

10 Commandments of Restoration Cleaning

The next step

Cleaning is usually just the first step in a restoration project. Old buildings often need consolidation and protective treatments on weakened, decayed brick or stone.

In the case of New York's Trinity Church, conservators had to strip off layers of contaminants just so they could see the damage! When cleaning revealed the rosy New Jersey brownstone surface, workers applied stone-strengthening and water-repellent consolidation treatments.

Today's nearly 100 percent breathable water repellents are way beyond the acrylic, paraffin and other film-forming water repellents of years back. Those products actually trapped water vapor within the masonry they were supposedly protecting, leading to cracking and spalling.

Contemporary water repellents let vapor out without letting liquid in, and without changing the appearance of the masonry. These treatments can help ensure the results of your cleaning will be preserved for generations.

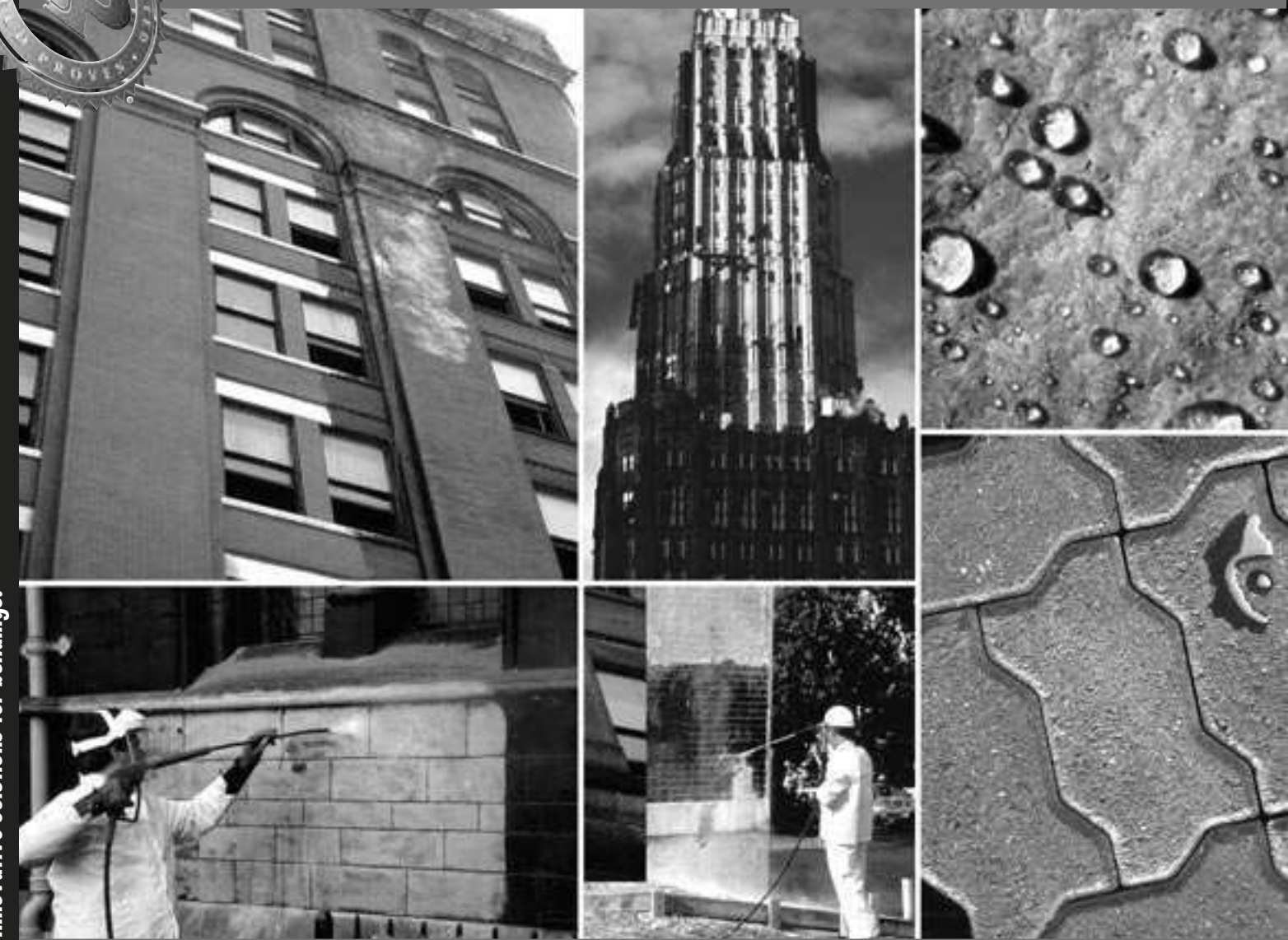
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Restoration cleaning of buildings is to the mobile pressure-washing industry what the Himalayas are to mountaineers, or what New York is to performers, - *"If you can make it there, you can make it anywhere."*

Here are a few reasons why restoration cleaning is major-league ball:

- The staining probably started before you were born. It's hard; it's thick. It's often made of multiple contaminants.
- The surface that's in the grip of these stains is often fragile, damaged or decayed. It can be like trying to scour stains off eggshells.
- The buildings are usually locally, nationally or internationally famous. The highly visible transformation from dirty to clean may attract media attention. This can work to your advantage in terms of invaluable free publicity. However, you must ensure your crews and job sites can stand up to public scrutiny.
- Just like in mountain climbing, mistakes can be costly and often irreversible. These factors and more make restoration cleaning a combination of art and science. The rewards are great, too. Successful restoration of early 20th century churches, train depots or other landmarks not only makes tremendous bullet-points for company resumes - a restoration is also a substantial contribution to the communities where we all live.

Here are "10 commandments" for staying on the straight and narrow path to successful restoration cleaning.

1. Thou shalt positively identify every substrate on the building.

It's not as easy as it sounds. Under the best of circumstances, polished granite can be taken for marble, or limestone for sandstone. When the stone is covered with 80 years of carbon staining and bird droppings, it's even more difficult. Consequences for using inappropriate treatments range from ineffective to disastrous. Get an expert from the local university if you have to. If you're not confident enough to stake your company's livelihood on your ID, get help.

2. Thou shalt use a proprietary cleaner from an established company that backs up its products with literature, customer service and job-site and specification-writing assistance.

One of the most important ingredients of a restoration cleaner is not in the cleaner. It's the technical support that comes with the cleaner. A reputable company wants to do more than sell you a product. A reputable company wants you to succeed and will make sure you have the right product and information to do so. Distributors, architects and contractors are all good sources for identifying such companies.

3. Thou shalt religiously follow all safety precautions in the product literature.

Many of these guidelines are common sense, like "don't get this product in your eyes," or "wear protective clothing." Guidelines such as "don't cut or alter these cleaners with other chemicals, or with bleaches — toxic gases may be released" may save lives as well as masonry. Use the cleaner only as specified. Results may be unpredictable if you use the cleaner for anything else. By closely following all safety guidelines — written by field service experts — you maximize your chances for a successful, accident-free cleaning job.

4. Thou shalt test before you clean.

Try out your cleaner on a hidden or out-of-the-way part of the surface. Manufacturers usually recommend test-cleaning a 4 square-foot area. Test each kind of surface and each kind of stain. What dissolves one kind of stain might leave another untouched. What cleans beautifully on one surface might damage another. Not all mistakes in restoration cleaning can be fixed. Test under the same conditions you'll have for cleaning. Test-panels you made in August might not be accurate for cleaning in October when temperatures are lower. Clean with the same dilution and equipment you tested. Be patient. Let interior test panels sit overnight before inspecting. Several weeks is usually a minimum for test panels on the exteriors of large buildings.

5. Thou shalt protect everyone and everything not set for cleaning from contact with the cleaner, wind drift, fumes, residue and rinse water.

During the 1997 exterior cleaning of Kansas City's 86-year-old Union Station, workers cleaned at night by floodlight, and on weekends to protect nearby traffic. If necessary, divert automobile and foot traffic. Other protective techniques:

- Use the highest possible dilution ratio with concentrates. Stronger isn't always better. Sometimes all that a stronger solution adds is damage to the masonry.
- Protect nearby nonmasonry items with polyethylene sheeting secured by masking tape.
- Don't clean in high wind.
- Shut down and cover air-handling equipment that could circulate fumes into or through the building.
- Inform building management and occupants about the cleaning operations.
- When high-pressure water rinsing is called for, prerinse at low pressure first to remove most of the residue.
- Use pH monitoring paper or a calibrated meter to check pH levels of rinse water and masonry surfaces.
- Find out the city's requirements for handling the wastewater generated by rinsing. The city's public works department is a good place to start. Ask about the city's industrial pretreatment program. The test panel stage is the time to make these calls.

6. Thou shalt use the proper equipment.

In most cases, workers apply cleaners with brush, roller or spray applicator. If spray applying, use low pressure. Spray application above 50 psi drives the cleaner right into the masonry. Once in, it's difficult or impossible to rinse out. Stains result. It's not an issue if you apply with low-pressure spray, brush or roller. Always use plastic buckets for cleaning solutions. Pressure-water rinsing is usually needed to flush the surface after cleaning, though a low-pressure prerinse with clean water is a good safety precaution. Use a fan-type spray tip 15-45 degrees. The pressure washer should be capable of hitting the wall with 400 - 1200 psi at a flow rate of 4 - 8 gallons per minute. It's the combination of flow rate and pressure that governs the efficiency of the rinse. Be careful of delicate, aged or damaged masonry that might not stand up to high pressure rinses.

7. Thou shalt not let the cleaner "dry in."

Leaving the cleaner on the surface too long can cause it to "dry in" to the surface, causing stains and residue. Hot, windy conditions increase danger of drying in. Thoroughly prewetting the surface with clean water, when called for by product literature, helps prevent drying in. You can also reapply the product for an additional minute or two if the first application is drying too quickly.

8. Thou shalt begin cleaning slowly and cautiously.

It's common to meet an unexpected contaminant against which a successfully tested cleaner is ineffective. One frequent mistake in restoration cleaning is the assumption that atmospheric soiling is the only contaminant. Sometimes workers remove the atmospheric soiling only to discover paint, subsurface staining or other contaminants. Reputable manufacturers are ready to lend their expertise at this — or any phase of the cleaning effort.

9. Thou shalt not clean in cold weather without special precautions.

It's best to clean when air and masonry surface temperatures are 40°F or above. It's best NOT to clean when temperatures are below freezing or will be overnight. Many cleaning compounds depend on chemical reactions to work. Cold slows the reaction. You may try to compensate by overapplying and accidentally damage the masonry. When it's 32°F or below, rinse water can freeze in saturated masonry, causing more damage. However, during the cold months, if both air and masonry surface temperatures rise above 40° (check the masonry with a thermometer), go ahead, with these precautions: Use hot water (180°) for prewetting and rinsing. Raising the surface temperature improves the efficiency of the cleaner. Extend dwell time by 10-20 percent, but don't let the cleaner dry in. Consider scaffolding covered with polyethylene. Space heaters inside may warm the surface enough for effective cleaning. Workers used this technique to remove more than 40 coats of paint during the cold-weather restoration cleaning of the United States Capitol. A final caution — the test panels you did in warm weather won't be accurate for cold weather. Test in cold weather if you clean in cold weather.

10. Thou shalt not go it alone.

Never try to guess your way through problems or questions. Your distributor, sales rep or manufacturer's customer service are always happy to help. The right answer is usually just a phone call away.

