

# MASONRY CLEANING AND MAINTENANCE TECHNIQUES

## HUNTINGTON WOODS HISTORIC DISTRICT COMMISSION Guidelines For Historic Districts And Designated Historic Properties

### I. Definitions

For the purpose of these guidelines, the term "masonry" includes all brick, stone, stucco, terra cotta, ceramic tile and cement exterior finish.

The term "cleaning technique" encompasses all aspects of masonry cleaning methods including: type of cleaning agent, type of rinse, method and/or pressure of cleaning agent and rinse applications, and all other actions taken to insure the proper and safe use of a particular cleaning method.

The term "abrasive cleaning" includes all cleaning techniques that physically abrade the building surface to remove soils, discolorations, or coatings. Such techniques involve the use of materials which impact or abrade a masonry surface under pressure, or abrasive tools and equipment, such as air or water blasting with sand or other abrasives.

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

### II. Policy

The Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings **recommend against:**

"Applying paint or other coating, such as stucco, to masonry that has been historically unpainted or uncoated to create a new appearance."

"Removing paint from historically painted masonry. Sandblasting brick or stone surfaces using dry or wet grit or other abrasives. These methods of cleaning permanently erode the surface of materials and accelerate deterioration. Cleaning with chemical products that will damage masonry, such as using acid on limestone or marble, or leaving chemicals on masonry surfaces."

"Applying high pressure water cleaning methods that will

damage historic masonry and the mortar joints. Repointing with mortar of high portland cement content (unless it is the content of the historic mortar). Changing the width or joint profile when repointing."

"Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible. Certain treatments, if improperly applied, or certain materials by their physical properties, may cause or accelerate physical deterioration on historic buildings. Inappropriate physical treatments include, but are not limited to: improper repointing techniques; improper exterior masonry cleaning methods; or improper introduction of insulation where damage to historic fabric would result. In almost all situations, use of these materials and treatments will result in denial of certification."

The following guidelines concerning masonry are provided to assist in the interpretation and application of the Secretary of the Interior's Standards and Guidelines.

### III. Guidelines

#### *A. Painting*

1. Previously unpainted masonry shall not be painted.
2. Masonry which was previously painted may be re-painted. Unless old paint or other coatings can be removed without damage to the masonry, a painted surface **should** be re-painted rather than stripped of old paint.
3. Paint stripping from masonry surfaces that were either painted originally, or early in the building's history, should not occur unless such stripping is 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 **not** to remove paint permanently from the surface of such buildings.

#### *B. Cleaning*

Cleaning of exterior masonry for the rehabilitation or restoration of a historic structure may be appropriate, provided that the cleaning technique used will not cause damage or permanent alteration to the historic structure. The natural weathering and discoloration or patina of masonry materials is to be respected as the appearance achieved as a result of the original designer's selection of exterior materials. The use of any cleaning technique

that would totally remove this natural patina from original building materials should be avoided. The removal of surface grime (airborne dirt and pollutants) or stains resulting from failure of drainage systems, paint, graffiti, etc. Should be accomplished using the gentlest means possible. The preferred method of cleaning is hose pressure, with a non- ionic detergent and a natural bristle brush

Each application proposing the cleaning of masonry surfaces will be reviewed on its merits. Any Commission approval of a cleaning technique for an individual structure should not be interpreted as allowing the unrestricted use of that cleaning technique on other materials or structures. Each 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.

### ***C. Information Requirements***

Where masonry cleaning is proposed, the following information should be submitted with the application:

1. An explanation of the purpose for cleaning the masonry surface(s).
2. A detailed written description of the cleaning technique to be used, including:
  - a. An exact description of the cleaning agent to be applied, and the pressure or method in which the cleaning agent will be applied. Pressure specifications are to be expressed in pounds per square inch (PSI) exerted at the nozzle of the instrument (wand).
  - b. If a rinse is to be used, a description of the rinse, and the pressure or method in which the rinse will be applied.
  - c. If applicable, the name, address, and telephone number of the contractor.
2. An exact description of the type and location of the exterior materials to be cleaned, including their existing condition (e.g. cracked, spalling, open joints, patched, etc.).

### ***D. Conditions to be Observed for Cleaning, Repairing, or Painting***

1. With masonry cleaning, a test located on a small area (9 square feet max.) in an inconspicuous spot should be performed after approval of the application. After this test area has been inspected by staff, the certificate will be issued so that work may proceed with the project.

*Wet Cleaning should only take place between April 15 and November 1.*

2. Necessary masonry repairs (i.e. tuckpointing, stucco patching, crack repairs, etc.) are to be satisfactorily completed prior to cleaning the masonry surface. This will help guard against possible damage that could be caused by cleaning tools or materials penetrating into cracks and holes. A masonry surface must be in a state of good repair before cleaning is attempted.
3. Masonry repairs must retain the original or existing appearance of the masonry. If masonry is to be replaced, the new material must match the original or existing material in color, texture and hardness. Mortar must replicate original or existing mortar in color, consistency, design and hardness. For example, older brick walls are sometimes laid with dark gray or black mortar and finished with recessed joints.
3. In preparing to repaint previously painted masonry, stripping should only occur where the paint can easily be removed without damaging the underlying masonry. Where paint stripping cannot be performed without damaging the masonry, repainting over the existing paint is the only appropriate solution.

#### ***E. Recommended Cleaning Techniques***

1. Chemical cleaning can be used on brick surfaces. However, with the exception of certain detergents, it 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. A water rinse is required whenever a chemical cleaner is to be used.
2. 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.
3. Where approved masonry cleaning techniques do not achieve the desired results on painted stucco, repainting is recommended.
4. High temperature low or moderate pressure 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.

5. 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.

**NOTE:** The U.S. Department of the Interior has published several relevant **Preservation Briefs** with technical discussions of cleaning, coating and repairing masonry.

These guidelines were approved on \_\_\_\_\_, 2004 by the Michigan State Historic Preservation Office under the provisions of Michigan's Local Historic District Act (1970 PA 169, Section 5.(3); MCL 399.205)