



11450 US Hwy 380 • Suite 130-#289 • Cross Roads, TX 76227 • 800-441-0111 • FAX: 704-635-7363

ceta.org/members-covid-19/

Soft Washing White Paper on Sanitation of Surfaces

Introduction

This white paper is to reinforce the process and conditions under which a cleaning and sanitation process known as soft washing may be used when there is a threat of exposure to transmission of disease, either bacterial or viral, from a surface to a person.

Centers for Disease Control (CDC)

The CDC definitions for cleaning, sanitizing, disinfecting and sterilizing are:

Cleaning

Removes germs, dirt, and impurities from surfaces or objects. Cleaning works by using soap (or detergent) and water to physically remove germs from surfaces. This process does not necessarily kill germs, but by removing them, it lowers their numbers and the risk of spreading infection.

Sanitizing

Lowers the number of germs on surfaces or objects to a safe level, as judged by public health standards or requirements. This process works by either cleaning (which physically removes germs from surfaces or objects) or disinfecting (which kills germs) to lower the risk of spreading infection. Sanitizing is generally a little more gentle than disinfecting.

Disinfecting

Refers to using chemicals to kill germs on surfaces or objects. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface *after cleaning*, it can further lower the risk of spreading infection.

Sterilizing

A process that destroys or eliminates all forms of microbial life and is carried out in health-care facilities by physical or chemical methods.

Soft Washing Method

Soft washing is a cleaning method used generally on the outside of buildings and is an alternative to pressure washing. Soft washing generally uses three chemicals mixed in varying solutions to clean and sanitize surfaces. These three chemicals by volume are hydrogen di oxide (water), sodium hypochlorite (bleach) and surfactants (soaps). The trio of chemicals are used to create a cleaning that has instant results and requires very little agitation before the surface is rinsed with clean cool water. Because of the sodium hypochlorite, an excellent sanitizing and disinfecting agent, surfaces can have significant reductions of mold, mildew, algae, fungus, mosses, lichens and yes even bacteria and viruses. Reductions so much

Jimmy Welch - CHAIR	Mike Turner	Alan Greer	Laura Niessner-Pyatt	Brad Van Otterloo	R. Calvin Rasmussen	Daniel Holland	Yujin Anderson
American Pressure Robbinsdale, MN	Etowah Chemical Gadsden, AL	FNA-Group Pleasant Prairie, WI	Karcher NA Denver, CO	MI-T-M Corporation Peosta, IA	Royce Industries, LC Las Vegas, NV	Softwash Systems Sanford, FL	Steamerics Inglewood, CA
Jay Hallaway Alkota Cleaning Systems Alcester, SC	Rick Gilpatrick FNA-Group Pleasant Prairie, WI	Richard "Bo" Bodo Karcher NA Denver, CO	Hector Valdez Karcher NA Denver, CO	Bryson Sharp Northern Tool & Equip Fairbault, MN	AC Lockyer Softwash Systems Sanford, FL	Mike Conway Southwire Company Largo, FL	Delany Johnson Wayne Combustion Fort Wayne, IN

that it rivals similar cleanings from pressure washing equipment by a multiplier of 4x in sanitation and duration of clean.

The Problem

It is notable to point out that surfaces thought to be resistant to bacteria and viruses by composition, may not be as resistant to sustaining bacteria and viruses, once that same surface has built up a biofilm on that surface. Biofilms can live on residue from body oils, pollen, waste products, food, animal or insect defecation, as well as moisture from rain and or humidity. This biofilm then takes up residence allowing microbes, bacteria and viruses to grow just as they do on a petri dish in a lab. If you do not remove the biofilm then you simply cannot effectively reduce the numbers of bacteria and viruses occurring on a surface according the Centers for Disease Control (CDC) and World Health Organization (WHO). To return a once resistant surface to that resistant state, you must conduct an initial deep cleaning, thereby removing the biofilm, before the sanitation / disinfection process.

The Solution

The CDC recommended sanitation solution is to use a .005 solution of sodium hypochlorite (bleach) and water to sanitize a surface. Anecdotally we trust that a thorough deep cleaning with a 2% sodium hypochlorite and water solution with a powerful bleach stable surfactant, should be used during an initial deep cleaning. The CDC also recommends agitation with a brush during that initial deep cleaning. Once every side and every surface has been treated and agitated with a brush, the soft wash solution needs to dwell wet on the surface for 10 minutes. After the dwell time a thorough rinse of cool clean water can be used. If it is available, hot water is an added assurance for rinsing because it is known that bacteria and viruses do not tolerate temperatures above 140 degrees Fahrenheit.

Once the initial deep clean has been concluded, the CDC recommends a solution of .005 sodium hypochlorite (one half of one percent bleach) to water and a surfactant to spray on the now restored surface. This treatment is low enough in sodium hypochlorite that it should not harm the surfaces treated. Finally, that treatment should be allowed to dry in place on the surface.

Frequency of subsequent treatments depends on the current threat as well as seasonality and population traffic at the treatment site. During a pandemic in an area where public will still utilize the area daily treatments will be needed. If it is flu season, weekly treatments can be made with staff cleanings bolstering the efforts on surface wipe-downs throughout the day and week with sanitizing cleaners by spray bottle and cloth. Outside flu season areas should be sanitized monthly with staff doing spray bottle and hand cleanings to bolster the sanitation efforts.

Personal Protective Equipment (PPE)

Soft washing requires specific PPE. Because of the caustic nature of sodium hypochlorite, the user must practice care when mixing and applying chemicals. Though there is no pressure as opposed to a pressure washer, which might cause injury, the risks associated with soft washing are different. Chemical exposure leads us to protecting our eyes, skin and lungs to possible effects of caustic chemicals. Here is a common list of required PPE for soft washing.

- Eye Protection in the form of safety glasses or a face shield.
- Skin protection in the form of rubber gloves and protective coveralls.
- Foot protection in the form of rubber boots.

- Lung protection in the form of an N-95 respirator for protection against pollution, dust, smoke or flu or an OV rated for organic vapor protection.
- A wide brimmed hat is also recommended to protect against sun and overspray.
- Each sanitation worker must wear the proper PPE for the application. Tyvec or alike coveralls, face shield or wraparound sunglasses, N-95 or other AVAILABLE respirator, rubber gloves, rubber boots.

Equipment

Soft wash spraying systems are specific. Because they spray caustics like sodium hypochlorite (bleach) they are constructed of metals, tanks, pumps, reels and hoses that resist breakdown for caustic sanitizers like sodium hypochlorite. Be aware that you cannot convert most pump sprayers, backpack sprayers or pest control equipment into effective soft washing equipment without damaging those sprayers.

A soft wash system is an agricultural style power sprayer that is used to apply a soft washing solution to a surface. The soft washing solution does all of the cleaning and there is no pressure needed to complete the cleaning process. The soft wash piece of equipment is for transportation of the solution alone and the sprayer does not complete the cleaning.

References:

Anecdotally according to or by means of personal accounts rather than facts or research.

SoftWash Systems of North America Training Curriculum

CDC (Centers for Disease Control and Prevention) <https://www.cdc.gov/>

<https://www.cdc.gov/coronavirus/2019-ncov/index.html>

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cleaning-disinfection.html>

<https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html>

WHO (World Health Organization) <https://www.who.int/>

OSHA (Occupational Safety and Health Administration) <https://www.osha.gov/>

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910TableofContents>

3M PPE Equipment https://www.3m.com/3M/en_US/worker-health-safety-us/