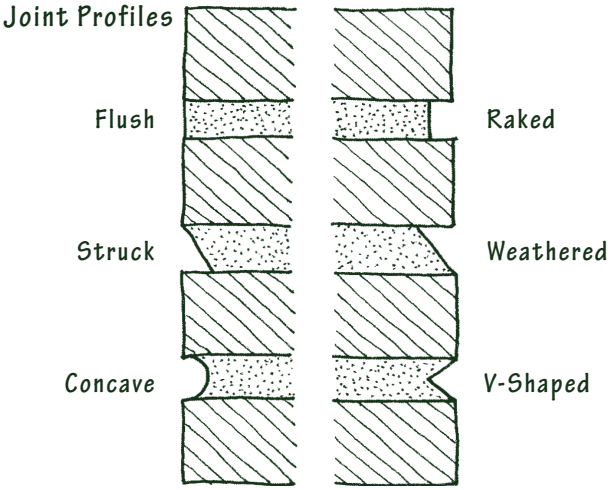
Historically, mortar was composed of a few ingredients: sand, lime and water, and sometimes additives such as animal hair or oyster shells. Starting in the mid-19th century, a small amount of Portland cement was added into the mix to improve workability and hasten setting time. In the early-20th century, the amount of Portland cement in mortar was increased, resulting in harder mortar to correspond with the manufacture of harder bricks. (Refer to *Mortar & Stucco Mixes,* page 06-8.)

Sand is by far the largest component of mortar and defines its color, character and texture. Because masons would use products that were readily available, 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 from being mechanically broken and is sieved into standard sizes. As a result, mixing sand colors and sizes might be needed to match historic mortar.

Lime and Portland Cement act as binders for 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 deteriorate with continual wet-dry cycles, similar to lake brick. By contrast, Portland cement can be extremely hard, resistant to water movement, shrink significantly upon setting and undergoes relatively large thermal movements. Portland cement is available in white or grey, and the two colors 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 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. With prior VCC approval, Portland cement can generally be increased when repointing a 20th century building or structure.

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, straw and clay particles. To duplicate the character of historic mortar, it might be necessary to include additives to match the original. (Refer to *Mortar & Stucco Mixes,* page 06-8.) It should be noted that there are several types of chemical additives available today including those that increase or reduce the setting time or expand the recommended temperature installation range. **The use of newer chemical additives is not permitted by the VCC unless they have been specifically tested over an extended period of time with similar historic materials as the proposed installation conditions.**

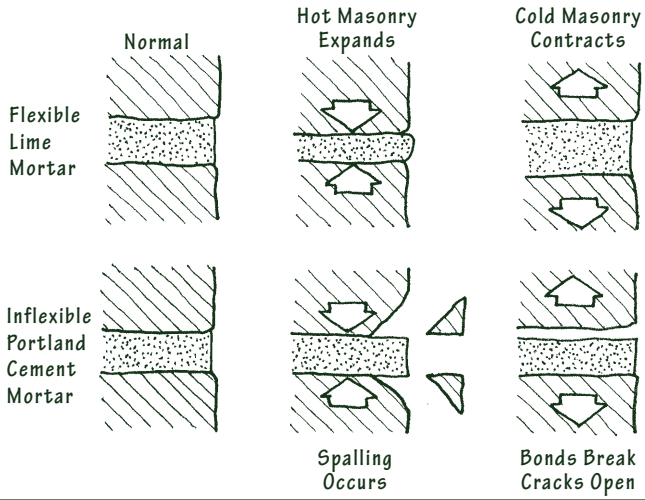


There are numerous joint profile types, or shapes, of mortar joints, each producing different shadow lines and highlights. When repointing an area of masonry, it is important to tool the mortar to match the existing joint profile for a consistent appearance.

USING THE CORRECT MORTAR

An incorrect mortar can damage an historic building and its materials. The VCC requires the use of the correct mortar for each location. **Purple or Blue property, a mortar analysis is required prior to approval of any repointing work**. (Refer to *Mortar & Stucco Mixes,* page 06-8.)

MORTAR HARDNESS & MASONRY



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

Lime-based mortar is pliable and is more likely to compress and flex through temperature cycles. If properly formulated, it is softer than the adjacent masonry.

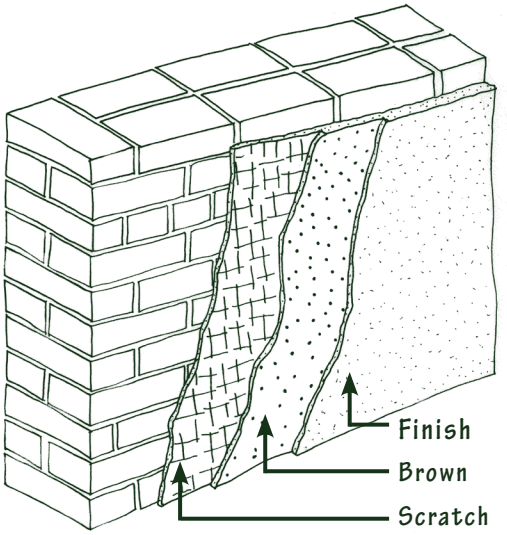
Portland cement-based mortars are significantly harder than lime-based mortars and far less elastic. In addition, cement mortars tend to be substantially harder than historic masonry. When masonry units expand in warm temperatures, they press against the harder cement mortar often spalling at the edges.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

STUCCO

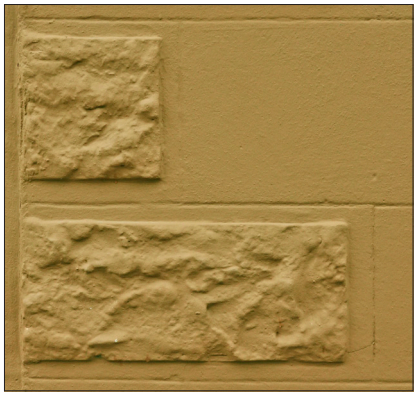
Stucco is a relatively inexpensive material that can provide a more finished appearance to brick, stone or, in rare examples in the French Quarter, a wood-framed building. In some cases, stucco was scored to look like stone while in others, rusticated at the building foundation. Stucco acts as a weather repellent coating, protecting a building from the elements including rain, snow, sunlight and wind. Stucco can also provide an insulating layer to a wall, reduce the passage of air and improve a building's fire resistance.

In the Vieux Carré, stucco was traditionally applied over soft lake brick at the time of construction as a protective coating. Beginning in the 20th century, it was applied on wood-framed buildings in revival styles of architecture. It was also applied on some buildings and structures years after the time of construction, as a remodeling material to vary the original appearance or to conceal deterioration.

The components of stucco are similar to pointing mortar and include sand, lime, Portland cement, water and binders such as animal hair or straw. In some cases, pigments were added to the mix to alter the finished color. (Refer to *Mortar & Stucco Mixes,* page 06-8.)



Stucco was traditionally applied in three layers as scratch, brown and finish coats.



The appearance of finished stucco can vary based upon the desired effect and the skill of the craftsman. This example includes scoring and stucco quoins, or corner blocks.

STUCCO APPLICATION

Stucco is essentially a skin of mortar held in position by the bond formed with the underlying material. Historically, on a masonry wall, 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. (Refer to Raked Joint at *Joint Profiles*, page 06-4.)

When installed on masonry, once it sets, stucco becomes an integral part of the wall. When stucco was installed on a wood framed wall, 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 a wood-framed building.

A stucco wall surface is generally about 1-inch thick and applied in three coats:

- The **Scratch Coat** is approximately 3/8-inch thick and applied directly to the wall surface. It is forced into the raked joints or pushed into the lath to provide a strong bond. The surface of the scratch coat is deeply cross-scratched to allow bonding of the brown coat.
- The **Brown Coat** is also approximately 3/8-inch thick with a relatively smooth surface.
- The **Finish Coat** is generally about 1/4-inch thick with the overall thickness being determined by the finish style.

SCORED STUCCO

The finish coat of stucco was often scored to provide the appearance of cut stone, in a pattern responsive to architectural features such as a window or a door. Stucco scoring was applied with a light touch, with the score marks limited to 1/8-inch wide and 1/8-inch deep, in "blocks" generally at least 16-inches wide and 8-inches tall.

USING THE CORRECT STUCCO

Similar to mortar, incorrect stucco can damage a historic building and its materials. Often, the correct stucco mix is based upon the same components as the correct mortar mix for a wall. The VCC requires the use of the correct stucco for each location. **For a Purple or Blue property, a stucco analysis is required prior to approval of any stucco work.** (Refer to *Mortar & Stucco Mixes,* page 06-8.)

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 lake bricks, rotting of wood sills and framing, and potential mold and mildew development in the building. In addition, EIFS can provide a desirable home for termites and carpenter ants. Once inside the EIFS system, they can easily migrate to another part of a building.

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

TYPICAL MASONRY & STUCCO PROBLEMS

Many problems associated with historic masonry result from the failure to keep mortar joints or a stucco coating in good repair. Deteriorated mortar joints and stucco surfaces allow moisture to penetrate the masonry and cause severe interior and exterior damage. There are five principal causes of mortar joint and stucco failure:

- **Weathering** occurs when rain, wind and/or pollution erode softer, historic mortar and stucco. Historic mortar and stucco were purposely soft to allow the masonry wall to expand and contract with seasonal temperature changes. (Refer to *Mortar Hardness & Masonry,* page 06-04.)
- **Uneven Settling** of a masonry wall and/or pier may result in cracking of a stucco surface, along masonry joints or within masonry units.
- **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 worsen if moisture enters an open joint, then freezes and expands, potentially spalling (popping out) the surface of the stucco, mortar and/or the masonry. (Refer to *Mortar Hardness & Masonry,* page 06-04.)
- **Poor Original Design and Materials** can cause ongoing problems if the masonry and/or mortar are incompatible or inappropriate for their installation location, or if the masonry does not properly shed water. Lake brick, which is very soft, erodes if exposed to the elements and not protected by lime-based stucco.
- **Inadequate Exterior Maintenance** may facilitate water entering a masonry wall and causing deterioration. Potential areas of concern are: an open joint in masonry or stucco; a poorly functioning gutter, downspout or flashing; rising damp from saturated soil; standing water at a foundation; water splashing back off a hard surface onto a wall; condensation discharge from an air conditioner; and water-entrapping vegetation such as a vine or shrub on or near a masonry wall, foundation, pier or chimney.

DEFINITIONS

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

Mortar Joint: The exposed joint of mortar in masonry

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

Spalling: Chipping of masonry

MASONRY ISSUES & RECOMMENDATIONS

It is important to identify a masonry problem 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 rapidly, becoming more severe and costly to address.

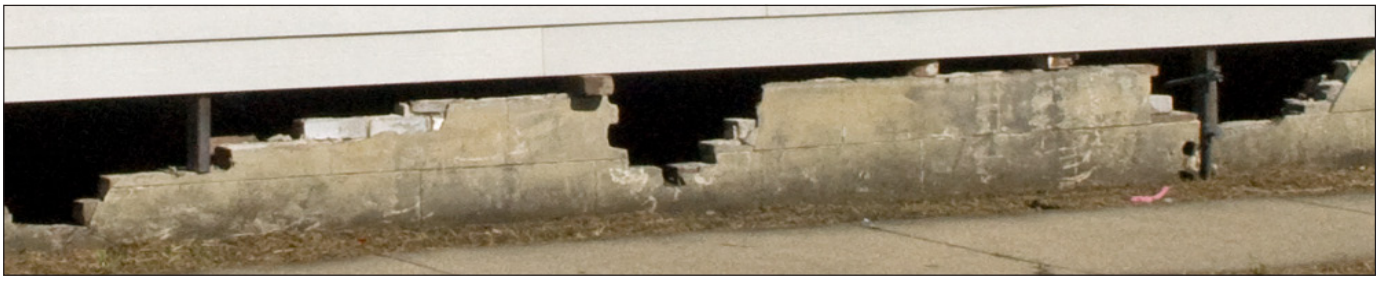
The following images include some typical masonry problems in the French Quarter and potential repairs. Specific conditions, such as movement or settlement, might require professional evaluation by an architect or engineer.

Deterioration of bricks and mortar – The surface of several of the lake bricks appear to be "powdered" or "melting," exposing their softer core. Some surrounding mortar remains in place, suggesting it is harder than the brick. Other mortar is eroding and cracks are present, increasing the potential for further moisture infiltration.

Recommendation *– Most walls constructed from soft lake bricks should have a protective stucco coating. Replace deteriorated brick. Address all potential causes of moisture infiltration into wall including storm water and ground water. Repoint an open joint with compatible mortar, as soon as possible, to minimize storm water entering the wall. Apply compatible 3-coat stucco and appropriate painted surface to protect underlying brick. (Refer to Stucco, page 06-5.)*

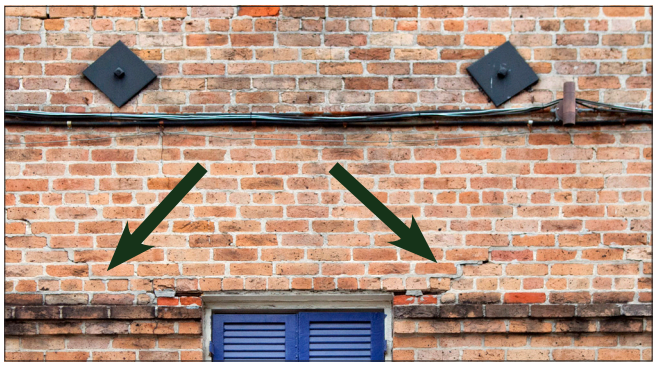
Deterioration of foundation – The brick foundation below is missing and collapsing, losing its ability to support the wall.

Recommendation *– Rebuild foundation and provide hurricane fasteners to wood wall and floor framing. (Refer to Storm Preparedness, Guidelines for Exterior Woodwork, page 05-10.)*



Failing window lintel – The window lintel is bowed down at the center and has multiple stepped cracks, along mortar joints at both sides leading to the gallery support above.

Recommendation *– The extent of cracking at the window is severe. If the condition worsens, it could lead to collapse. Immediate consultation with an architect or engineer is recommended.*



Step cracks at windows and bolted plates – Spalled brick and step cracks radiate up from both corners of the window. The flat plates on the wall above have threaded rods secured to the internal structure to stabilize or pull-back a bowing masonry wall. (Plain and decorative plates are available in different shapes.)

Recommendation *– Replace spalled brick, repoint open step cracks and monitor condition regularly to see if they return. Remove abandoned wiring and associated anchors.*

Plant growth and open joints at downspout – Plants are growing in the mortar joints around the downspout and open joints are visible below. Both conditions suggest the presence of moisture and saturation of the brick wall.

Recommendation *– Verify the downspout is clear and draining, and its seams are well fastened. Remove abandoned electronic devices and wiring. Remove all plant growth. Repoint open mortar joints with compatible mortar.*

Cracked granite lintel – Granite lintel is cracked over structural support and through cornice.

Recommendation *– Patch the open joint. Monitor the condition every two to three months to see if the crack re-opens. A crack over an unsupported area or near the edge of a support can be sign of a significant structural problem that requires immediate review by an architect or engineer.*

Spalled brick – Joints were widened and extended by a power tool to cut-out the joints during repointing. The joints are too large and extended vertically. The surface of the brick appears to have been damaged by removal of previous stucco and/or abrasive cleaning.

Recommendation *– Cut back mortar joints to allow keying of new stucco wall finish. Apply compatible 3-coat stucco and appropriate painted surface to protect underlying brick. (Refer to Stucco Application, page 06-5.)*

Obstructed foundation vent – The foundation vent is clogged with mortar, trapping damp, humid air in the crawlspace. Prolonged moisture in the crawlspace can deteriorate masonry and damage wood framing.

Recommendation *– Remove obstructions from all vents and ensure there is sufficient airflow into the crawlspace.*

REPAIRING HISTORIC MASONRY

When repairing a masonry wall, the infill brick and stone masonry and mortar must match the existing in visual characteristics and hardness. For example, deteriorated or missing lake brick must be replaced with lake bricks; a granite pier must be replaced with a granite pier; and mortar profiles must match the original tooling, appearance and hardness.

Although mortar can easily be matched by analyzing the composition of the remaining mortar, matching brick, terra cotta and stone is more difficult. Fabricating new brick by hand to achieve similar irregularity and coloration can be costly. Terra cotta and glazed brick also present a challenge as molds often need to be recreated while the glazes tend to develop surface hairline cracks and change color over time. Matching stone with new stone is more likely if the original quarry is 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 with the existing material.

REPOINTING HISTORIC MASONRY

Repointing work can last at least 50 years when completed properly. For the best results, a skilled craftsman is needed to remove the existing mortar with a hand tool to minimize damage to adjacent masonry, achieve the appropriate mortar mix and hardness, apply the mortar and tool it to match the historic joint style and appearance. As a result, it is generally recommended that a repointing project be limited to the area of deterioration rather than an entire wall or 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 it bond to the masonry. Mortar should be placed in joints in layers of no more than 3/8-inch thick and allowed to harden. The final layer should be tooled to match the historic joint profile. (Refer to *Joint Profiles*, page 06-4.)

MORTAR & STUCCO MIXES

Most pre-mixed mortar is generally inappropriate for historic masonry as it contains too much Portland cement making it too hard. The most exact method of matching historic mortar and stucco is to have it analyzed by a professional lab. **The VCC requires mortar and stucco analysis by a professional laboratory for all Purple and Blue rated properties.**

VCC Approved Mortar Mix

The approved VCC **mortar mix** for 18th and 19th century historic masonry:

- 1 Part (maximum) Portland cement
- 3 Parts Lime
- 9 Parts Sand
- Enough potable water to form a workable mix

VCC Approved Stucco Mix

The approved VCC stucco mix for the **scratch coat and the brown coat** (Refer to *Stucco*, page 06-05) for 18th and 19th century historic masonry is:

- 1 Part (maximum) Portland cement
- 3 Parts Lime
- 9 Parts Sand
- 6 lbs / cubic yards of hair or fiber
- Enough potable water to form a workable mix

The approved VCC stucco mix for the **finish coat** is:

- 1 Part (maximum) Portland cement
- 3 Parts Lime
- 9 Parts Sand
- Enough potable water to form a workable mix

These *Guidelines* are intended to provide an overview of masonry issues and potential repairs. Caring for the full range of masonry found in the French Quarter, particularly lake brick, requires specialized professional knowledge, which is outside the scope of these *Guidelines*. Consultation with a preservation professional is recommended prior to beginning masonry or stucco work.

APPLYING & PATCHING STUCCO

Similar to repointing mortar, stucco should be applied in moderate weather conditions, avoiding extreme heat, sun, humidity and/or freezing temperatures. The final appearance should duplicate the existing as closely as possible in composition, color and texture. Successful patching of a stucco surface requires the services of a skilled craftsman. Stucco repairs are applied in three coats just as stucco application. (Refer to *Stucco Application,* page 06-5.) Similar to repointing mortar, if a stucco patch is too hard, it can cause additional damage to an adjacent historic stucco surface or lead to the formation of a crack that can allow water to seep into the wall.

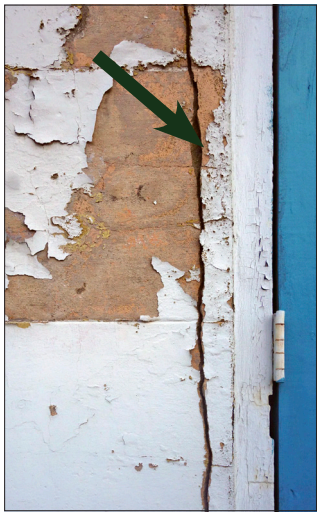
When repairing stucco, a hairline crack can generally be filled with a thin slurry coat of the finish coat ingredients, while a larger crack needs to be cut out and prepared for a more extensive repair. Similarly, a bulging wall surface needs to be cut out to a sound substrate. For the best appearance, 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. (Refer to the image below.)

When applying stucco directly to a masonry wall, it is important to rake out the masonry joints to a sufficient depth to allow the stucco mortar to bond to the masonry and be keyed into the joints. When applied to a wood framed building, the lath should be attached securely to the substrate or underlying material. The use of metal lath on a masonry building is strongly discouraged because it can be prone to rust and eventually lead to the spalling of the stucco surface unless it is galvanized.

The stucco wall is in the process of repair. The loose stucco between the windows has been removed to the brick substrate to allow the new stucco to be installed. Red tape marks the locations of cracks to be repaired.

Stucco removed at brick-between-post construction – The removal of the stucco has exposed the soft, underlying brick and post. The brick is deteriorating quickly. Note the spalling and delamination of the brick, stucco patches in lieu of missing bricks and checking (cracking) of the wood post.

Recommendation *– Remove inappropriate mortar and apply compatible stucco. Paint for a uniform appearance.*



Crack through stucco – A significant vertical crack is located along the door jamb. There is loss of the paint finish. The crack could be the result of movement or a failure of the brick wall. The paint loss could be the result of moisture or improper preparation.

Recommendation *– A long, deep crack can be an indication of a larger structural condition that should be evaluated by an architect or engineer.*

Algae growth at stucco foundation – The algae along the foundation suggests significant moisture in the ground immediately next to the building. Constant moisture can cause the stucco to delaminate and fall off the wall.

Recommendation *– Divert water source away from the wall. Verify the slope of the ground next to the foundation is draining away from the wall and that no air conditioner condensate line or downspout is discharging in the area. Verify foundation vent is clear of debris. Clean stucco and, if required, apply mineral silicate paint for a uniform appearance.*

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

MASONRY CLEANING

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

- Low-pressure water, also possibly using a gentle detergent and brushing with a natural bristle brush
- Diluted chemical cleaning
- Mechanical cleaning including sand blasting, high-pressure power washing, grinding, sanding and/or wire brushing – None of the methods in this category are allowed

Because of the softness of the local brick and the potential to damage to a historic surface, cleaning should be undertaken only when absolutely necessary, using the most gentle 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/or brush the wall surface with a natural bristle brush.

Chemical cleaners can etch, stain, bleach or erode a masonry surface. The use of a mechanical method, including abrasive blasting, power washing, sanding or grinding, can remove decorative details and the protective surface of the masonry, resulting in an eroded surface and permanent damage. Abrasively cleaned masonry usually has a rougher surface that can hold additional dirt and be more difficult to clean in the future. Both chemical and mechanical cleaning methods can destroy the outer protective layer, making a masonry surface more porous and deteriorating mortar joints, thus allowing increased moisture penetration and accelerated deterioration. **The use of mechanical methods for cleaning masonry is not allowed by the VCC. The use of a chemical cleaner is approved only when all other methods are unsuccessful. The chemical cleaner 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, any detergent and/or cleaning solution from entering the wall structure and causing damage.

REMOVING GRAFFITI

Graffiti should be removed quickly to prevent it from permanently adhering to masonry. (Prompt removal is a City requirement.) For the best results, it is necessary to understand the type of masonry and paint used to reduce possible masonry damage during cleaning. In an instance where a severe stain or graffiti is present, it might be necessary to use a chemical-based cleaner in a limited area. Caution should be taken by testing the effect of the proposed cleaner on a discrete area of the building before using it on a principal elevation. It is best to use the most diluted concentration to minimize potential damage of the masonry surface. (Refer to *Paint Removal & Chemical Safety,* page 06-11.)

MASONRY CLEANING GUIDE

VCC approval is required for masonry cleaning with any material or device other than a garden hose.

THE VCC REQUIRES:

- Using the most gentle method of cleaning possible; using a garden hose and water pressure of no more than 50 psi to minimize erosion and etching; Using clean, potable water without excessive salt, acid, minerals or trace metal that can discolor masonry
- Using a non-ionic detergent (i.e. dish soap) and a natural bristle brush when water cleaning is not successful
- Cleaning masonry a minimum of one month before a freezing temperature to minimize potential for spalling

THE VCC DOES NOT ALLOW:

- **Cleaning with a harsh chemical, acid, bleach, sand blaster, power washer, metal brush or grinder as it damages the protective exposed surface**

MASONRY COATING

A water repellent or waterproof coating is applied to prevent water from entering a masonry wall, but tends to be unnecessary on a weather-tight historic building and can be problematic long-term. Water infiltration through a masonry building often is caused by a moisture-related problem including an open mortar joint and poor or deferred maintenance. In circumstances where the surface of the masonry has been severely compromised, as with sandblasted brick, a water repellent coating might be appropriate.

A **water repellent coating**, also referred to as a "breathable" coating, keeps liquid from penetrating a surface while allowing water vapor to escape. Many types of water repellent coatings are transparent or clear when applied, but might darken or discolor over time. A water repellent coating is rarely appropriate in the Vieux Carré.

A **waterproof coating** seals a surface and prevents water and vapor from permeating the surface. Generally, a waterproof coating is opaque or pigmented and some types include a bituminous coating or elastomeric coating and paint. A waterproof coating can trap moisture inside a wall and lead to damage. Trapped moisture can freeze, expand and spall a masonry surface. Therefore, waterproof coatings are not appropriate in the Vieux Carré.

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 painted or paint was used to hide deterioration, a later change, or an addition. It might be appropriate to consider stripping the paint if the existing paint has failed or the existing paint was applied to cover a problem such as a dirty building or delayed long-term maintenance needs.

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 moisture infiltration be identified and repaired to minimize the potential for future failure. It is prudent to review whether the masonry has been "sealed" by excessive layers of paint or by a waterproof coating. The underlying masonry might not be able to "breathe" and dispel 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.

PAINT REMOVAL & CHEMICAL SAFETY

Caution should be used when removing paint because some paint includes lead, requiring proper collection and disposal techniques. Many chemical cleaners and paint strippers are hazardous and require special handling, collecting, and appropriate disposal of the chemicals and rinse water. Follow the manufacturer's instructions and refer to *Guidelines for Exterior Painting,* page 09-03.

The peeling paint is likely incompatible with the stucco. If paint failure continues, complete removal and repainting with a masonry silicate paint should be considered.

MASONRY & STUCCO PAINTING

If the exterior of a masonry surface has been compromised through prior sandblasting, moisture infiltration or the use of a harsh chemical, painting with a mineral silicate paint can provide a degree of protection; however, applying stucco with a painted finish is typically the more appropriate option for a building constructed of lake brick. Repaired masonry or stucco walls will often need to be repainted for a uniform appearance. When selecting paint, it is important that the new paint be compatible with all earlier coats of paint and the stucco material be applied according to the manufacturer's recommendations.

When repainting masonry, proper preparation is critical to a successful masonry painting project. This includes the removal of vegetation and loose or flaking paint; maintenance of adjoining materials, such as a leaking downspout or gutter; and repointing open joints. Although the VCC generally recommends mineral silicate paint for the best long-term adhesion, lime-based paint can be applied. Mineral silicate paint includes lime and silicate that bind to masonry, providing long-lasting durability and weather resistance. Lime-based paint is 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 existing surface coating on the building and apply them according to the manufacturer's recommendations. **All exterior paint colors are subject to VCC review.** (Refer to the *Guidelines for Exterior Painting*.)

MASONRY COATING & PAINTING GUIDE

THE VCC DOES NOT ALLOW:

- Applying a waterproof coating, including paint that can trap moisture and prevent the wall from "breathing" unless the masonry surface is severely compromised at which time a water repellent coating might be approved
- Applying a waterproof coating on or in masonry above the surface of the adjacent ground or paving
- Painting previously unpainted historic brick or stone because the paint can damage the historic masonry, alter the visual characteristic of the building and/or obscure the craftsmanship of the masonry including its colors, texture, masonry and/or joint patterns (Paint on masonry is not easily removed)

MASONRY & STUCCO GUIDE

THE VCC REQUIRES:

- Replacing masonry that matches the historic masonry in type, color, texture, size, shape, bonding pattern and compressive strength
- Installing repointing mortar and/or new stucco of the same hardness or softer than the original mortar or stucco and always softer than the original masonry – Typically of high-lime content with very limited or no Portland cement – Mortar and stucco analysis by a professional laboratory is required for a Purple or Blue rated property
- Using mortar and stucco that matches the appearance, color, texture, pattern, joint size and tooling of the historic mortar and/or stucco
- Installing replacement masonry into existing masonry, continuing the adjacent pattern without an odd size

THE VCC RECOMMENDS:

- Removing algae, moss, vines and other vegetation from a masonry and/or stucco wall carefully and removing shrubs from the building perimeter – A wall needs sunlight to dry and roots gather water at their foundation and can displace masonry
- Completing masonry and/or stucco work in fair weather
- Installing pointing mortar in a single layer no more than 3/8-inch deep
- Removing abandoned hardware, electrical devices, wiring, conduit and piping from all exterior walls

THE VCC DOES NOT RECOMMEND:

- Using a power tool to remove existing mortar from a joint because its use can damage historic masonry
- Using a modern chemical additive in mortar or stucco

THE VCC DOES NOT ALLOW:

- Widening or extending an existing mortar joint or overlapping new mortar over the masonry surface
- Removing or covering a historic masonry surface or detail
- Removing historic stucco from a masonry surface or from brick-between-post construction exposing the soft, underlying brick to the elements
- Installing stucco over brick, stone or a wood-framed building that was not intended to be stuccoed, except when covering previously damaged masonry
- Installing modern brick to patch historic masonry, even if it is "antiqued", because modern brick is generally much harder and does not match the historic masonry
- Using pre-mixed mortar or stucco without VCC approval
- Installing a visually obtrusive electrical device, wiring, conduit, piping or hardware at an exterior wall

Masonry & Stucco Review

Install or replace masonry in-kind to match the hardness, size, color, pattern, texture and porosity with matching mortar and joints

1 2 3 Staff

Install inappropriate masonry

1 2 Commission

3 Architectural Committee

Replace mortar to match the historic in hardness, appearance, color, texture, tooling and mortar joint size

1 2 3 Staff

Install inappropriate mortar

1 2 Commission

3 Architectural Committee

Install or repair with appropriate 3-coat traditional stucco of same hardness, appearance, color and texture for the substrate and style

1 2 3 Staff

Install other stucco including an EIFS system

1 2 Commission

3 Architectural Committee

Clean masonry with a material or device other than a garden hose; Paint, repaint previously painted masonry or stucco, remove paint from masonry

1 2 3 Staff

Apply a coating or paint to a previously unpainted brick or stone

1 2 Commission

3 Architectural Committee

KEEP IN MIND...

- The repair, maintenance, installation and/or cleaning of masonry and stucco should be left to a professional
- All masons are not necessarily experienced in all materials – Choose a contractor with demonstrated experience in completing similar historic masonry work, check references to understand how well their work has held up and verify material and labor warranties
- Verify mason is experienced in meeting VCC requirements and will obtain required approvals and permits
- Hold final payment, such as 25%-30% of the project cost, until all work has been properly completed

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www.nola.gov/vcc

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