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## CONSERVATION TALK

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### Questions from the Field: More Cleaning, Setting Compound, Preservation Assessments and Films from the National Center for Preservation Technology and Training (NCPTT)

#### Rotary Brushes for Cleaning Stone?

I'm still getting questions on cleaning. One that I include in this month's column deals with rotary scrubbers. An AGS member wrote asking me about a firm that is advertising using "only plastic bristle brushes." Yet the "brushes" are actually Nyalox rotary brushes used on electric drills. They claim such brushes are safe and the member wanted a second opinion. Another individual wrote about a local company that uses "a fine diamond studded pad" to clean stones and wanted to know if this pad was safe. Another asked about using the various 3M sanding sponges.

This answer is simple. No, none of these products is safe to use and no, none should ever be used on historic stone. Cleaning a stone is not the same as removing the surface of the stone. Unfortunately there are always contractors with no training in conservation who talk a good game. They like abrasive products because they are cheap, require no training, are easy for unskilled labor to use and maximize their profits. To avoid such companies, ensure that you hire a trained, professional conservator. Local stone companies are not conservators and do not have the training or knowledge to do this kind of work.

Back to those Nyalox rotary brushes. What is the rpm (revolutions per minute) of a typical electric drill? Most are variable speed, so from 0 to 3,000 rpm. What is the rpm of the human arm and hand? I timed a couple of people and it was around 60 rpm. Sure, you can go that slow with a drill, but will most people be satisfied? I'm betting not.

More importantly, take a look at the manufacturer's web site for Dico Nyalox. It turns out that this is a nylon with abrasive grit impregnated throughout each bristle. It is a nylon pad with resins holding some grade of silicon carbide mineral—an abrasive. What does the manufacturer recommend to be done with these brushes? Well, things like sand wood, remove paint, and round edges. Using these brushes is just like sand blasting your stone.

This harsh approach has significant potential to damage stones, especially those that are friable, sugaring, flaking, spalling, or have other problems. All abrasive techniques, including high pressure water and sandblasting are to be avoided. Contractors recommending them should be similarly avoided.

#### Use of Pressure Washers

Another question I received had to do with my recommendation to never use a pressure over 90 psi to clean stone. The individual asked whether a pressure washer could be used as long as the pressure remained below 90 psi.

My advice was based on typical municipal water supply pressures of between 50 and 100 psi. Obviously, a sugaring marble or spalling sandstone will be damaged even at 90 psi. In contrast, a new polished granite can easily withstand 90 psi. Yet, even the least expensive pressure washers for sale at big box stores typically advertise pressures of 1500 psi and commercial models can attain pressures of 7000 psi. I can't imagine anyone with a pressure washer having sufficient restraint to not operate it at full force. Also, if you can clean with simple water pressure, why spend the money, time, and effort to lug around a pressure washer?

Like abrasive pads, pressure washers speed the process and maximize the profits. They abrade the surface of the stone. Quick, simple, easy . . . and disastrous.

#### Use of Setting Compound for Resetting Marble

I received another question about whether setting compound could be used as a simple way to reset marble stones.

Well, let's start by taking a look at setting compound. You may know that it is sold by virtually all stone companies for the setting of granite monuments. But what is it?

That's often hard to determine. Most companies purchase setting compound from a manufacture under their own brand. Thus, Granite City sells Granite City Join Tite, Bicknell sells Bicknell Supply Co. Setting Compound, and so forth. Most setting compound, however, is an oil-based caulk made of talc, calcium silicate and oleoresin. It has a vegetable oil odor that might remind you of window or glazing caulk—with good reason since they are similar. Like all such caulks, it is nonelastic, being designed for joints with little or no movement. There will be some shrinkage and the caulk gets hard (and brittle) with age since it is based on drying oils. It is not designed as an adhesive.

With this information, a couple of concerns should be obvious. First, setting compound (just like mortar) is not an adhesive. It won't keep an unstable monument from toppling. If a monument requires pinning to

prevent it from toppling or to control liability, then setting compound is not a good choice. It is designed solely to seal the joint between two stones, preventing water penetration and the development of biologicals that can promote easier stone displacement.

Second, since setting compound is oil based, it can gradually seep into porous stone—such as marble or limestone. It can create a hallow or darkened area around the setting compound. In general, oils are not easily removed from stone and we should try to avoid exposing stone to oil. Granite, especially polished granite, is less permeable and so is more effectively used.

Thus, I really can't recommend using the typical oil based setting compounds for marble. At least one acrylic latex setting compound is available, but I don't know if it has been siliconized (many of the acrylic latex caulks have silicone added to increase workability). Silicone is not recommended for use on stones, partially because it is difficult to remove.

You're better off staying with a lime putty or natural hydraulic lime mortar for resetting marble, limestone and sandstone.

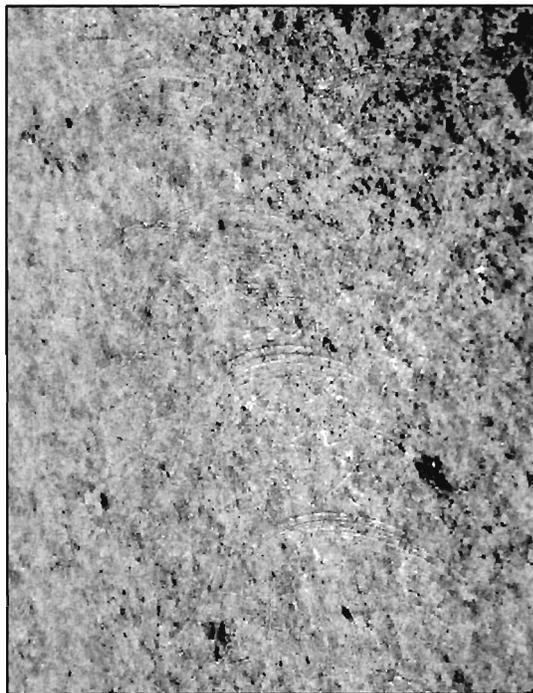
#### **Preservation Assessments— Are they really a good investment?**

Still another reader asked if an assessment of their cemetery was really necessary. They pointed out that it was going to cost several thousand dollars; wouldn't it be better to devote that money to repairs?

I strongly advocate preservation assessments. Chicora Foundation has conducted assessments across the country in both large and small cemeteries. Some have involved stone-by-stone assessments. Others have been focused on the property and landscape. In each case they have been designed to help the local caregivers better manage the property—and that includes the ability to better allocate scarce funding.

There are different terms for an assessment. For example, the English Heritage Trust calls these documents Conservation Management Plans, a term also used by the *Illinois Historic Cemetery Preservation Handbook*. Historic Scotland generally calls such documents conservation plans. Regardless, they are designed to help caregivers focus on what needs doing and how to go about the process, thinking about the cemetery in a structured, logical manner. A good preservation assessment also helps caregivers better understand the importance of the Secretary of the Interior's Standards for Preservation, explaining that the Standards offer a critical means of evaluating virtually all decisions involved in cemetery preservation. Once preservation plans are predicated on a careful analysis of what is present, the evaluation of needs, and recommendations for long-term preservation, the cemetery is in far more secure hands.

It often turns out that repairing monuments is not the first priority. Sometimes improving landscape maintenance is more critical. Or perhaps working to control vandalism. Thus, I'd opt for a thorough plan as



**Grinder marks on obelisk closeup: this photo shows the effects of using sanding pads to "clean" a marble stone.**

the first step in any long-term preservation effort. There will be plenty of time for monument repair, once you understand all of the issues facing the cemetery.

Make certain that the individual or group producing the assessment has a good track record and familiarity with conservation issues. In other words, landscape architects may be a suitable choice—if they have preservation and conservation experience. Don't forget that the plan should include a broad range of concerns, including roads, paths, vandalism and security, the monuments, landscape maintenance and administrative issues.

### **DVDs from NCPTT**

The National Center for Preservation Technology and Training (NCPTT) has produced several DVDs worth acquiring. One, "Basics for Iron Fence Care" (number 2007-03) provides a great overview on issues such as repair and painting of cemetery fences. Especially valuable instruction is provided on appropriate cleaning and painting of iron fences. Even if caregivers were to do nothing else, keeping fences painted would dramatically help prolong their lives.

The other DVD, "Tree Replacement" (number 2009-01) provides excellent guidance on replacing lost trees in the cemetery landscape. The video provides excellent information on how trees can be replanted without damaging graves or other sensitive archaeological resources. This advice alone may help restore historic cemetery landscapes that are beginning to look denuded as trees are lost from disease and lack of care.

Both are only about 10 minutes, so they aren't going to tell you everything there is to know. And there isn't a live person to answer questions. But they are well produced and carefully crafted introductions to two topics that are often overlooked in cemetery maintenance. If you haven't seen them, you should.

Both are free for the asking—go to [www.ncptt.nps.gov/ptt-products-catalog-of-publications-and-products/](http://www.ncptt.nps.gov/ptt-products-catalog-of-publications-and-products/) or call (318) 356-7444. ♦