



Camacho
Equipment &
Janitorial
Supply, Inc.

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Green Cleaning Program

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Overview. This program establishes Camacho Equipment & Janitorial Supply, Inc.'s preference for green cleaning, and to assist management in pursuit of the goal to provide a clean, healthy, and safe building environment while simultaneously minimizing the impact of cleaning processes, procedures, and products on people and the natural environment.

Scope. This program applies to these specific buildings/sites;

Hammond/South Bend US Courthouse
Indianapolis International Airport
Indiana BMV
US Army Reserve Center

Goals.

Program Goals: Our goal is to minimize exposure of building occupants to potentially hazardous chemical, biological, and particle contaminants which may adversely impact air quality, personal health, building finishes, systems, and the environment, and to balance this with the cost and quality. In addition, it is our goal to obtain "Green Building" certification for green cleaning via on-going inspections through ISSA, The Worldwide Cleaning Industry Association.

Performance Goals:

Product

- Goal – Seek to purchase effective cleaning, hard floor and carpet care products that meet program sustainability criteria.
- Metric – Purchases will be evaluated based on the portion of the product (measured by cost) which meet one or more of the sustainable criteria.
- Performance – 75% of products by cost should meet these criteria.

Operation

- Goal – Maintain standard operating procedures for critical tasks.
- Metric – Procedures will be evaluated based on quantitative audit and inspection results of building spaces as well as employee and customer feedback.
- Performance – All procedures will meet green cleaning criteria.

Training

- Goal – Ensure appropriate follow-on employee training.
- Metric – Training will be based on new operating procedures.
- Performance – All employees will know safety requirements and procedures.

Feedback

- Goal – Collect feedback to ensure continuous improvement and customer satisfaction.
- Metric – Customer feedback will be determined by results of surveys.
- Performance – All customers are satisfied with the quality of cleanliness.

Budget

- Goal – Meet budgetary considerations.
- Metric – Costs will be evaluated based on total money spent.
- Performance – Employ green cleaning procedures while containing expenses.

Responsibilities. The Site Manager is responsible for managing the Green Cleaning Policy. All employees involved with various elements of the green cleaning program shall carry out their tasks according to this program and report all relevant activities to the site manager.

Products. Wherever feasible, cleaning products and materials should be compatible with the requirements of LEED v4.1 O+M and the associated credits for janitorial service, products, supplies, and equipment. Product types subject to these requirements include, but are not limited to: bio-enzymatic cleaners, hard floor cleaners, carpet cleaners, general purpose cleaners, specialty cleaners, odor control products, disinfectants, paper products, trash bags, and hand soaps.

Sustainability Criteria. The products should meet one or more of the following standards for the appropriate category:

1. General cleaning products for general purpose, bathroom, glass and carpet cleaners.
 - Green Seal GS-37, Cleaning products for industrial and institutional use.
 - EcoLogo UL 2776 for laundry detergents
 - EcoLogo UL 2792 for cleaning and degreasing compounds
 - EcoLogo UL 2759 for hard surface cleaners
 - EcoLogo UL 2795 for carpet and upholstery care
2. Disinfectants, metal polish, floor finishes, strippers or other cleaning products not addressed by GS-37 or UL 2759, 2776, 2792, 2795.
 - Green Seal GS-40, Floor care products for industrial and institutional use.
 - EcoLogo UL 2798 for digestion additives for cleaning and odor control
 - EcoLogo UL 2791 for drain or grease trap additives
 - EcoLogo UL 2796 for odor control additives
 - EcoLogo UL 2777 for hard floor care
 - California Code of Regulations Title 17, Division 3 Chapter 1, Air Resources Board, Subchapter 8.5, Consumer Products Article 2: Consumer Products
3. Disposable paper products and trash bags.
 - Green Seal GS-1 for sanitary paper products
 - EcoLogo UL 175 for sanitary paper products
 - EcoLogo UL 2771 for paper products
 - U.S. EPA Comprehensive Procurement Guidelines for Janitorial Paper and Plastic Trash Can Liners.
 - California Code of Regulations Title 14, Chapter 4, Article 5
 - California Public Resources Code, Division 30, Waste Management [40000 - 49620], Part 3 State Programs [42000 - 42999], Chapter 5.4. Plastic Trash Bags [42290 - 42298]
4. Hand soaps.
 - Green Seal GS-44, for industrial and institutional hand cleaners
 - EcoLogo UL 2783/4 for hand cleaners and instant hand antiseptics

Approved Products. Green products are continually tested by our company for effectiveness in an effort to improve sustainability of our green cleaning program. These products are approved for use:

- a) **General Cleaning.** Our company predominately uses the Envirox family of chemicals and dilution control management systems. The system dispenses product to ensure parts per million as required by the EPA, limits employee contact with chemicals, and minimizes waste through use of concentrated formulas.

Manufacturer	Product	Purpose	Compliant Criteria
Envirox	Multi-Purpose Cleaner	General Purpose Cleaner	GS-37 Certified
	117 Concentrate	Sanitizer/Virucide Cleaner	EPA Registered
	Mineral Shock	Mineral Deposit Remover	Ecologo
	Industrial Degreaser	Degreaser	Ecologo
	Multi-Purpose Cleaner	Clean Carpeting	GS-37 Certified

b) **Floor Maintenance.** Our entire customer flooring consists of VCT, terrazzo, brick, concrete, laminate, hardwood, ceramic tile, and carpeting, and/or combinations thereof. Products with low or no VOCs are preferred.

Manufacturer	Product	Purpose	Compliant Criteria
Pioneer Eclipse	X-Factor 22	Finish	NA
Pioneer Eclipse	Blast Off	Finish Remover	NA
Pioneer Eclipse	NeutraFresh	Floor Cleaner	California Code of Regulations Title 14, Chapter 4, Article 5
Envirox	Multi Purpose Cleaner	Clean Carpeting	GS-37 Certified
Essential Industries	Liquid Defoamer	Defoamer	NA

c) **Trash Bags/Liners.** Recycled content trash bags are used whenever possible. Green Seal does not recommend products.

Manufacturer	Product	Purpose	Compliant Criteria
Jadcore	Trash Bags/Liners	Collect waste	US Environmental Protection Agency Comprehensive Procurement Guidelines for Janitorial Paper and Plastic Trash Can Liners

d) **Paper Product.** Unbleached, recycled-content papers are the preferred choice.

Manufacturer	Product	Purpose	Compliant Criteria
Nittany/Bay West	Roll Towel	Hand towel	US Environmental Protection Agency Comprehensive Procurement Guidelines for Janitorial Paper and Plastic Trash Can Liners
	Roll Towel	Hand towel	
	Paper Towel	Multi-fold Hand towel	
	Toilet Tissue	Toilet paper	

e) **Hand Soap.** Non-antimicrobial soap is preferred due to the potentially harmful ingredients typically found in hand sanitizers. Green Seal does not certify any hand soap which makes claims of sanitizing, disinfecting, or antiseptic qualities.

Manufacturer	Product	Purpose	Compliant Criteria
Deb	Antimicrobial Foaming Hand Soap	Clean Hands	GS-44 certified

Equipment. Newly purchased replacement equipment for current equipment shall comply with the requirements of LEED® 2009 for Existing Buildings: Operations and Maintenance IEQ Credit 3.4: Green Cleaning, Sustainable Cleaning Equipment.

Sustainability Criteria.

- All Equipment
 - Powered equipment is ergonomically designed to minimize vibration, noise, and user fatigue.

- All powered cleaning equipment shall be designed with safeguards, such as rollers or rubber bumpers, to reduce potential damage to building surfaces.
2. Automated scrubbing machine
 - Equipped with variable-speed feed pumps and on-board chemical metering to optimize the use of cleaning fluids.
 - Operate at a sound level of less than 70 dBA.
 3. Buffer/Burnisher
 - Equipped with vacuums, guards, and/or other devices for capturing fine particulates.
 - Electric, low-speed.
 - Operate at a sound level less than 70 dBA.
 4. Vacuum
 - Certified by the CRI “Seal of Approval” Testing Program.
 - Operate at a sound level of less than 70 dBA.
 5. Carpet extractor
 - Certified by the CRI “Seal of Approval” Testing Program for deep-cleaning extractors.
 - Hot water extraction equipment for deep cleaning carpets capable of removing moisture such that the carpet may dry in less than 24 hours.
 6. Propane-powered floor equipment
 - Meets Environmental Protection Agency (EPA) standards for specific engine size.
 - Equipped with high efficiency, low emission engines with catalytic converters and mufflers.
 - Operate at a sound level less than 90 dBA.
 7. Re-usable/washable rags are to be utilized to clean surfaces throughout the building.
 8. Re-usable/washable carpet bonnets are to be utilized.
 9. Re-usable/washable dust and wet mops are to be utilized.
 10. No equipment shall be used in a manner that voids carpet, fixture or any manufacturer warranties.

Performance Metric. Our company will maintain an inventory of powered cleaning equipment and repair and maintenance activities. When cleaning equipment replacement is necessary, acquisition dates and supporting documentation will be retained to demonstrate that all newly acquired equipment complies with all appropriate sustainability specifications.

Cleaning Procedure. The procedures, strategies and metrics below are employed to ensure effective implementation of our Green Cleaning Policy.

Strategy for Sustainable Green Cleaning. Development of cleaning strategies should focus on the following:

- Efficient use of chemicals
- Efficient use of supplies
- Meeting the hygiene and appearance goals of the building/property
- Protecting the building’s occupants, systems and finishes from contaminants that could adversely affect them

- Addressing the frequency of cleaning in all areas
- Assess the areas to be maintained and the customer usage patterns.
- Determine how to meet the overall goals of the green cleaning program.
- Develop a comprehensive approach to the maintenance of the building property and determine the products to be used
- Ensure employees are educated on the processes.
- Ensure that safety, health, and environmental practices are compliant with applicable local regulatory requirements.
- Outline building-specific procedures for proper disposal of all waste.

Specific Areas. Cleaning and safety guidelines for specific areas can be found in the work instructions of our Quality Control Plan. Specific area types addressed in the work instructions are:

1. Restrooms
2. Common Areas
3. Offices and Classrooms
4. Showers and Locker Rooms
5. Stairwells
6. Entryways and Exterior Walkways
7. Elevators
8. Housekeeping Closets
9. Hard and Carpeted Flooring
10. Microfiber Laundry

Indoor air quality and environmental impact start at the door. Appropriate matting, properly placed and maintained, will prevent indoor floor surfaces from wearing prematurely, decrease contaminants inside the building, and prevent slips and injury. All public points of entry into buildings under our company purview will be equipped with walk-off matting. Walk-off matting at entries should measure a minimum of 10 linear feet in the direction of entry.

Safety. All practices enhancing the safety of our customer and employees are communicated via an in-person or web based training setting on an annual basis.

Safety data Sheets (SDS)

- Follow all chemical labels and SDS warnings and use products only as directed.
- Employees shall never use an unlabeled container.
- Employees shall never use any chemical product if uncertain what it is.
- Report to cognizant supervisor all missing or unreadable labels
- A current SDS for all chemicals shall be maintained in each building in a readily accessible location.

Personal Protective Equipment (PPE)

- Wear protective gloves and/or safety glasses as directed on the product label or SDS.
- Inform your supervisor if required PPE is not available.
- Always spray chemicals away from the body, especially eyes and mouth. Whenever possible, spray chemical into microfiber cloth.
- Do not eat or drink near any cleaning chemicals and always wash hands after using chemicals.
- Never smell, inhale or taste the contents of a chemical container to determine its contents.

Using Chemical Solutions

- Use only products provided by our company. Do not bring products from home.
- Employees should only use products they have been trained to use.
- Report all chemical spills to a supervisor immediately and refer to instructions on SDS for proper spill cleanup and disposal.
- Employees should inform a supervisor if unable to get something clean with the chemicals provided.
- If product comes into contact with any body part, flush immediately with water, remove contaminated clothing, and follow first-aid instruction on the label or SDS.
- All chemical containers are to be securely covered and stored away from flames, heat, and the sun.
- Remove all cleaning chemical residue so customers won't be overexposed to chemicals.
- Wash hands after using chemicals.

Mixing Chemical Solutions

- Never mix two different chemical products together: this may cause a dangerous reaction and/or poisonous gas.
- Only fill each secondary container bottle with the exact same product each time you refill.
- Dilute with water only where required.
- Make sure water is turned off and that no chemicals remain in mop buckets, dispensers or machines.
- Make sure all caps are secure when returning chemicals to rack or closet.

Chemical Storage

- Do not store liquid chemicals above eye level.
- Do not store or consume food or drinks around chemicals.
- Store in a manner that limits opportunities for accidental spills, leaks, or other mishaps.
- Safe handling and storage of cleaning chemicals shall be evaluated by supervisory spot check and inspection.

Chemical Portion Controlled Dispersion System

- It is the intent of our company to use chemical concentrates whenever possible to lower the possibility of exposure to people.
- A portion controlled, closed dilution system is used in order to further reduce environmental impacts.
- Pre-labeled containers are used.
- Chemical concentrates shall be used with dilution systems to the maximum extent possible.
- Dilution systems and portion control devices shall never be tampered with or bypassed.

Vulnerable Occupants. The needs of vulnerable occupants, such as occupants with asthma or other respiratory conditions, compromised immune systems, or sensitive or damaged skin, will be addressed to ensure that adequate precautionary measures are taken in relation to the Green Cleaning Program. Product selection and use should vary on a case-by-case basis, as needed.

Energy and Water Conservation. Lighting should be turned off in unoccupied spaces. Some lighting is designed to stay on for safety or security purposes and shall remain lit. Cold water shall be

used in lieu of hot water at all times except with carpet extractors. Use of cold water reduces energy consumption by water heaters, reduces the possibility of burns or scalding to personnel, and minimizes harmful off-gassing of chemicals. All cleaners and concentrates listed above are effective when used with cold water. Potable water shall be conserved to the maximum extent possible. Strategies for minimizing use include using a spray bottle of water and cleaning chemical in lieu of a bucket of water and cleaner, using the appropriate dilution rates with concentrated chemicals to minimize post-clean rinsing, and mixing only the amount of chemical and water needed to perform duties. Waste water shall be disposed only in sanitary sewer systems. Employees are required to report malfunctioning fixtures that waste water e.g. toilets, faucets, water fountains, etc.

Staffing. Our company employs 150+ Custodians. To ensure a clean environment that promotes the health and well-being of building occupants and users, we require that Custodians be provided: a scope of work checklist; work instructions; and meet weekly with their supervisor to discuss any issues.

Training. All custodians are properly trained in the use, maintenance and disposal of cleaning products, dispensing equipment and packaging. All custodians are trained on new equipment and chemicals prior to initial use. Custodians are also trained on using PPE, Chemical safety, and the desired way to move and lift objects. Green Cleaning Training Syllabus enclosed.

Policy Review. Assessment of the ongoing performance of the Green Cleaning program will be conducted by a three-part process: 1) Managers, supervisors, and team leaders will assess service quality performance at the point of delivery daily and address any developments relating to green cleaning practices; 2) An annual survey will be provided to building occupants to elicit feedback on cleaning and custodial service; 3) The Green Cleaning Program will be reviewed annually.

Quality Control. Quality control will be measured as per our company Quality Control Plan.

Feedback. Occupant Feedback will be assessed by email on the company website which will allow occupants to file complaints, concerns or compliments on the cleanliness of the buildings which we serve.



Green Cleaning Training Syllabus

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Introduction

- Introduction to Training
- Objectives
- Pre-test

This Green Cleaning training is one of several green cleaning training courses developed primarily for operations and maintenance staff at the supervisory and custodian level.

Training will address:

- Sources of soil in a facility;
- Physical/chemical characteristics of soil;
- Micro-organisms;
- Reducing bacterial and viral (micro-organism) infections;
- Disinfectants/Sanitizers;
- Green cleaning products and equipment;
- Levels of Clean or Service Levels;
- Basic cleaning methods;
- General frequency of cleaning tasks.

Training Objectives

Objective. The objective of this training is to establish a working knowledge of the basic principles of green cleaning, including an introduction to green cleaning products and practices.

Enabling Objectives. Upon training completion, participants will be able to describe or list:

- Three sources of soil in a facility;
- The main chemical property of soil for knowledge in selecting the right cleaner;
- Three soils that are most effectively cleaned with an acid cleanser/detergent and three soils that are most effectively cleaned with a alkaline cleanser/detergent;
- Three of the most familiar micro-organisms and ways to reduce the number of micro-organism infections;
- Three issues regarding the use of disinfectants;
- Three benefits of green cleaning products;
- The products on the Camacho Janitorial Approved Green Cleaning Products List;
- Two types of high-performance equipment used in green cleaning;
- One way to prevent soil from entering a facility and suggested requirements;
- The concept of Levels of Clean;
- Three benefits of defining Levels of Clean;
- Two wiping methods used in cleaning;
- The difference between dry-mopping and wet/damp-mopping;
- Routine cleaning/maintenance tasks required for a good cleaning program; and
- Tasks that can be delayed by using good daily routine cleaning.

Pre- and Post-Test

- Before the start of the course, a multiple-choice pre-test will be given to determine each participant's current level of knowledge of Green Cleaning.
- At the end of the training course, participants will take a post-test to check on learning.
- The scores of these two tests will be compared to determine the effectiveness of the training material.

Review

- This section presented an introduction of what the course will cover.
- Course objectives were stated.
- Pre- and post-tests were explained.

Green Cleaning

Components of green cleaning

- Products and equipment
- Sources of soil
- Property of soil
- Micro-organisms
- Disinfectants and Sanitizers
- Levels of clean
- Building entries
- Worker safety
- Cold or hot water
- Cleaning methods and practices
- Frequency of cleaning and maintenance

Products and equipment

Green cleaning programs rely on the use of environmentally-sensitive chemicals and high performance cleaning equipment. Green cleaning products and equipment minimize adverse affects on people's health and the environment.

Most green cleaning products undergo certification tests by organizations like Green Seal and Eco-logo to ensure they are effective and safe for the consumer and environment. Manufacturers have also made advancements in product design that improve the capture and removal of soil. Advancements include the development of microfiber cloths and mop heads, and special filters on vacuum cleaners called high efficiency particulate air (HEPA) filters.

This list is an example of high performance cleaning equipment and their effect of use:

- Microfiber cloths, mop heads and dusters: Absorb and pick up more soil; Trap soil within the microfibers; Reduces the amount of chemicals required; Can be laundered and reused repeatedly.
- Green Label-certified vacuums with HEPA filters: Improve indoor air quality by removing 99.9% of small air particles; Meet the performance standards of the Carpet and Rug Institute.
- Floor burnishing machines equipped with dust collection systems to keep dust from becoming airborne.

Sources of Soil

Soil is defined as any substance, solid or liquid, that is present in a place where it is not wanted. For example, bottled cooking oil is not a soil, but cooking oil residue on walls and floors caused by cooking is considered soil. Using this definition, a facility's main sources of soil are:

- **Tracked-in Soil.** Usually small and oily particles of silica (sand). The most important part of any green cleaning program starts with the purchase, use and proper maintenance of walk-off mats for all building entrances. Introducing walk-off mats at all entryways and following a maintenance program will greatly reduce the amount of

tracked-in soil entering the building.

- **Airborne Soil.** These are small particles of dust, droplets of oils, auto exhaust, pollen, and human dander. Air conditioning and heating systems carry airborne soil throughout a facility. Some airborne soils are so small that they can pass through vacuum cleaners and back into the air. Switching to an approved vacuum cleaner with a HEPA filter is one way to reduce the amount of airborne soil in a building.
- **Spills.** Spills on carpeting and hard surfaces are usually noticeable and are either a dry powder (photocopier toner, powdered cleaner, sugar, and non-dairy creamer) or liquid (ink, paint, coffee, and moist food). In most cases, custodians can clean these spills easily if they are reported in a timely matter. However, unreported spills are harder or impossible to clean and may become a stain. In addition, soils like urine and feces found around restroom urinals and toilets fall under this category.

Properties of Soil

By knowing the specific pH of a soil, custodians are better able to match the right cleaning product for the soil. The symbol pH represents the amount of hydrogen ions (H^+) in a solution and is measured on a scale of 0 to 14, with a pH of 7 defined as neutral. Pure water has a pH of 7. A pH less than 7 is called acidic, and a pH greater than 7 is called alkaline. The pH of most soils range between 3 and 9 so they are considered weak acids through weak alkaline. Examples of acidic soils are mixtures of organic matter, oils, and dust. Examples of alkaline soils are mixtures of organic matter with mineral deposits (scale), rust

Applying a detergent/cleaner having the opposite pH of the soil (acid cleaner with alkaline soils, and alkaline cleaner with acidic soils) will create a chemical reaction that helps loosen and remove soils from a surface. You can determine the pH of the cleaner by looking at its Material Safety Data Sheet (MSDS).

Considering there are only two types of soil, you may need only two types of cleaning solutions: an acidic cleaner, and an alkaline cleaner. This could reduce the number of different products in your cleaning chemical inventory. However, always check the manufacturer's recommendations for cleaners before applying the solution. For example, some manufacturers of terrazzo flooring require a detergent that falls within a specific pH level. Failure to follow instructions may void the manufacturer's warranty.

For soils mixed with oils and grease, make sure the cleaning product contains emulsifiers to help release them from the surface. Emulsifiers help oils and grease mix with the cleaning solution, making them easier to remove.

Note: Custodians use the acid/alkaline relationship to clean restrooms by applying acid cleaners to mineral deposits (alkaline soil) in sinks and toilets. If you are unsure of the soil type, use an alkaline cleaner first. If the soil is not removed, try an acidic cleaner. Make sure to rinse and dry the area between cleaning attempts.

Micro-organisms

A micro-organism is a living thing that is too small to be seen by the naked human eye. Micro-organism types familiar to most people are bacteria, fungi (such as mold), and viruses.

Microorganisms are found everywhere on Earth and are naturally present on and in the human body. While some micro-organisms can cause disease in humans, the vast majority of microorganisms are not harmful and some are actually beneficial.

A strong relationship exists between the presence of soil and micro-organisms because soil provides two key components for micro-organisms; a food source and a home. Micro-organisms need to be in direct contact with their food source (soil) to grow and multiply. Without moisture and soil to cling to, most micro-organisms cannot survive or multiply. Micro-organisms feeding on soil give off gases which may cause unpleasant odors in facilities.

By controlling moisture and properly cleaning surfaces, custodians can significantly reduce the number of micro-organisms and the odors they create. Properly cleaned surfaces require the use of an approved cleaning solution and good cleaning practices to leave behind no residue or odor.

Reducing Bacterial and Viral Infections

Most common infections, like colds, flu or simple skin irritations are spread by direct person-to-person contact, or close contact with microorganisms in droplets created by coughing or sneezing. Occasionally, a person may be infected by touching a contaminated surface and then touching their mouth, nose or open wound. Micro-organisms can live for a long period of time on surfaces and possibly contribute to the spread of infections within buildings. Proper hygiene can help control the spread of many common infections. For example, the Centers for Disease Control (CDC) recommend frequent and thorough hand washing to minimize the spread of the flu virus. Hands should be washed with soap and warm water for at least 20 seconds.

The Camacho Janitorial Approved Green Cleaning Products List provides a list of hand soaps for facilities to use that meet the Camacho Janitorial Green Cleaning Guidelines and Specifications. Use an alcohol-based hand sanitizer with at least 60% alcohol when soap and water aren't available. When using a hand sanitizer in place of soap and water, it is most important to thoroughly wipe your hands on a clean cloth or paper towel. Exercise caution and always supervise young children using alcohol-based sanitizers. Alcohol-based sanitizers shouldn't be substituted for soap and water hand washing, especially when hands are visibly soiled and after toileting. When coughing or sneezing, cover your mouth and nose with a tissue, or cough/sneeze into your upper arm.

For proper hand hygiene, hands should be washed before eating and drinking; after using the bathroom, touching high-hand-contact surfaces, returning to your office or home, blowing your nose, assisting an ill person, and handling chemicals; and between cleaning tasks. For custodians, hands can become contaminated from small holes in the gloves. Therefore, it is essential to wash hands or use hand sanitizer after removing protective gloves.

The MRSA Health Alerts and Advisories provide the following advice for preventing the spread of infection:

- Practice good hand hygiene and skin care.
- Keep cuts and wounds clean and covered with a bandage until healed.
- Avoid contact with other individuals' cuts, wounds and used bandages.
- Do not share personal items like towels or razors.

Refer to the NYSDOH Health Advisory for more background on MRSA symptoms, transmission and

treatment, and additional ways to prevent the spread of MRSA.

Disinfectants and Sanitizers

Camacho Janitorial uses several different cleaning products within the approved green cleaning products list of disinfectants and sanitizers. We use disinfectants and sanitizers because they are cleaning solutions with disinfecting and/or sanitizing features.

The health benefit of using sanitizers and disinfectants as part of routine cleaning is controversial.

Cleaning with soap or detergent and water removes a large number of micro-organisms contained in soils from surfaces (Sehulster et al., 2004). Furthermore, cleaning is a necessary first step to sanitizing or disinfecting because contact and reaction with soils may reduce or even eliminate the effectiveness of disinfectants.

Therefore, even if a surface is washed and disinfected properly, the disinfected condition is good only until the surface's next use. Then, the process must be repeated.

Custodians should always follow product directions when using disinfectants. Failure to follow directions may result in no benefit to the customer, can introduce chemicals into the environment, and waste product and labor. To be effective most disinfectants require the surface to first be cleaned and kept wet for 3-10 minutes of contact time with the disinfectant product.

Floors wet with disinfectant can create slip hazards; use "wet floor" signs. Once disinfected, floors and surfaces rapidly become re-contaminated by airborne micro-organisms, or from those found on shoes or other objects and substances. Studies in health-care settings have demonstrated that disinfecting floors provides no added benefit over cleaning with detergent and water (Sehulster et al., 2004). Routine disinfecting or sanitizing of floors and surfaces in facilities is not considered necessary. However, the use of disinfectants and sanitizers in certain areas (e.g. food service areas) and circumstances (e.g. disease outbreaks) may be required or recommended by health and other laws, regulations or guidelines.

Products making an antimicrobial claim must be registered with the United States Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act. For more information visit www.greenseal.org.

Reference: Sehulster LM, Chinn RYW, Arduino MJ, Carpenter J, Donlan R, Ashford D, Besser. R, Fields B, McNeil MM, Whitney C, Wong S, Juranek D, Cleveland J., Guidelines for Environmental Infection Control in Health-Care Facilities and Recommendations from CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC). Chicago, IL: American Society for Healthcare Engineering/ American Hospital Association, 2004

While disinfectants sometimes have a role in custodial tasks, there may be little benefit gained in situations where disinfectants are commonly used. Before applying disinfectants or sanitizers on surfaces, consider the following:

- While some studies may report that sanitizers and disinfectants can achieve 99.99% or 99.999% reduction in microorganism levels on surfaces, disinfectant and sanitizers used in real world situations do not have the same results. Their effectiveness depends on how well the process is performed and how much soil is present on the surface.
- Using a disinfectant to remove soil from anything but a hard, lightly soiled, and non-porous surface will result in a residual level of soil that may still harbor micro-organisms.
- The presence of organic soil on surfaces can cancel the effectiveness of disinfectants and sanitizers.

- Disinfectants and sanitizers are designed to kill or otherwise adversely affect living organisms. Therefore, disinfectants can also be harmful to people. When using disinfectants, custodians should always follow the proper safety precautions on the product labels.
- Using detergent or soap and water will effectively reduce the level of microorganisms by removing them with the soil. In most cases, simply washing the surfaces is adequate—disinfection may not be required.
- In certain areas (e.g. food service areas) and circumstances (e.g. disease outbreaks, blood spills) the use of disinfectants and sanitizers may be required or recommended by health and other laws, regulations or guidelines.
- Building occupants may be exposed to disinfectants and sanitizers by breathing in or accidentally ingesting them from recently treated surfaces.
- Ingesting disinfectants occurs when a person touches a surface with disinfectant on it and then handles food or touches their mouth.
- Disinfected surfaces can rapidly become re-contaminated with microorganisms once touched by hands, shoes or other objects and substances. Airborne microorganisms can also contribute to the recontamination of surfaces.
- Utilizing the proper cleaning method is an important strategy in minimizing soil and microorganism levels on surfaces. Dirty cleaning solutions and equipment such as mops and rags can spread dirt and microorganisms to new surfaces, thereby reducing their effectiveness.
- Rather than relying on disinfectants, focus on cleaning surfaces that are used or touched repeatedly on a daily basis. Items that are touched often include sink faucets, door handles, light switch plates, and dispensers.

Levels of clean

The status of “clean” is subjective: it can mean different things to each person. One person may define clean as being spotless while another person may define clean as being tidy. However, spotless is to tidy as an operating room is to an examination room. In any facility, there are several groups (stakeholders) with different ideas on what is and is not clean.

Custodial staff cannot satisfy everyone’s idea of cleanliness, which can lead to disappointment. To have a successful green cleaning program, every stakeholder, including custodial staff, should agree upon and expect the same “levels of clean”. If the custodial staff maintains the agreed upon levels, no one should be disappointed. There are several benefits in defining and agreeing to a building’s level of clean:

- Custodians can use the levels as a guide to ensure they meet and maintain the expected levels of clean.
- Custodial supervisors can use the facility’s defined levels of clean to inspect work and alter schedules to achieve the levels agreed upon.
- Custodial supervisors can estimate staffing requirements to achieve a certain level of clean. If there is not enough staff to maintain that level, then actions should be taken such as hiring additional staff, lowering the level of clean or obtaining cooperation from building occupants to keep the facility clean.

In order to agree on the levels of clean, stakeholders need to first define the levels of clean. In the APPA publication *Custodial Staffing Guidelines for Educational Facilities (CSGEF)*, Second Edition, five custodial service levels are defined and used to determine staffing requirements needed to clean at each of the five service levels.

CSGEF relates each service level to the number of square feet a full-time custodian can clean in a single shift. Facilities should consider using the same custodial service levels to define their building's levels of clean because they are commonly used in the cleaning industry, and have useful staffing data available. The five custodial service levels, also referred to as levels of clean in this training course, are:

Level 1 Spotlessness; Level 2 Tidiness; Level 3 Inattention; Level 4 Dinginess; Level 5 Neglect.

For most facilities, custodians should strive to maintain level 1. However, the level of clean should coincide with the type of room. For example, a patient room in a hospital would have a higher level of clean than a school classroom.

Custodians should be familiar with the four key items used in defining these levels, and know the level of clean for each one. The four key items are:

- Floors, corners and base molding;
- Vertical and horizontal surfaces—counters and ledges;
- Washroom and shower fixtures, tile, light fixtures; and
- Trash containers and pencil sharpeners.

By knowing the level of clean requirements, custodians are better able to focus on meeting the requirements by adjusting their work activities. For example, custodians can incorporate wiping down and inspecting base molding after floor care and maintenance tasks that cause solutions splattering.

Below are detailed descriptions of each of these levels.

Level 1 – Spotlessness

- Floors and base moldings shine, and are bright and clean, and colors are fresh. There is no soil buildup in corners or along walls.
- All vertical and horizontal surfaces have a freshly cleaned or polished appearance with no accumulation of dust, dirt, marks, streaks, smudges, or fingerprints. Lights all work and fixtures are clean.
- Washroom and shower fixtures and tile gleam and odor free. Supplies adequate.
- Trash containers and pencil sharpeners; only daily waste, clean and odor free.

Level 2 – Tidiness

- Floors and base moldings shine and are clean. There is no buildup of soil in corners or along walls, but there can be up to two days worth of dust, dirt, stains or streaks.
- Vertical and horizontal surfaces are clean; marks, dust, smudges, and fingerprints are noticeable upon close observation. Lights all work and fixtures are clean.
- Washroom, shower fixtures, and tile gleam and are odor free. Supplies adequate.
- Trash containers and pencil sharpeners; only daily waste, clean and odor free.

Level 3 – Inattention

- Floors are swept or vacuumed clean, but upon close observation, there can be stains. A buildup of dirt and floor finish in corners and along walls can be seen.

- There are dull spots or matted carpet in the walking lanes. There are streaks or splashes on base molding.
- All vertical and horizontal surfaces have obvious dust, dirt, marks, smudges, and fingerprints. Lamps all work and fixtures are clean.
- Trash containers and pencil sharpeners hold only daily waste, are clean and odor free.

Level 4 – Dinginess

- Floors are swept or vacuumed clean, but are dull, dingy, and stained. A noticeable buildup of dirt or floor finish in corners and along walls can be seen.
- There is a dull path or obvious matted carpet in the walking lanes. Base molding is dull and dingy with streaks or splashes.
- All vertical and horizontal surfaces have conspicuous dust, dirt, smudges, fingerprints, and marks. Lamp fixtures are dirty and some bulb lamps (up to five percent) are burned out.
- Trash containers and pencil sharpeners have old trash and shavings. They are stained and marked. Trash containers smell sour.

Level 5 – Neglect

- Floor and carpets are dull, dirt, dingy, scuffed and/or matted. There is a conspicuous buildup of old dirt and/or floor finish in corners and along walls. Base moldings are dirty, stained, and streaked. Gum, stains, dirt, dust balls, and trash are broadcast.
- All vertical and horizontal surfaces have major accumulations of dust, dirt, smudges, and fingerprints, all of which will be difficult to remove. Lack of attention is obvious.
- Light fixtures are dirty with dust balls and flies. Many lamps (more than 5 percent) are burned out.
- Trash containers and pencil sharpeners overflow. They are stained and marked. Trash containers smell sour.

Building entries

Poorly equipped and maintained entryways allow soil to easily enter a building and spread around. By placing and properly maintaining adequately sized walk-off mats at each entryway, custodians can reduce and control the amount of soil entering a building by more than 80 percent. The Carpet and Rug Institute recommends all main entryways have at least 12 to 15 feet of walk-off matting. If practical a three-part, walk-off matting system for main entryways as well as for entryways accessible from playing fields and locker rooms should be used.

This includes an exterior grill or grates, drop-through mats between the sets of double doors or vestibule area, and 15 feet of interior walk-off matting. The interior walk-off matting should be wide enough to

prevent people from walking off the mat prior to reaching the end.

Entryway walk-off matting maintenance plays an important part in a green cleaning program by keeping soil out of the building. In order to guarantee an effective walk-off system, create and implement an entryway maintenance program. An entryway maintenance program should document:

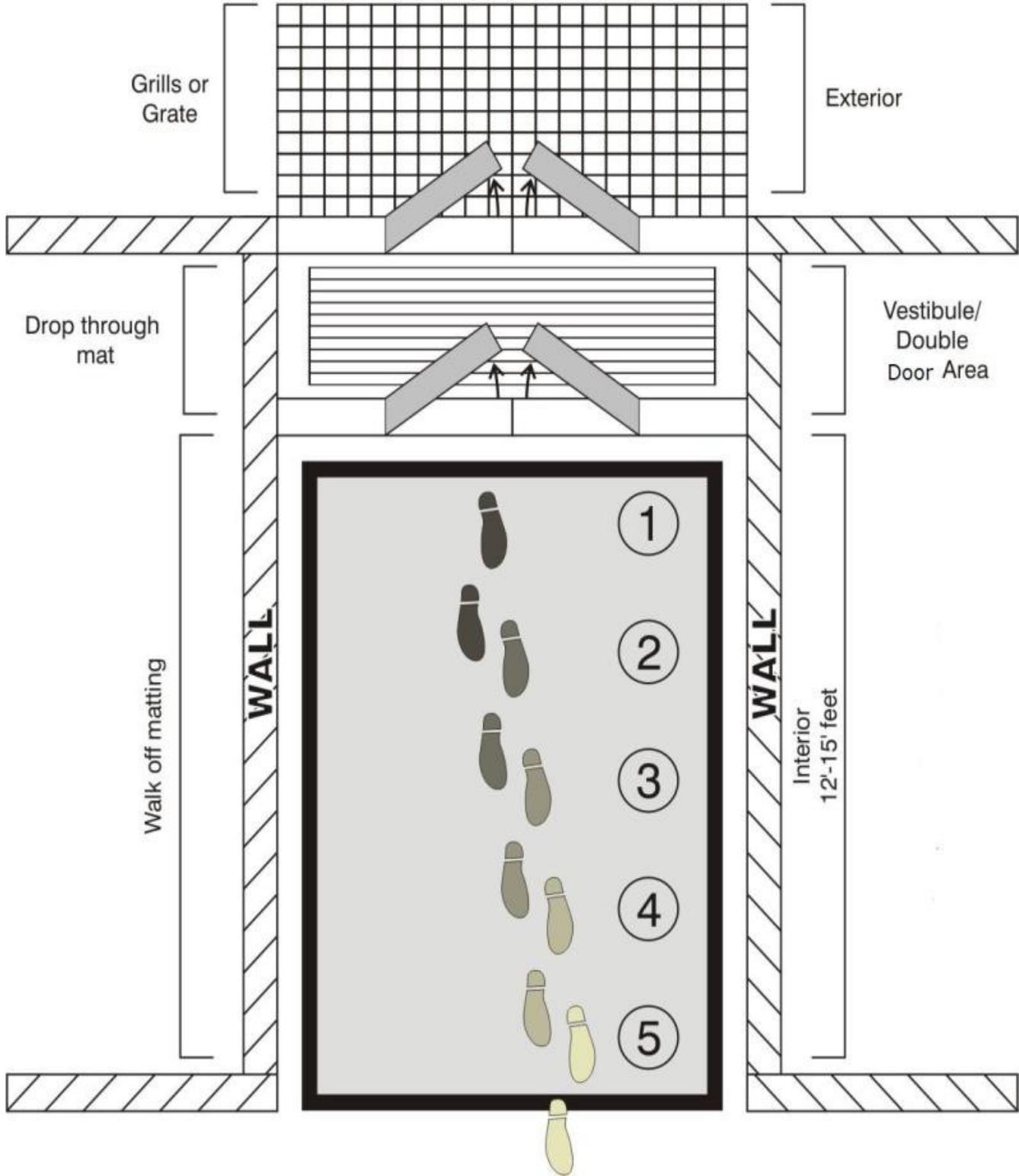
- The frequency of rotating or vacuuming walk-off mats (frequency will change based on weather conditions);
- Policing of entryways to ensure matting is not overloaded with soil or moisture during periods of heavy traffic;
- The maintenance and cleaning frequency of exterior walkways and parking lots leading to entryways; and
- The removal of problem vegetation and its replacement with vegetation that does not produce berries, flowers or leaves.

Custodial efforts in implementing and maintaining walk-off mats have many benefits:

- Improves indoor air quality;
- Reduces pollutants from entering the building;
- Reduces the cost of floor maintenance;
- Extends the life of hard flooring ;
- Increases safety by preventing accidents on hard surface entryways; and
- Reduces cleaning efforts required inside the building.

The following is a sample diagram for an effective walk off mat emplacement program:

Three Part Walk-Off System



Worker safety

- Be aware of chemicals you use and that are in your work place.
- Make sure all containers are properly labeled and tightly secured.
- Never mix chemicals.
- Know how to read and understand Material Safety Data Sheets (MSDS).
- Read the MSDS of every product you use.
- Read and understand your facility's written Hazard Communication Plan.
- Always wear appropriate personnel protective equipment (PPE) for handling chemicals.
- Use an automated chemical dispenser/dilution system whenever possible to create accurate dilutions and reduce chemical contact.
- Never operate equipment you have not been trained to use.
- Follow the manufacturer's recommendation for operation and use of chemicals and equipment.
- Maintain equipment in good working order.

Cold or hot water

Facilities should consider using cold water-formulated cleaning detergents whenever possible. Cold water-formulated cleaning detergents are designed to work effectively in both cold and hot water. Also, all Green Seal-certified general-purpose cleaners are cold water-formulated. There are several benefits to using cold water instead of hot water:

- Hot water melts and spreads oils, fats, and petroleum products that do not dissolve in water and result in left behind residue that speeds up the collection of new soil;
- Hot water requires the use of a heat source, which wastes energy resources;
- Hot water can cause burns;
- Cold water-formulated cleaners are as effective as hot water cleaners; and
- Hot water cools quickly after contact with surfaces causing the melted soil to reattach to the cold surface.

Cleaning methods and practices

Below are lists of routine cleaning methods and practices used by custodians to maintain the appearance of a building. The actual step-by-step cleaning procedures are described in Camacho Janitorial work instructions (Restroom Cleaning, Floor Care and Maintenance, and Carpet Care and Maintenance).

Dusting

- Dry-dust surfaces before cleaning with liquids.
- Use microfiber dusters or cloths to remove dust buildup. Microfiber products create an electrostatic force that attracts and holds dust particles better than other cloths.
- Dust from higher levels to lower levels to prevent airborne dust from falling on already cleaned surfaces.

Wiping

- Use the "Spray and Wipe" method (spray cleaning solution on the soiled surface and then wipe clean.) for cleaning visible soils found on mirrors, toilets, and urinals.

- Use the “Damp Wipe” method (dampen the cloth with cleaning solution and then wipe it clean) for surfaces requiring more controlled application of cleaner such as paper towel dispensers and stainless steel appliances.

Dust-Mopping

- Although microfiber dust-mopping is an acceptable method to remove dry and loose soils, vacuuming the area with a Green Label-certified vacuum cleaner or a Seal of Approval/Green Label-certified vacuum cleaner would reduce airborne particulates better.
- Remove the vacuum cleaner bag or dump the vacuum canister outside the building to reduce the release of dust back inside. The CRI Seal of Approval/Green Label Testing Program is the standard testing protocol.
- Dust-mop using a microfiber dust mop or Green Label-certified vacuum trap soil and reduce airborne particles.
- Dust-mopping removes surface dirt in preparation for wet/damp-mopping or auto-scrubbing.
- Always use the appropriate-sized microfiber mop head for the space being cleaned.
- Replace the microfiber dust mop with a clean microfiber pad when it becomes too dirty and can no longer pick up soil.
- Clean dust mop heads outside and away from open windows and doors. Cleaning dust mops inside will release dust back into the air.

Wet/Damp-Mopping

- Always dust-mop an area prior to wet/damp-mopping to gather/remove soil and debris.
- Microfiber mops clean effectively, last longer, and reduce the amount of cleaning solution needed to perform the task.
- While wet/damp mopping work away from the furthest point of the room toward the exit.
- Clean along baseboards first to reduce splatter, and then mop the rest of the floor.
- Never place dirty microfiber mop heads back in the cleaning solution - replace with a clean mop head.
- For traditional mopping using loop-type mop heads, replace the cleaning solution with clean solution when the mop head becomes dirty.

Auto-Scrubbing

- Use an auto-scrubber to clean large floor areas quickly and effectively.
- Select the right brushes or pads for the cleaning job.
- Wet/damp-mop tight areas that the auto scrubber cannot reach, and then use a handheld squeegee to pull the water into the path of the auto scrubber.
- Make sure the equipment is in good working order and leaves no streaks.

Vacuuming

- Vacuuming is the most important and cost-efficient part of carpet maintenance.
- Vacuums should be properly maintained.
- HEPA filters and vacuum bags should be replaced according to the manufacturer's recommendations. To maintain suction performance, custodians should replace vacuum bags when they become 2/3 full.
- High traffic areas require thorough vacuuming to raise the carpet nap and remove dirt. Give the suction action of the vacuum enough time to remove the dirt.
- Use upright or backpack vacuums for effective carpet cleaning.
- Make sure backpack vacuums are properly adjusted before use to protect against injury.

Frequency of cleaning and maintenance

The frequency of cleaning tasks is location specific, therefore, these frequencies should be used as a guideline.

Frequencies of cleaning tasks are facility specific and vary depending on the quality of routine maintenance and the amount of activity in the building. Cleaning and maintenance frequencies can be broken down into three categories: routine, interim and restorative.

Routine maintenance is critical to maintaining the building's appearance and lengthens the time between more costly and labor-intensive maintenance tasks like stripping and refinishing floors.

Interim maintenance keeps high traffic floors and carpeting at an acceptable appearance level. It is more labor-intensive than routine maintenance.

Restorative maintenance is the most labor intensive and involves tasks like deep cleaning carpets and stripping and refinishing hard floors. Listed below are typical care and maintenance tasks:

Routine

- Tasks performed Daily or often during a week:
 - Dust and wet-mop or auto-scrub floor at least once daily.
 - Vacuum entries and high traffic areas at least once daily.
 - Vacuum medium and low traffic areas once weekly.
 - Trash removal at minimum once daily.
 - Restroom cleaning at least once daily.
- Tasks performed Monthly or Quarterly as needed:
 - Clean HVAC vents.
 - Spot clean walls ;
 - Spot clean carpets;
 - Clean windows;
 - Clean horizontal surfaces.
 - Clean light fixtures.
 - Clean furniture.

Interim

- Tasks performed as needed based on appearance and condition:
 - Floor burnishing and refinishing.
 - Bonnet carpet cleaning.
 - Extraction carpet cleaning in high traffic areas.

Restorative

- Labor-intensive tasks performed bi-annual or annually:
 - Carpeted area deep cleaning by extraction.
 - Hard floor finish removal and refinishing.

Review

This training covered the following:

- Descriptions of sources of soil found in buildings.
- Description of soil property and how it can be used to select cleaners.
- Descriptions of micro-organisms and their relationship to soil.
- A discussion on ways to reduce micro-organisms and resultant illnesses.
- A discussion of disinfectants and their use.
- Descriptions and examples of green cleaning products and equipment.
- Benefit of establishing levels of clean for buildings.
- The importance of entry matting systems to reduce soil entering the building.
- Cleaning products on the approved green cleaning products list.
- A list of safety practices custodians should follow.