

Green Clean Schools: Sustainable Floor Care



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Green Cleaning, Defined:

- Using cleaning methods with environmentally-friendly ingredients and chemicals to preserve human health and environmental quality. Green cleaning techniques and products avoid the use of chemically-reactive and toxic cleaning products.

Green Cleaning

1. Collaborate- TQM teams/Training/Cross-training
2. Innovate- Identify products and conduct pilot programs
3. Evaluate- Determine results from pilot programs before implementing district-wide
4.*this approach works for floors, the largest area we maintain!*—



Practical Reasons Why You Should Care About Floor Care:

- Chemical Avoidance
- Lowers operating costs/cost savings
- Achieves product operational efficiency
- Increases employee productivity/safety

How Do We Start?

- Evaluate type of flooring- Terrazzo, Vinyl, etc.- current systems can, and often should, be changed
- What do you use now?

How Do We Start?

What DO I Need to Know?

...Here are some suggestions

- Does Terrazzo need wax? NO
- What is in traditional wax and stripper? Harmful chemicals, which are often known carcinogens
- How do I know what is in the products my staff uses? Check the Safety Data Sheets (SDS) and look up the SDS on ingredients as well.

Procedures and Strategies

- Diamond Pads polish the stone and eliminate chemicals
- Ionized water spray cleaner/auto-scrubbers– chemical free
- Steam cleaners –kill a wide range of bacteria and germs for use in bathrooms and are chemical-free
- Bio-based cleaning supplies
- Microfiber mops – replace chemically treated dust mops



What Do I Need to Know? What About Health Impact?

...Here are some suggestions

- What health problems can develop from exposure to chemicals? Immediate and long-term low-level impact
- What is long-term low-level impact? Some health problems take time to develop, and are caused by low-level exposure over time, this is how we refer to these problems.

Strategies For Chemicals Used:

- Green-certified floor waxes which eliminate the use of styrene and reduce labor (requires change in process)
- Try Low-VOC products for gym floor finishing

What is Styrene?



United States Environmental Protection Agency

Hazard Summary-Created in April 1992; Revised in January 2000

Styrene is primarily used in the production of polystyrene plastics and resins. Acute (short-term) exposure to styrene in humans results in mucous membrane and eye irritation, and gastrointestinal effects. Chronic (long-term) exposure to styrene in humans results in effects on the central nervous system (CNS), such as headache, fatigue, weakness, and depression, CSN dysfunction, hearing loss, and peripheral neuropathy.

How Can We Find Out If Styrene is in the Wax We use?

...Look at Safety Data Sheets

According to the CDC look for these names on Safety Data Sheets:

Synonyms & Trade Names

- Ethenyl benzene, Phenylethylene, Styrene monomer, Styrol, Vinyl benzene
- *(found under Hazardous Ingredients)*

Change in Practice

- Elimination of STYRENE allows the elimination of STRIPPER
- Mechanical means become effective/more effective in removal of wax

.....why is that important?

Floor Stripper Facts:

Actual Safety Data Sheets

ACCIDENTAL RELEASE MEASURES

- **Personal precautions:** Put on appropriate personal protective equipment (see Section 8.).
- **Environmental precautions and clean-up methods:** Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Use a water rinse for final clean-up.

HANDLING AND STORAGE

- **Handling:**
 - Avoid contact with skin, eyes and clothing. Do not taste or swallow. Avoid breathing vapors or mists. Wash thoroughly after handling. Remove and wash contaminated clothing and footwear before re-use. Product residue may remain on/in empty containers. All precautions for handling the product must be used in handling the empty container and residue. Use only with adequate ventilation. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.

Conclusion: The Facts

- Chemicals can be reduced and often be eliminated
- Change in products, coordinated with change in process, can reduce labor
- Indoor Air Quality/Indoor Environmental Quality ***can be improved***
- These changes are the current practice in East Meadow, this is not a theory or plan

Conclusion:

Cost Savings Summary

Process & Supply Savings Per Initiative on a Yearly Basis			
Product	Use	Percentage Savings	Savings Per Year
*Stripper	Eliminated by new system- had been used to remove wax. Stripper is a very harsh chemical.	100.00%	\$14,526.00
*Wax	Substantially reduced by new system. We currently use no chemicals (wax or stripper) on terrazzo hallways and green wax (no stripper) on all tile areas.	49.21%	\$6,042.52
*Baseboard Cleaner	Eliminated by new system- had been used for baseboards. This was a very harsh chemical, which should be avoided.	100.00%	\$6,429.41
*Polyurethane	Used to coat Gym/ wood floors- changed process and product (oil to water based). New dispensing system drastically reduced product consumption and labor to apply.	28.93%	\$488.16
*Buffing products	Eliminated by new system- used to shine a wax floor. Buffing is labor intensive and decreases IAQ due to the creation of dust.	100.00%	\$5,478.88

** Based on a 1,340,020 square foot of occupied space*