

MASONRY CLEANING

DEPARTMENT OF ENVIRONMENTAL PROTECTION • NATURAL & HISTORIC RESOURCES • HISTORIC PRESERVATION OFFICE

Masonry cleaning should be undertaken only where dirt or other material obscures significant architectural features or may cause damage to masonry surfaces. Cleaning should not remove the patina that is evidence of a structure's history, and age, and should never be performed for the sole purpose of achieving a "new" appearance.

Cleaning must be implemented using the gentlest means that achieve these goals. Specially formulated non-toxic detergents and brushing or gentle scraping will remove most dirt, and flaking paint diluted chemicals may be appropriate for other materials. Abrasive methods such as wet or dry sandblasting should never be used. Steam and water pressure in excess of 150-200 p.s.i. may damage otherwise-sound mortar.

Appropriate cleaning techniques should be determined and photographically documented through test patches. Close-up before and after cleaning photographs should be provided in all instances to document that masonry surfaces were not damaged. Historic stain and paint finishes should be retained. Silicone sealants, cement-based coatings, and other non-historic treatments are not recommended.

Masonry Repointing

Repointing should occur only where necessary. Deteriorated mortar should be moved with hand-held, non-power tools to avoid damaging brick units. Character defining features such as "ruled" or "grapevine" joints should be repaired or reproduced, with new mortar matching the historic mortar in composition, color, texture, tooling, size, and profile of joint. Prepackaged "masonry cements" generally contain large amounts of Portland cement, which results in a very strong mortar that can be damaging to softer historic bricks. The following soft, lime rich mortar mix is recommended:

- 1 part white Portland cement
- 3 parts Type S hydrated lime
- 6 parts sand with no admixtures

Additional Information Request

Please specify or provide:

1. Cleaning specifications.
2. Extent of required cleaning by percentage and location.
3. Specific detergents, chemical dilutions, and dwell times used for cleaning.
4. Water pressures (P.S.I.) and nozzle distance.
5. Narrative description and photographic documentation of cleaning test patches.
6. Close-up before and after cleaning photographic documentation.
7. Information about stain, paint, or other coatings used.
8. Repointing specifications.
9. Extent of required repointing by percentage and location.
10. Mortar joint preparation.
11. Repointing mortar mix composition.
12. Close-up before and after repointing photographic documentation.
13. Proposed joint tooling, depth, and profile.

Please Note

Inappropriate masonry cleaning or repointing may result in project denial for tax credit or state/federal funding purposes. Please telephone the Historic Preservation Office at (609) 292-2023 if you require assistance.

Suggested Reading

Gilder, Comelia Brouke, *Property Owners Guide to the Maintenance and Repair of Stone Buildings*. Technical Series No.5, Albany, NY. Preservation League of New York State, 1977.

Grimmer, Ann E., comp, *A Glossary of Mason-Deterioration Problems and Preservation Treatments*. Washington, DC. National Park Service Preservation Assistance Division, 1984.

Grimmer, Anne E., "Preservation Brief 6: Dangers of Abrasive Cleaning to Historic Buildings." Washington, DC. Heritage Conservation and Recreation Service, 1979.

Mack, Robert C., "Preservation Brief 1: The Cleaning and Waterproof Coating of Masonry Buildings." Washington, DC. Heritage Conservation and Recreation Service, 1975.

Mack, Robert C., Tuler, de Teel Patterson, and Askins, James S., "Preservation Brief 2: Repointing Mortar Joints in Historic Brick Buildings." Washington, DC. Heritage Conservation and Recreation Service, 1980.

McKee, Harley J., *Introduction to Early American Masonry*. Washington, DC. National Trust for Historic Preservation/Columbia University, 1973.

Smith, Baird M., *Moisture Problems in Historic Masonry Walls*. Washington, DC. National Park Service Preservation Assistance Division, 1984.

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