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Caring for Your Granite or Marble Monument

Cleaning Your Monument

Everything gets dirty—including the monument you just installed on your family plot. It is also natural for your new monument to gradually change color as it develops the patina of age! You want to keep your monument looking good – without destroying this patina.

Some cleaning methods are very damaging, removing not only soiling, but also patina and even the stone itself. Examples of poor cleaning choices that should never be used on your monument include acid cleaning, sand blasting, and pressure washing. Each of these is very damaging to stone monuments.

Acid cleaning, especially of marble, cleans by dissolving the surface of the stone. In addition, the acid used includes salts that are left in the stone, causing discoloration.

Sand blasting also removes the surface of the stone, eliminating the beautiful patina, and creating erosion on the stone surface.

Pressure washing is another technique that may be quick and easy, but leaves long-term damage. Many stones, especially marble or sandstone, are very friable and will be easily scarred by high pressure water.

Even many household chemicals are far too harsh, leaving behind salts or discoloring your monument.

This chart reveals how different cleaning methods can affect your historic marker.

Over-cleaning is another serious problem that will affect the longevity of the stone. Cleaning once every one or two years is generally adequate. Cleaning more often should be done only on the advice of a stone conservator.

Comparison of Different <i>Inappropriate</i> Cleaning Techniques		
Cleaning Technique	Potential Harm to Stone	Health/Safety Issues
Sand Blasting	Erodes stone; highly abrasive; will destroy detail and lettering over time.	Exposure to marble dust is a source of the fatal lung disease silicosis.
Pressure Washers	High pressure abrades stone. This can be exacerbated by inexperienced users. Pressures should not exceed 90 psi.	None, unless chemicals are added or high temperature water is used.
Acid Cleaning	Creates an unnatural surface on the stone; deposits iron compounds that will stain the stone; deposits soluble salts that damage the stone.	Acids are highly corrosive, requiring personal protective equipment under mandatory OSHA laws; may kill grass and surrounding vegetation.
Sodium Hypochlorite & Calcium Hypochlorite (household and swimming pool bleach)	Will form soluble salts, which will reappear as whitish efflorescence; can cause yellowing; some salts are acidic.	Respiratory irritant; can cause eye injury; strong oxidizer; can decompose to hazardous gasses.
Hydrogen Peroxide	Often causes distinctive reddish discolorations; will etch polished marble and limestone.	Severe skin and eye irritant.
Ammonium Hydroxide	Repeated use may lead to discoloration through precipitation of hydroxides.	Respiratory, skin, and eye irritant.

Never use metal tools on your monument—they can scratch the stone and may even embed small bits of metal that will rust years from now, causing staining and disfiguring the stone.

Safe Cleaning

Safe cleaning begins by understanding what you are trying to clean. For example, this stone is covered with biologicals – lichens that are composed of a symbiotic association of fungus and green algae. Biologicals are often the most common problem in many cemeteries, especially in areas with dense shade where biologicals grow best.



This granite lawn marker is heavily disfigured by lichen.

Many of these biologicals can be removed easily with a plastic paint spatula and a bucket of water – just wet the stone and slowly use the spatula to scrape off the lichen.

Sometimes a biocide may be needed, plus the correct biocide will also help prevent the lichen from quickly returning. A good biocide used by many stone conservators is a product called D/2 Biological Solution™ (<http://d2bio.com/>).

The first step in any cleaning is to make certain that the stone is stable and safe to clean. Is the stone unstable, so it might tip or fall over while cleaning? When you rub your hand over the stone does it crumble or sugar? If the stone exhibits these problems you should consult with a stone conservator for additional advice.

Otherwise, we recommend that the stone first be pre-wetted with potable water. D/2 should be applied full strength and allowed to dwell on the stone for about 10 minutes. It can then be lightly scrubbed with a soft bristle brush. NEVER use metal or hard bristles. Always check to make certain that the stone is not being adversely affected by the cleaning efforts.

Afterwards, thoroughly rinse the stone with additional potable water. This will help remove the remnant D/2, as well as the biologicals and other soiling.

Some stones are so soiled that several cleanings may be required to fully remove the biologicals and other embedded soil. If the cemetery doesn't have running water you will need to bring water, perhaps in gallon containers or even 5-gallon buckets. About 5 gallons per stone will usually be enough.

The stone will continue to lighten over the next several days as the biologicals continue to die. Sometimes the biologicals will produce a pink or yellow discoloration. This will gradually fade away over the next several days – or a second washing will typically resolve the issue.

D/2 is available in one gallon, five gallon, and even 55 gallon sizes. Sources are available on-line at <http://d2bio.com/buy-d2>.



Cleaning a stone with D-2

Other Problems To Avoid

Never use metal tools on your monument – they can scrape the stone and may even leave behind particles that will rust over time, disfiguring the beauty of the stone. So avoid tools like pry bars and metal brushes.

Many owners or cemetery maintenance firms have caused extraordinary damage by using herbicides and even fertilizers around monuments. Both herbicides and fertilizers contain salts. These salts enter the soil and, being soluble, gradually move from the soil up into the stone. The salts are deposited in the marble, sandstone, or granite, causing erosion and discoloration.

If fertilizer must be used, the best choice is an organic fertilizer such as bone meal for phosphorus or blood meal for nitrogen. Generally slow release fertilizers are better for stones than most quick acting commercial inorganic fertilizers. Any broadcast fertilizers must be swept off stones.



Improper use of herbicide kills everything around the stone and the salts from the herbicide will penetrate into the stone.

There is hardly ever a reason to use herbicides in a cemetery. They are generally broad spectrum, killing everything and promoting the subsequent growth of weeds. It is far better to manually remove weeds, vines, or plants than to rely on herbicides. But if herbicides are to be used, they must never be placed within a foot of a stone and never should be sprayed on the stone itself.

While the internet is a wonderful resource, there are many websites that offer very poor advice on the repair of broken stones. There are almost no materials that can be purchased at big box stores that are appropriate to use on historic monuments. For example, construction adhesives will not

mend broken stone. Within a year or two the joint will fail and the stone will sustain additional damage. Another product that should never be used in stone repair is Portland cement. This product is too hard and too impermeable for use on soft stones such as marble or sandstone. It is often too hard to even use on granite.

What is a Stone Conservator?

A stone conservator is an individual with specialized training in the preservation and repair of stone monuments. Stone conservators are members of the American Institute for Conservation of Artistic and Historic Works (AIC) and subscribe to the organizations Code of Ethics and Standards of Practice. Basic conservation principles include that repairs should, as far as possible, be reversible and should not hinder future treatment; repairs should be clearly distinguished from the original monument; materials and techniques should respect the historic monument; new materials must be thoroughly tested and determined to be compatible with the original.

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