

Masonry Cleaning Guidelines

"The surface cleaning of structures shall be undertaken with the -gentlest means possible."1

The Historic District Commission generally approves of the inclusion of exterior masonry cleaning for the rehabilitation or restoration of an historic structure, provided that the cleaning technique used will not cause damage or permanent alteration to the historic structure. The natural weathering and discoloration of masonry materials, patina², is to be respected as the appearance achieved as a result of the original designers selection of exterior materials. The Commission discourages the use of any cleaning technique that would totally remove this natural patina from an original building material. The Commission does not discourage the removal of surface grime (airborne dirt and pollutants), or stains resulting from failure of drainage systems, graffiti, etc.

Definitions

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I. For the purposes of this policy, the term "masonry" is understood to include all brick, stone, stucco, terra cotta, ceramic tile and cement exterior finish materials.

II. The term "cleaning technique" is meant to encompass all aspects of a masonry cleaning method including; type of cleaning agent, type of rinse, method and/or pressure of cleaning agent and rinse applications, and all other actions or precautions taken to insure the proper and safe utilization of a particular cleaning method.

III. For the purposes of this policy, the term "abrasive cleaning" is meant to include all cleaning techniques that physically abrade the building surface to remove soils, discolorations, or coatings. Such techniques involve the use of certain materials which impact or abrade a masonry surface under pressure, or abrasive tools and equipment. The following materials are some examples of abrasive substances that are applied through a stream of high pressure water or air:

sand

ground slag or volcanic ash

crushed walnut or almond shells

rice husks

ground corncobs

ground coconut shells

crushed eggshells

silica flour

synthetic particles

glass beads

micro balloons baking soda

The use of water under high pressure can also be an abrasive material under certain circumstances.

The following are some examples of tools and equipment which are abrasive to masonry surfaces:

wire brushes

rotary wheels

power sanding disks

rotary or belt sanders

Purpose

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The Historic District Commission sets forth this policy statement for the purpose of assisting property owners and building contractors in planning an appropriate rehabilitation of structures located within an historic district.

Building Permit Applications

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The Historic District Commission shall review all building permit applications proposing the cleaning of a masonry surface as individual cases. No person should interpret any Commission approval of a cleaning technique for an individual structure as being precedent setting, thereby allowing the unrestricted use of that cleaning technique. Each building permit application for masonry cleaning shall be reviewed and decided on the basis of the cleaning technique proposed, and the type and condition of the exterior material to be cleaned.

In all cases where masonry cleaning is proposed, the following information is required as part of the application for a building permit:

A. The property owner shall submit an explanation as to the purpose for desiring to clean the masonry surface(s) of their building.

B. The property owner or building contractor shall submit a detailed written description of the cleaning technique to be used. This description is to include:

1. An exact description of the cleaning agent to be applied. If a chemical cleaner is proposed, then the proper nomenclature of the chemical must be specified (in addition to brand name). The pressure and/or method in which the cleaning agent will be applied must be specified.

2. If a rinse is called for, a description of the rinse, and the pressure and/or method in which the rinse will be applied, must be specified.

3. Pressure specification are to be expressed in pounds per square inch (PSI) exerted at the nozzle of the instrument (wand).

C. An exact description and location of the exterior materials that are to be cleaned and photos of the existing condition are required. This description should include an analysis of the existing condition of the exterior materials to be cleaned (i.e. cracked, spalling, open joints, patched, etc.).

D. A test patch, located on a small area (maximum of 9 sq. feet in an inconspicuous spot, is required to be performed prior to processing of an application for masonry cleaning. This test patch is required regardless of the cleaning technique being proposed. Approval of a building permit application can only be obtained after this test area has been inspected by the Commission's staff, and the cleaning technique has been found to be non-detrimental to the structure.

In those cases where more than one type of material is to be cleaned, or where different textures exist on the same material, a test patch will be required for each of the materials and/or textured surfaces involved.

The Commission's staff shall review all submissions and shall only process an application once all of the above described information has been submitted and the staff has determined that the application sub-mission is complete.

Guidelines

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Any proposal for masonry cleaning shall meet the following applicable conditions:

A. Abrasive cleaning will not be permitted on exterior masonry surface.

B. Chemical cleaning is permissible provided:

1. That the cleaning contractor submit written guarantees stating that any damage that might be caused to adjacent glass, stone, brick, stucco, wood, paint, foundation plantings (landscaping) or other building or plant materials, shall be repaired in an appropriate manner as determined by the Historic District Commission. If the contractor gives financial remuneration to the property owner in lieu of making physical repairs, the property owner will then be responsible for making those repairs. A set time limit for completing these repairs may be given by the Commission.

2. That the cleaning method proposed is not one that is known to cause damage to the type of material that is intended to be cleaned.

C. High pressure liquid cleaning will be permitted if it is shown (by means of a test patch) that the proposed amount of pressure will not cause abrasive damage to the materials it is to clean.

D. Any cleaning technique that involves the use of pressure applied water as a cleaning agent or rinse, shall not be scheduled for performance during periods of weather where freezing temperatures are prevalent. Scheduling of such work should allow at least two calendar weeks for the proper "drying out" of the cleaned masonry surfaces prior to the onset of freezing weather conditions.

Generally, wet cleaning should only take place between April 15 and November 1 of any given year.

E. Necessary masonry repairs (i.e. tuckpointing, stucco patching, crack repairs, etc.) are to be satisfactorily completed prior to cleaning the masonry surface. This measure will help safe-guard against possible damages that could be caused by the cleaning technique. A masonry surface must be in a state of good repair before cleaning is attempted.

F. In preparing to repaint masonry, stripping should only occur where the paint can be easily removed, without damaging the underlying masonry. In any other instance where paint stripping can not be performed without causing damage to the underlying masonry surface, repainting is the only appropriate solution.

Recommended Techniques

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A. Abrasive cleaning will not be permitted for use on exterior masonry,

B. With the exception of certain detergents, chemical cleaning is not recommended for most stone and stucco surfaces. Some stone tends to be stained by chemical cleaners, while the fragile nature of stucco restricts the use of chemical cleaners to only those areas that are in good condition and not showing signs of deterioration. A water rinse is required whenever a chemical cleaner is to be used.

C. Stucco or stone surfaces are best cleaned by use of a mild detergent and a low pressure water rinse, or with the use of plain water applied at low pressure. This method can also be used on most masonry surfaces where harsher methods of masonry cleaning could cause damage to the masonry.

D. Where approved masonry cleaning techniques do not achieve the desired results on painted stucco, repainting is recommended.

E. High temperature water or steam cleaning can usually be used successfully on all masonry surfaces. Appropriate repairs should be made, where needed, on the masonry surface prior to employing this cleaning technique.

F. It is recommended that the required test patch be allowed to weather through a complete cycle of seasons (one year) in order to determine the long range effects of a cleaning technique.

F. Proper safety precautions should always be taken to protect equipment operators, surrounding building materials, surrounding landscape materials and the general public from the hazards inherent to the specific cleaning technique being used.

H. Paint stripping from masonry surfaces that were either painted originally, or early in the building's history, should not occur unless *removing damaged or deteriorated paint to the next sound layer* in preparation for repainting. Painting of masonry buildings was usually done to conform to the style influences of the period, or to assist in weather-proofing and protecting a poor quality masonry material. Either or both of these reasons is adequate cause to not permanently remove paint from the surface of a building.

I. A poultice can be used for spot stain removal. Made of a chemical specific for the type of stain or water and a binder such as fuller's earth or sawdust, a poultice is applied directly to the area. The stain is drawn into the poultice as it dries and pulls away from the wall.

For further Information:

The Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings, Standard #7

Preservation Briefs available from the National Park Service: #1 "The Cleaning and Waterproofing Coating of Masonry Buildings", #6 "Dangers of Abrasive Cleaning of Historic Buildings" and #38 "Removing Graffiti from Historic Masonry"

"Keeping it Clean" by Anne E. Grimmer, U.S. Department of the Interior. PRG Inc. Box 1768

Rockville, MD 20847-1767, (301)309-2222