



## **CLEANING INSTRUCTIONS FOR MASONRY**

### **CLEANING METHODS**

The methods of cleaning concrete masonry can generally be divided into three categories: hand cleaning, water cleaning, and chemical cleaning. Cleaning by any method should be performed on an inconspicuous section of the building or a sample panel to ascertain its effect.

1. Hand Cleaning – Simple hand tools such as a trowel, chisel, stiff bristle or fibre brush, abrasive block or broken piece of masonry are first used for cleaning during construction. Steel-wire brushes should not be used because they can leave behind metal particles that may rust and stain the masonry.
2. Water Cleaning – Water cleaning involves scrubbing with water and detergent, water soaking or steam cleaning. When using water cleaning methods, the amount of water used should be limited to the least amount that will effectively clean the wall, as any water that enters the wall may promote efflorescence. See Control and Removal of Efflorescence, NCMA TEK 8- 3A, for more detail. Unpainted walls can usually be cleaned by scrubbing with water and a small amount of detergent. This is a non-aggressive cleaning method that generally does not alter the masonry appearance. It may not be cost-effective for large areas, however, due to the labor involved. Clay or dirt should first be removed with a dry brush. Steel wire brushes should not be used because any metal particles left on the masonry surface may rust and stain the masonry. Non-metal brushes such as stiff fibre or nylon are preferred. Soaking with water causes dirt deposits to swell, loosening their grip on the underlying masonry and allowing them to be flushed away with water. Again, this method may not be appropriate if efflorescence is the primary concern. Heated water is useful on greasy surfaces or during cold weather. However, when used with alkaline chemicals, warm water should not exceed 160° F (71°C). There is no significant advantage to using hot water with acid cleaners. Pressure washing equipment can be effective for surface cleaning, and is often specified for masonry restoration work to avoid the use of harsh chemicals. Water pressure should be kept to a minimum to avoid driving water into the wall which can cause efflorescence. Note that high pressures can damage masonry or alter the final appearance. Using a consistent pressure and maintaining a set distance from the wall will produce the most uniform results. If high pressure cleaning is used, it is recommended that:
  - a. the pressure be limited to 400 to 600 PSI (2.76 - 4.14 MPa);
  - b. a wide flange tip be used, never a pointed tip;
  - c. the tip be kept at least 12 in. (305mm) from the masonry surface, and
  - d. the spray be directed at a 45° angle to the wall (never perpendicular to the wall).

3. Chemical Cleaning – Chemical cleaning can be a more aggressive method than pressure washing and is often more efficient and cost-effective. With proper technique, the results are uniform across the wall, although the wall's final appearance can be changed by using this method. Apply chemical cleaning solutions with low pressure spray (less than 50 PSI, 345 kPa) or soft-fibered brushes. Chemical cleaning solutions can be used to clean concrete masonry without damaging the surface; avoid using raw or undiluted acids. Even diluted acids should be used with caution, and only after thoroughly pre-wetting the wall, as acids dissolve the cement matrix at the masonry surface and can also damage any integral water repellent at the surface. This leaves the face more porous and exposes more aggregate, thereby changing the colour and texture of the masonry. In the case of masonry with an integral water repellent, acids can also reduce the water repellency at the surface. Acids should never be applied under pressure. As a guideline, any cleaner with a pH below 4 or 5 should be considered to be acidic in nature. In addition, highly alkaline products require an acidic neutralizing after wash as well as thorough rinsing; efflorescence can be an unwanted result if there is residual alkali.

Recommended cleaners:

- [EaCo Chem SOS-50 New masonry detergent](#)
- [Diedrich Spray – Away Efflorescence cleaner](#)