



National Park Service
U.S. Department of the Interior

National Center for Preservation Technology and Training
Natchitoches, Louisiana



Basic Monument Cleaning



Purpose and goals of the video

This video was made as part of a series of educational tools to protect and preserve cemeteries and houses of worship developed under NCPTT's National Cemetery Preservation Initiative.

The purpose of this video is to cover the basic procedures for cleaning a stone grave marker. The most important thing to remember when working with stone grave markers is that these are delicate artifacts and a great amount of care must be exercised when cleaning them. While stone seems to be a durable material, it can be affected by weather and pollution and may be in a more delicate and fragile condition than what one may expect.

Do's and Don'ts

DON'T

- Don't do anything that will remove or damage the original surface of the stone.
- Don't use bleach or other salt laden cleaners
- Don't power wash with anything over 300 psi.
- Don't sand blast or use harsh mechanical methods such as power tools
- Don't use strong acids or bases



Damage caused by high-pressure power washer

DO

- Do no harm
- Select the gentlest cleaning method to accomplish the task
- Do perform small test patches before cleaning the entire stone
- Do follow manufacturer's recommendations
- Do follow manufacturer's safety guidance

Equipment

Cleaners

Cleaning stones should always be done by the gentlest means possible. For chemical cleaning, acceptable products are detergents, solvents, surfactants, biocides, and intermittent water misting. When choosing a cleaner it should be gentle, non-ionic, and have a neutral pH of 7 or one close to the pH of the stone. For example, the pH for marble is around pH10, thus the cleaner may be a pH of 9- 10. Never use bleach or salt laden cleaners nor any strong acids or bases.



Salt laden cleaner damage

Biocides

Biocides are available for use on stones that have significant biological growth. Follow directions as specified by the biocide manufacturer, making sure to rinse thoroughly. It is important to know that stone cleaned with biocides will lighten over the next few days.



Soft bristle brushes in different sizes

Brushes

Soft bristle brushes are required when cleaning stones. They can have natural or synthetic bristles. Vegetable brushes or soft grooming brushes for large animals are a few that can be found in chain or farm supply stores. All rough or metal edges must be covered with tape to reduce the chance of scratching the stone. Do not use any harsh mechanical devices such as sand blasting, high- pressure power washers, or power tools such as sanders or drills equipped with a wire brush.

Equipment cont.

Water

One of the most important things to locate in the cemetery is the nearest source of water. It takes a lot of water to properly clean stone. If your cemetery does not have running water then it is important to bring barreled or bucketed water to the site with you. Always keep your stone wet and rinsed; you do not want the cleaner to dry on the stone.

Safety

It is important to keep personal safety in mind above all else. Wear the appropriate safety equipment such as safety glasses, gloves, and masks. Many of the safety supplies suggested are available for purchase at building supply, hardware, and some large chain stores.

Always follow the manufacturer's safety guidance and consult with the product's label and Material Safety Data Sheet to learn about any risks about the product. If you don't have one you can look up the MSDS sheet for the specific product at OSHA's website.

(<http://www.osha.gov/SLTC/hazardcommunications/>

Reasons for Cleaning

There are several reasons for cleaning a monument:

- Soiling
- Staining
- Biological growth
- Vandalism

When cleaning, it is important to keep in mind the long- term effects of the cleaners and the long- term stability of the monument. One must think of the effects that the cleaner and the cleaning methods may have on stone. Cleaning may lead to acceleration of deterioration or loss of original materials.

Cleaning Methods

- Make small test strips to try out the cleaner and make sure we're not going to damage the stone. Select your preferred cleaner. To make the task easier, it is a good idea to bring it in spray bottles or small containers.



Test grid

- Soak the stone liberally with water before applying the cleaner. Stone is a very porous material and will absorb the cleaner. By soaking it beforehand, the cleaner will stay on the surface of the stone and minimize possible unwanted effects of the cleaner.



Damage caused by streaking

- Spray the cleaner on a manageable area and work from the bottom up in small, circular motions. This will allow the cleaner to get into all the crevices. Working from the bottom up minimizes streaking on the stone surface.

Note: If streaking occurs, it would be a good idea to contact a professional.

- One scrubbing over the area might not be enough and it may take more repetitions, but remember not to scrub so hard that you damage the surface. You may also want to use different brush sizes for different areas.



Scrubbed headstone

- Keep the stone wet while cleaning. Remember to rinse after cleaning each area and to thoroughly rinse the stone at the end to make sure that no cleaner is left behind.

Additional sources of information

NCPTT

<http://www.ncptt.nps.gov>

Association for Gravestone Studies

<http://www.gravestonestudies.org>

CHICORA Foundation

<http://chicora.org>

OSHA's MSDS website

<http://www.osha.gov/SLTC/hazardcommunications/index.html>

Books:

Lynette Strangstad, *A Graveyard Preservation Primer*, (Walnut Creek: Altamira Press, 1995).

King, Gregg G. *Michigan Historic Cemeteries Preservation Guide*. (Michigan: Charter Township of Canton, 2004).

Cemetery Preservation Initiative

In 2001, NCPTT identified the need for new technologies to protect and preserve cemeteries and houses of worship as one of six research priorities. In addition to developing new technologies there was a need to transfer and disseminate preservation technologies to preservation professionals and grass- roots cemetery enthusiasts. NCPTT has developed a suite of specialized training workshops for a wide range of audiences. Each workshop devotes special sessions to topics of significance in that region.



Through a joint effort with the National Cemetery Administration, NCPTT is evaluating the long- term effects of commercially available chemical cleaners for use in cemeteries. This nationwide effort looks at the effectiveness of different products for removing biological growth from federally- issued headstones. Additionally, researchers evaluate possible changes to the stones after cleaning. The results of this research effort will be recommendations that provide professionals with safe choices for cleaning headstones without long- term damage.

Materials Research Program

NCPTT's Materials Research Program consists of a group of researchers within the National Park Service who work in partnership with parks, laboratories, government agencies, universities and others to understand how cultural objects deteriorate with time. The program's goals are to understand cultural resources decay, to develop and evaluate new treatments to protect cultural resources and to disseminate scientific results and preservation technologies through presentations, publications, and training for preservation professionals nationwide.



A special interest within the program is the study of outdoor air pollution effects on cultural materials. Research projects are developed internally at the NCPTT Environmental Exposure Facility located on the campus of Northwestern State University, Natchitoches, Louisiana, and externally through cooperative and interagency agreements, contracts, and grants.

In addition to our laboratory research, we actively look at preservation issues in the field. As we evaluate new treatments and methodologies, we seek field test sites for further trials. Based on our research, we offer cemetery monument conservation workshops advancing the latest knowledge in cemetery preservation.





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NCPTT advances the application of science and technology to historic preservation. Working in the fields of archeology, architecture, landscape architecture and materials conservation, the Center accomplishes its mission through training, education, research, technology transfer and partnerships.

NCPTT was created by Congress in 1992 to develop and disseminate preservation technologies and to train practitioners in new technologies. NCPTT promotes preservation technologies in the fields of archaeology, historic architecture, historic landscapes, and materials conservation.



NCPTT emphasizes preservation technology research. We support the use of innovative technologies in the preservation of cultural properties and the transfer of technology from arenas not readily identified within historic preservation.