

Basic Floor Care

Floor Care for Stone, Masonry and Ceramic



www.ieha.org



www.cminstitute.net



Wm R. Griffin, President
Cleaning Consultant Services, Inc.
www.cleaningconsultants.com



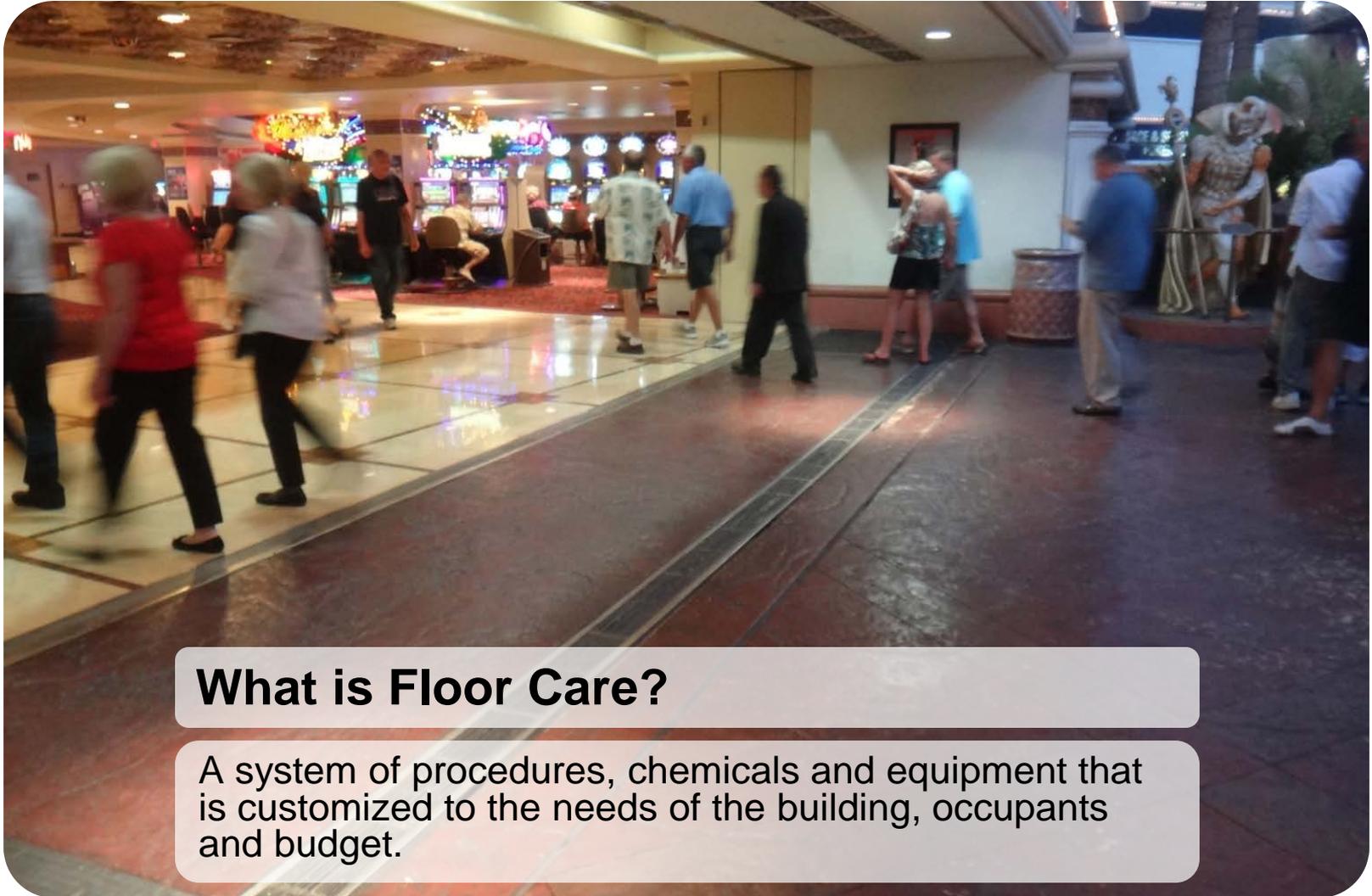
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Understanding the Basic Principles of Floor Care

FLOOR CARE OVERVIEW



What is Floor Care?

A system of procedures, chemicals and equipment that is customized to the needs of the building, occupants and budget.

Why Do We Maintain Floors?

- Health & Sanitation
- Safety
- Appearance
- Prolong useful life
- Pride and satisfaction



When Do We Maintain Floors?



- Service Frequencies
- Based on Needs
 - Occupants
 - Facility
- Scheduled Floor Care
 - Acceptable Levels
 - Extend Restoration

Floor Care Costs

- General Floor Care
15% - 18% of
Cleaning Budget
- Commercial
15% - 20% of
Cleaning Budget
- Retail & Box Stores
70% - 80% of
Cleaning Budget



The Damaging Effects of Soil



- 40%-50% of all soil found on the floor is abrasive.
- Soil equivalent to 400 grit sandpaper.
- Polished stone floors can be dulled by heavy foot traffic.

Five Steps to Soil Removal

- Identify the Soil
- Pick Up Soil
- Package Soil
- Dispose of Soil
- Inspect the Area



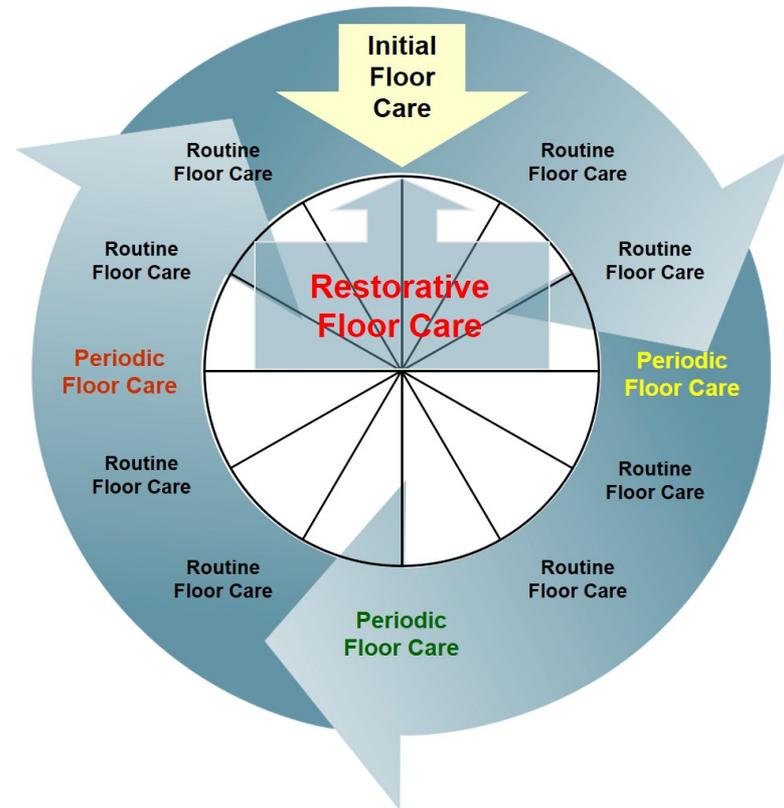


Getting Organized

To prevent wasted time use a written checklist to prepare equipment and when returning it to your vehicle or storage.

Hard Floor Care Cycle

- Initial (New)
- Routine or Daily
- Periodic
- Restorative/Salvage
- Replace



Cleaning Truisms



- Soiled Supplies = Soiled Surface
- Remove Soil Accumulation
- Procedures and Frequencies
- Begin with Least Aggressive
- Attitude is Everything
- Keep it Clean

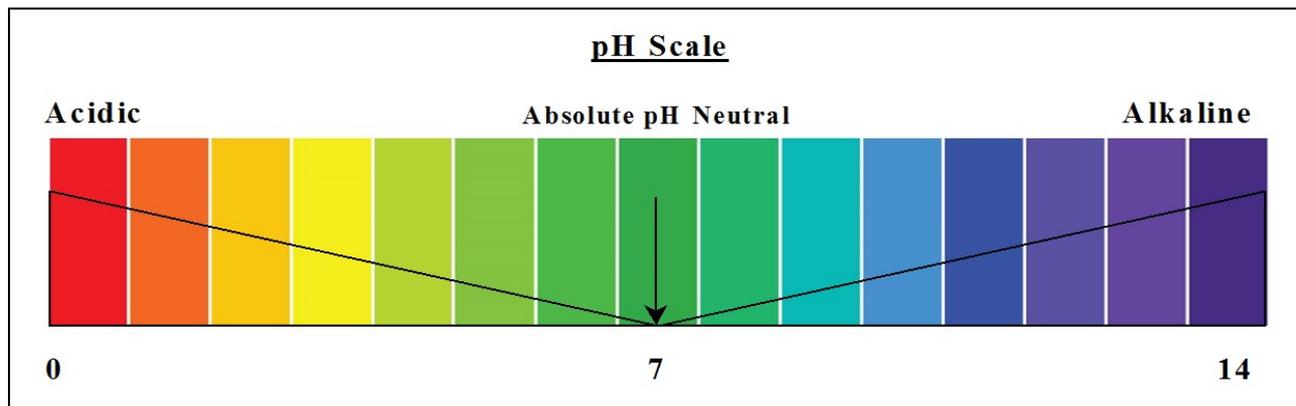
Definitions

Soiled – The presence of unwanted soil, contamination or impurities.

Clean – The absence of unwanted soil, contamination or impurities.

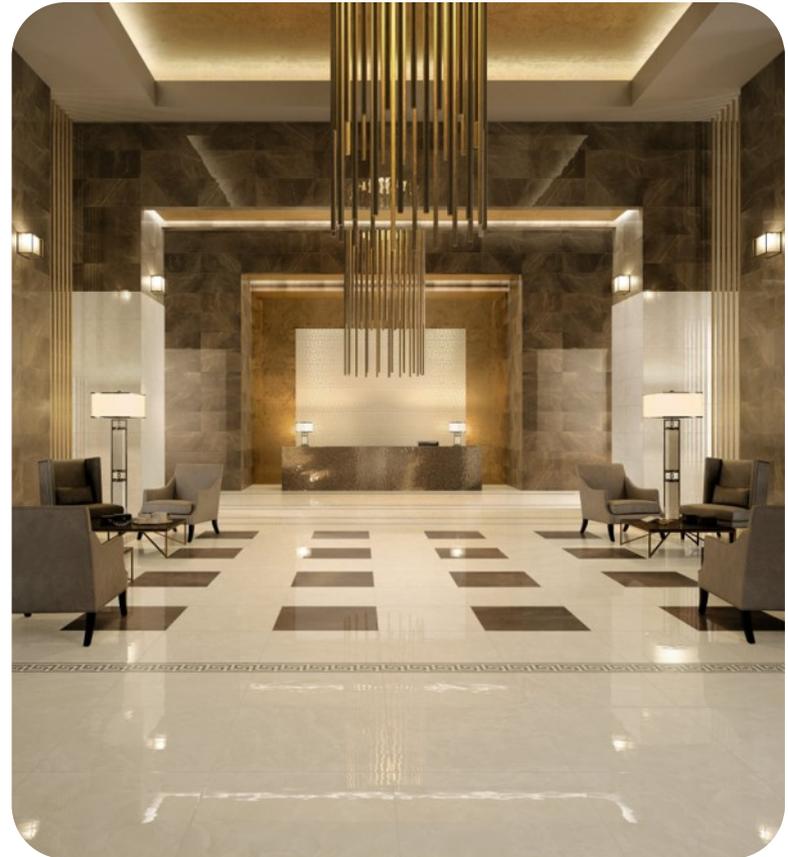
Cleaning – The process of removing unwanted soil, contamination or impurities from a surface, area or building.

pH scale: measures the acidity or alkalinity of a water-based solution. Ranges from 0 (acidic) -14 (alkaline), 7 is neutral so 2 would be an acid.



Successful Floor Program

- Define Objectives
 - Create the Parameters
- Prevention
 - The Key to Effective Cleaning
- Finish the Job
 - Inspect Don't Expect



Understanding Stone and Masonry Floor Care

STONE AND MASONRY

Trends Impacting an Industry

- Increased Sales of Stone and Ceramic
- Commercial and Residential
- Importers
 - Brazil
 - Spain
 - China





Mohs Hardness Scale

	Mineral Name	Scale Number	Common Object
↑ Increasing Hardness	Diamond	10	
	Corundum	9	←  Masonry Drill Bit (8.5)
	Topaz	8	
	Quartz	7	←  Steel Nail (6.5)
	Orthoclase	6	←
	Apatite	5	←  Knife/Glass Plate (5.5)
	Fluorite	4	←  Copper Penny (3.5)
	Calcite	3	←
	Gypsum	2	←  Fingernail (2.5)
	Talc	1	

Stone Identification

- Visual
- Ask Owner/Manager
- Chemical
- Ask Contractor/Installer
- Scratch
- Bring an Expert

Maintaining Stone Floors



- More Costly
 - Purchase, Install and Maintain
- Easily Damaged
 - Due to Incorrect Chemical Usage
- Information
 - Training/Educating
- Some Different Methodologies

Evaluating Current Conditions

- Properly Identify
- Coating or Polish
- Previous Maintenance Method
- Is Restoration Required
- Damage or Repair
- Grouted



Types of Stone

Stone Geological Classification			
Definitions	Sedimentary	Metamorphic	Igneous
Simple definitions for Stone classification.	Stones formed through the deposition and solidification of sediment	Stones changed by extreme heat and pressure.	Stones formed through the cooling and solidification of magma or lava.
<u>Calcareous:</u> Stones composed mainly of calcium carbonate.	Limestone Travertine Onyx	Marble Serpentine	
<u>Siliceous:</u> Stones composed primarily of silicates.	Sandstone	Slate Quartzite Soapstone	Granite

Stone Identification



Granite

- Igneous Rock
- Daily/Routine
 - Dust Mopping and Wet Mopping
- Periodic
 - Scrubbing
 - Powder Polish
- Restorative
 - Grinding, honing and diamond polishing

Stone Identification

Marble

- Metamorphic Rock
 - Chemical Sensitive
- Daily/Routine
 - Dust Mop or Vacuum
 - Spot and Wet Mopping
- Periodic
 - Crystallization
 - Powder Polish
- Restorative
 - Diamond Grinding,
Honing and Polishing



Stone Identification



Limestone

- Sedimentary Rock
 - Chemical Sensitive
- Daily/Routine
 - Dust Mop or Vacuum
 - Spot and Wet Mopping
- Periodic
 - Crystallization
 - Powder Polish
- Restorative
 - Diamond Grinding, Honing and Polishing

Stone Identification

Sandstone

- Sedimentary Rock
- Daily/Routine
 - Dust Mop or Vacuum
 - Spot and Wet Mopping
- Periodic
 - Scrub with Neutral Cleaner
- Restorative
 - Scrub with Neutral Cleaner
 - Penetrating Sealer



Stone Identification



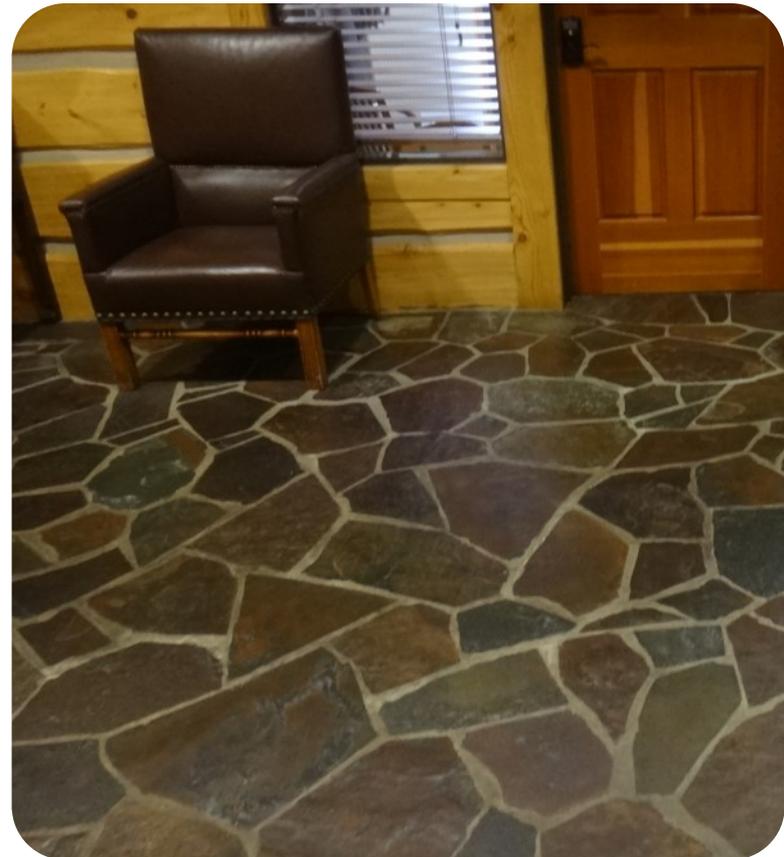
Slate

- Sedimentary Rock
 - Cleft Irregular Surface
- Daily/Routine
 - Dust Mop or Vacuum
 - Spot and Wet Mopping
- Periodic
 - Scrub with Neutral Cleaner
- Restorative
 - Scrubbing with application of penetrating sealer

Stone Identification

Flagstone

- Sedimentary Rock
- Daily/Routine
 - Dust Mop or Vacuum
 - Spot and Wet Mopping
- Periodic
 - Scrub with Neutral Cleaner
- Restorative
 - Strip and Refinish
 - Penetrating or Topical Sealer



Stone Identification

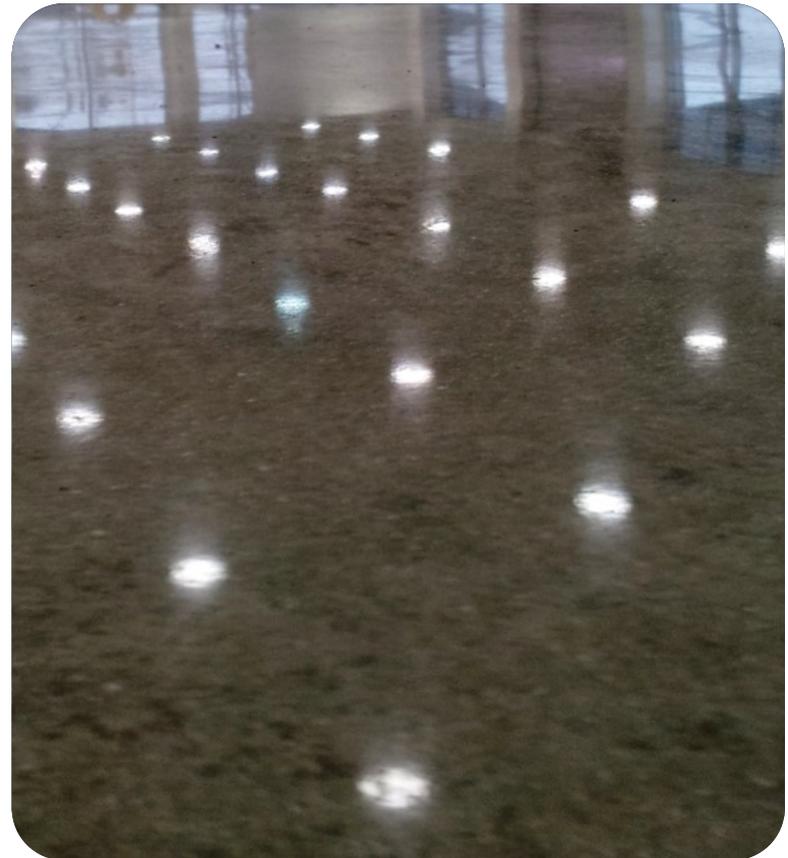


Terrazzo

- Engineered
 - 70% Marble or Granite
 - 30% Cementitious or Resinous Binder
- Daily/Routine
 - Dust Mop or Vacuum
 - Spot and Wet Mopping
- Periodic
 - Scrub with Neutral Cleaner
 - Synthetic Diamond Pads
 - Crystalize/Powder Polish
- Restorative
 - Strip and Refinish
 - Penetrating or Topical Sealer
 - Grind. Hone or Polish

Stone Identification

- Concrete
- Traditional
 - Apply Coatings
 - Apply Seal and Finish
- Decorative Concrete
 - Pigmented
 - Stained/Stenciled
- Polished
 - Densified/Hardened
 - Diamond Abrasives



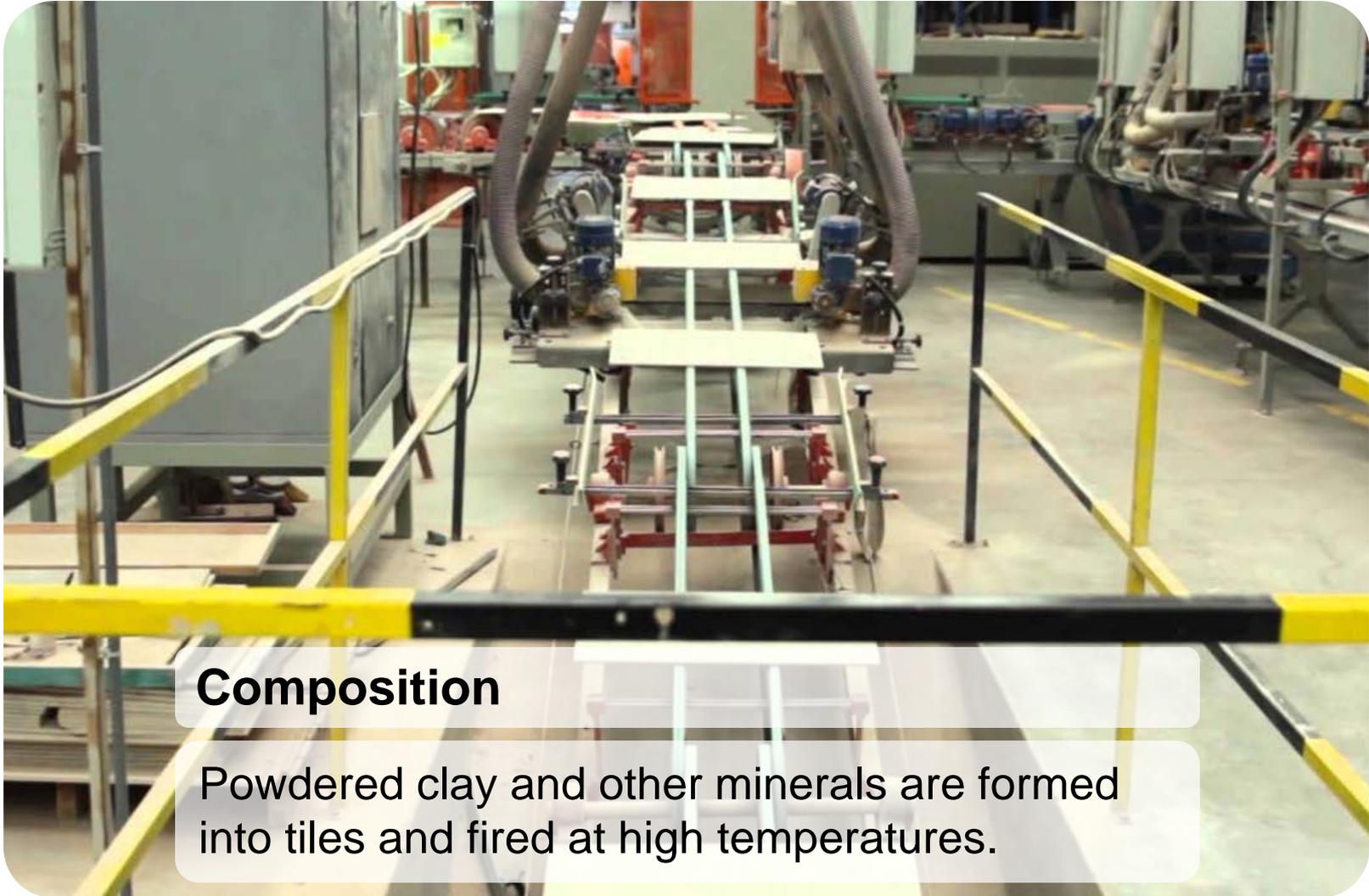
Floor Care for Ceramic and Porcelain (Clay) Tile

CERAMIC FLOORING



Ancient Ceramic

Ceramic floors are found in most ancient civilizations throughout the world.

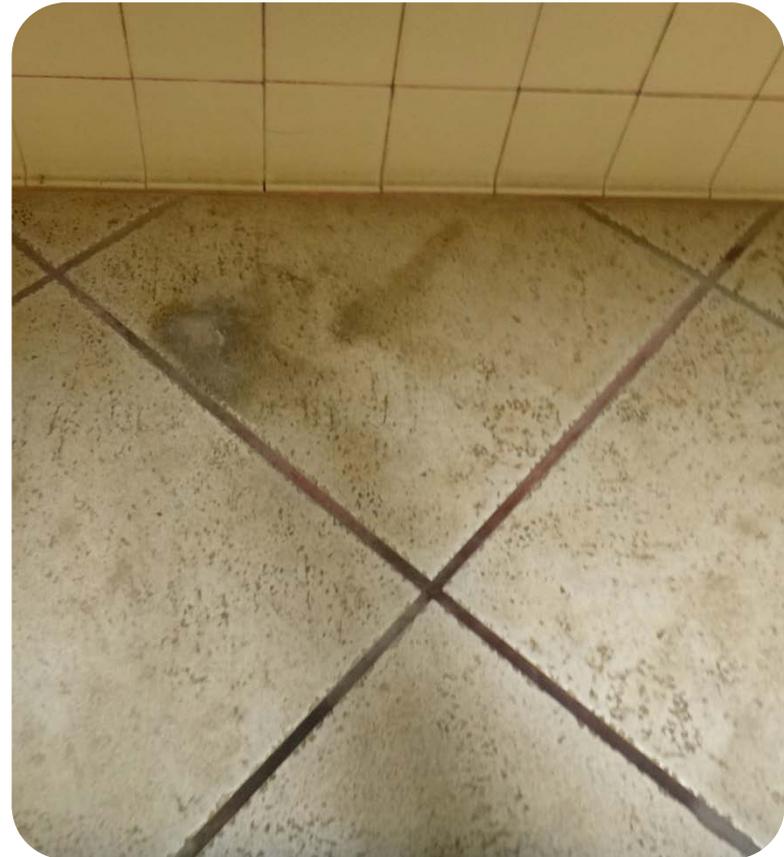


Composition

Powdered clay and other minerals are formed into tiles and fired at high temperatures.

Ceramic Tile Grout

- Classifications
 - Portland Cement
 - Epoxy
 - Furan Resin
- Cementitious
 - Sanded
 - non-sanded
 - Natural Stone



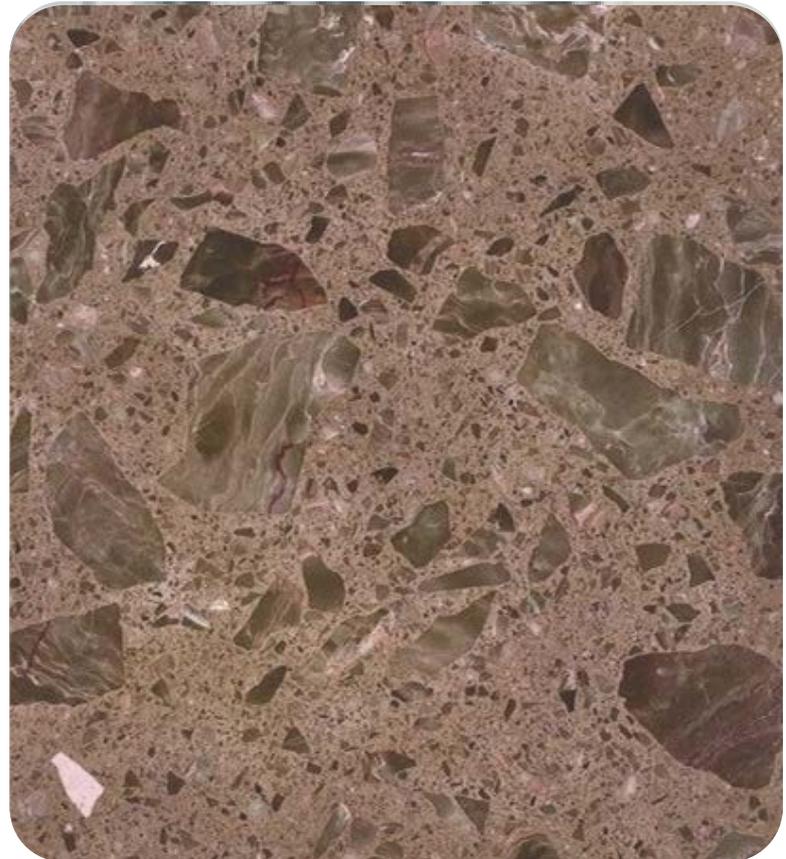
Ceramic/Clay Classifications



- Ceramic
- Vitreous
- Porcelain
- Quarry
- Brick and Cantera
- Terra Cotta
 - Mexican Tile
 - Saltillo Tile

Additional Tiles

- Concrete Pavers
- Terrazzo Tile
- Agglomerated Tile



Ceramic Floor Care Cycle

Initial Floor Care:

Deep Cleaning of newly installed tile.

Daily/Routine Floor Care:

Dust mopping and damp or wet mopping.

Periodic Floor Care:

Normally a heavy-duty scrub operation.

Restorative Floor Care:

Strip and Refinish
High alkaline and/or acid treatment.



Residential and Commercial



- Residential
 - Smaller Areas
 - Peoples Homes
- Commercial
 - Larger Areas
 - Places of Business
 - Requires Commercial Equipment

Residential/Commercial Process

1. Meet and Greet the Customer
 - Present Literature and Business Card
2. Inspect Area
 - Determine Condition
 - Potential Problems
 - Measure Area
3. Pretest
4. Prepare Work Order



Process Preparations



5. Prepare Work Area
 - Move Items
 - Set Safety Perimeter
 - Position Step Off Mats
 - Protect Items
6. Organize Chemicals and Equipment
 - Take Only What is Needed
 - Container for Tools and Materials

The Process

7. Begin the Process
 - a. Dust Mop or Vacuum Dry Soil
 - b. Mix and Apply Cleaning Solution
 - c. Allow Ample Dwell Time
 - d. Thoroughly Agitate
 - e. Remove Cleaning Solution Slurry
 - f. Detail Edges, Corners and Base Boards
 - g. Thoroughly Rinse Floor
 - h. Use Fans or Air Movers to Dry Floor
8. Clean and Store Equipment

Apply Sealer if Desired

9. Apply Sealer
 - a. Allow to dry 80%
 - b. Remove Excess
10. Apply Fans to Expedite Drying
11. Replace Items
 - a. Removed for Cleaning
 - b. To Proper Location



Customer Service Survey



- Discuss the Cleaning
- Thank the Customer
- Ask for Referrals
- Record Job Time
- Check Around Vehicle Before Departing

Commercial Adjustment

- Protect brass or metal floor drains.
- Mix cleaning chemicals according to manufacturers recommended dilution ratios.
- Work as a Team
- Tech 1; apply solution, Tech 2; Agitate cleaning solution.
- Tech 1; Scrape and extract solution and detail.
- Tech 1 & 2; Rinse floor (1st & 2nd rinse) and final detail.



Heavy Duty Scrub or Strip

1. Stage chemicals and equipment on plastic or on mats.
2. Protect fixtures, baseboards and walls, doors, etc.
3. Follow safety precaution and apply stripping solution.
4. Allow adequate dwell time.
5. Use appropriate floor machine, pads and/or brushes.
6. Remove contaminated stripping solution with wet vacuum, detail and thoroughly rinse floor twice.
7. Deep clean grout lines with cylindrical brush machine.

Solvent Chemical Cleaning

- Highly Flammable
- Paint Removers
 - Permanent Coatings
 - Dangerous Operation
- Safety (PPE)
 - Respirator
 - Ventilation
 - Eye And Skin Protection.



Chemical Cleaning



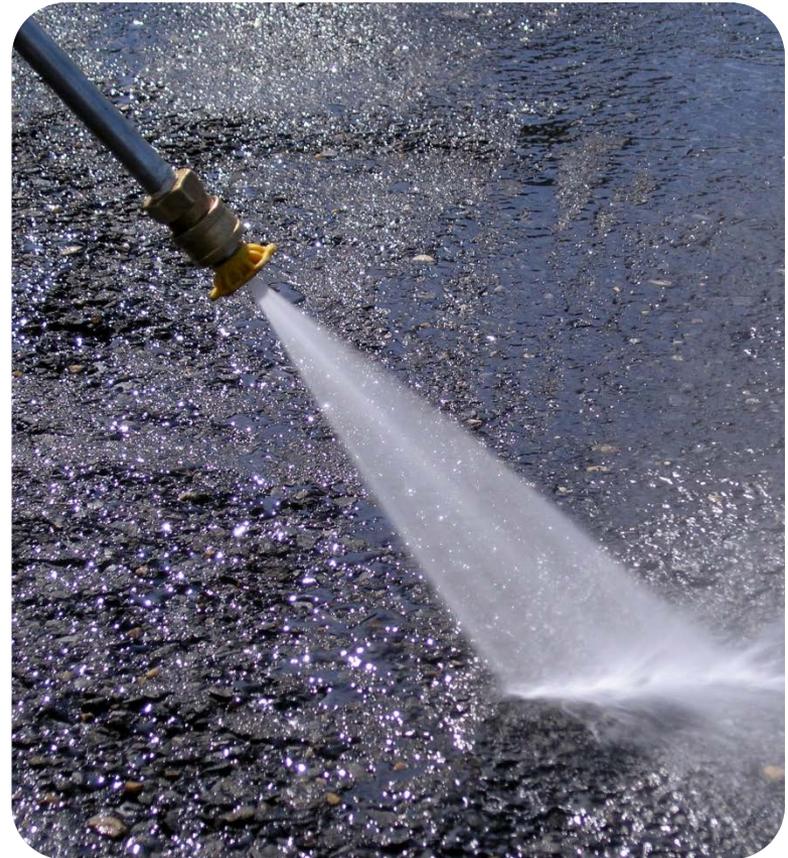
- Step 1
 - High pH Alkaline Cleaning
 - Finish, Grease and Soil
 - Apply And Dwell
 - Agitate With Machine
- Step 2
 - Low pH Acid Cleaning
 - For Deep Grout Cleaning
 - Apply And Dwell
 - Brush Agitate Grout
- Neutralize acid based chemicals to prevent degradation of grout.

Neutralize Acid Treatment

- Prepare Acid Neutralizer
- Apply Solution
 - Allow to Dwell
 - Do Not Agitate
- Thoroughly Rinse
 - Use Clean Water
 - Rinse Twice
- Dry 24 Hours Before Applying Sealer

Additional Methods

- Abrasive Cleaning
 - Rubberized Grout Cleaning Block
 - Do not use pumice stone, sand paper, coarse abrasives.
- Pressure Washing
 - Only Under Special Conditions
 - Good Drainage Required



Rotary Spray Extraction



Tools for Truck Mount and Portable Hot Water Extractors

- Pressurized water spins angled nozzles to release soil.
- Vacuum shroud contains soiled solution for extraction.
- Very popular and excellent for textured and irregular surfaces.

Dry Vapor Steam Cleaning



- Effective for Removing Soil
- Slow Process
- Steam Vapor is About 94% Dry
- Chemical Free
- Eco Friendly
- Work Standing

Dry Vapor Deep Cleaning

- Detail Brush
 - Nylon
 - Brass
 - Stainless Steel
- Wide Area Head
- Process
 - Produces Vapor
 - Work Back and Forth Over Area



Alternative Stain Removal



- Oxygen Bleach Treatment
 - Non Toxic
 - No Harsh Fumes
 - Color Safe
 - Hydrogen Peroxide Base
- Remove Sealer First

Oxygen Bleach Process

- Protect Adjacent Areas and Objects
- Pre-Test an Area
- Apply Solution
 - Agitate with Brush
 - Allow Dwell Time
 - Brush Again
- Wet Vacuum
- Thoroughly Rinse
- Damp Mop



Cautions About Grout Cleaning



- Result of Long-Term Neglect
- Sealer Protects
- Damaged
 - Replace or Repair
- Is the Grout Stable
- Test Before Taking the Job

Spot and Stain Removal

- Spot Removal Kit
 - Acids can Etch Calcareous Stones
 - Pre Test Area First
 - Do Not Allow Chemicals to Dry
 - Follow Instructions
 - Understand Safety Precautions



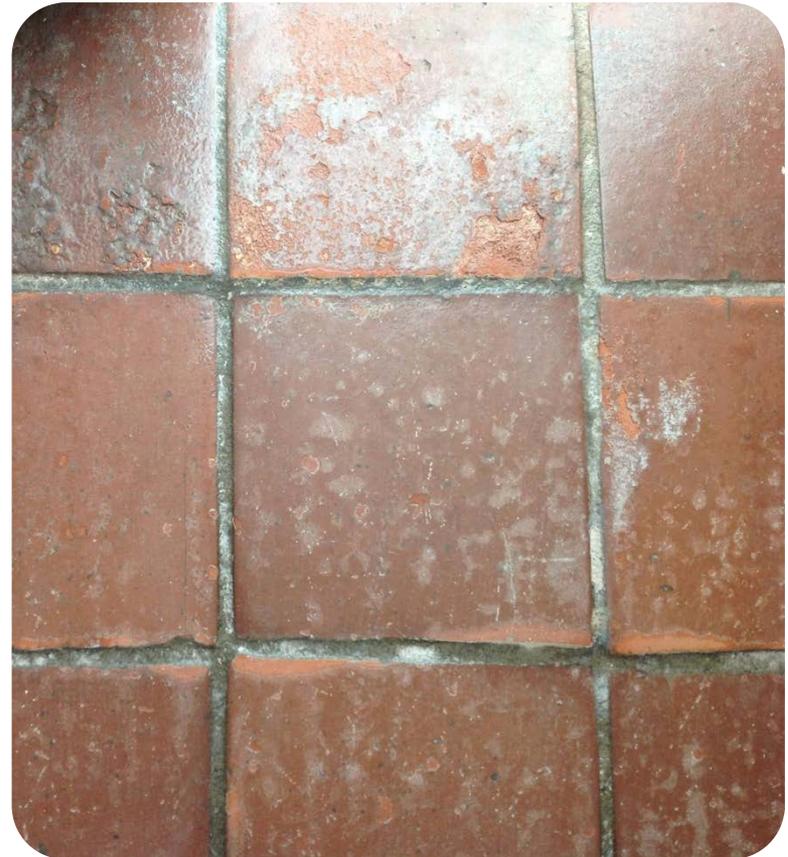
Efflorescence



- Identification
 - White Powder
 - Due to Moisture
 - Mineral Salts Migrates to Surface
- Removal
 - Foot Traffic
 - Stiff Brushing

Sealer Haze or Film

- Identification
 - Uneven Gloss
 - Milky Haze
- Removal
 - Grout Removal Product
 - Apply Original Seal
 - Agitate with Brush, Chamois or Microfiber



Epoxy Grout Residue

- Identification
 - Haze on Surface
 - Residue is Difficult
- Removal
 - Special Epoxy Haze Removers
 - Use with Extreme Caution
 - Use Only on Tile
 - Follow Instruction
 - Heat with Heat Gun and Scrape Excess



Repair Floors, Walls and Countertops



Repair Opportunities

- Grout Restoration and Recoloring
- Grout Removal and Replacement

Penetrating Sealers and Topical Coatings

- Generally Not Recommended
- Penetrating Seals and Impregnators
 - Cementitious Grout
 - Unglazed Tile
- Dry for 24 Hours



Sealer/Impregnator Program



- Apply After Installation
- Reapply Every 2 - 3 Years
- Determine Gloss
- Do Not Apply to ESD Tiles

Topical Polishes and Coatings



1. Not Recommended
2. No Benefit for Tile
3. Poor Adhesion
4. More Maintenance
5. Moisture Retention
6. Reduces Slip Coefficient

Colorants for Grout

- For Renewing or Changing Existing Grout Color
- Known as Grout Colorant, Grout Paint or Grout Dye
- May Seal or May Require Seal to be Applied

Additional Options

- Abrasive Polishing
 - Mild Polish Powder
- Anti-Slip Treatments
 - Micro Etching Acid
 - Film with Particles
- Precautions
 - Tiles are Brittle
 - Clean & Sealed
 - 72 Hour Wait Period



Comprehensive Floor Care Program

- Should include the following:
 - Preventive measures.
 - Adequate equipment, chemical and supplies.
 - Adequate budget and staffing.
 - Adequate service frequencies based on the needs of each area.
 - Written cleaning procedures.
 - A focus on maintenance vs restoration.
 - Ongoing employee training.
 - A quality assurance/inspection program.
 - Awareness and inclusion of environmentally preferable processes and products (Green).

Elements of the Cleaning Process

T emperature

A gitation

C hemical

T ime

When one element is not present, the other elements must make up for the loss.



Emerging Trends in Cleaning – 2016 & Beyond



www.ieha.org



www.cminstitute.net



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Institute of Inspection, Cleaning
and Restoration Certification

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Everything is Changing

- People – Next Gen - Retirement
- Surfaces – Self Cleaning
- Why we Clean - Health
- How we Clean - Processes
- Chemicals – Equipment
- Expectations - Validation

No One Stands Still

- Getting Better or Getting Worse
- No middle ground.
- What it means to you.

Technology

- Smart Phones – Software - Apps
- Equipment
- Digital World – Everything linked -Carpet
- Robotics
- Engineering and Design
- Nano
- Green and Sustainable

Opportunities

- Never been a better time to be in cleaning or maintenance
- Risks are present
- Tipping point
 - Technology
 - Cost
 - People

Hard Floor Care

- Carpeting
- Low maintenance Surface
- Faux Surfaces

Environmental Certifications & Assessments



epa.gov/saferchoice

www.epa.gov/saferchoice



www.issa.com



www.practicegreenhealth.org



www.carpet-rug.org



www.ul.com



www.usgbc.org/leed



www.healthyschoolscampaign.org



www.greenseal.org



www.greenguard.org

Micro-Scrubbers



www.clarkeus.com



www.tennantco.com



www.windsorkarchergroup.com

Tennant FAST Foam



www.tennantco.com

Windsor Chariot Clarke/Boost Mop Scrub Strip



www.windsorkarchergroup.com



www.clarkeus.com

Micro Fibers and Flat Mops

Rubbermaid



www.rubbermaid.com

Reflex Mopping System



www.primcosolutions.com



Economy bucketless mopping system

Bucketless Mopping Systems



www.rubbermaid.com



www.taski.com



www.diversey.com

Spin Mop System



www.cyclomop.com

TASKI Intellibot



www.taski.com

HOS Orbot Orbital Floor Machine



- Ease of use
- Works on all surfaces
 - Carpet
 - Wood
 - Stone/Concrete
 - Terrazzo
 - Ceramic Tile
 - VCT

www.hos-usa.com

Tennant – ec H₂O Water Chemical Free



www.tennantco.com

Dry Vapor Steamer - TANCS



www.advap.com

Omni Flex



www.kaivac.com

Back Pac Vacuum



www.pro-team.com

New Trends

- Wireless/Digitally Connected
- Sensors on Everything
- Personality for Robots
- Fleet Management
- 3rd Party Audits & Certification

New Chemicals
Less Chemicals
No Chemicals

Chemical Free Cleaning Network
www.cfcfn.info

Engineered Water



Tennant Co.
ORBIO
www.tennantco.com



Tersano/Lotus
www.tersano.com

Engineered Water

- www.annihilare.com
- www.geneontechnologies.com
- www.ecolab.com
- www.pathosans.com
- www.cleancoretech.com
- www.hsp.com
- www.zbioscience.com (probiotics)

Aqueous Ozone Sanitizing



www.xytoblast.com

Electrostatic Spraying Systems



www.maxcharge.com

Nano Disinfectant Products

- www.microx1.com/microx1_microprotex.html
- www.genesisurfacetechnologies.com
- www.bactibarrier.com
- www.permanonusa.com
- www.ecosealsafe.com
- www.xytoblast.com

Magazine Article on Nano:

- <http://issatoday.issa.com/Vizion5/viewer.aspx?issueID=27&pageID=12>

UV Light Disinfection



www.surfacide.com



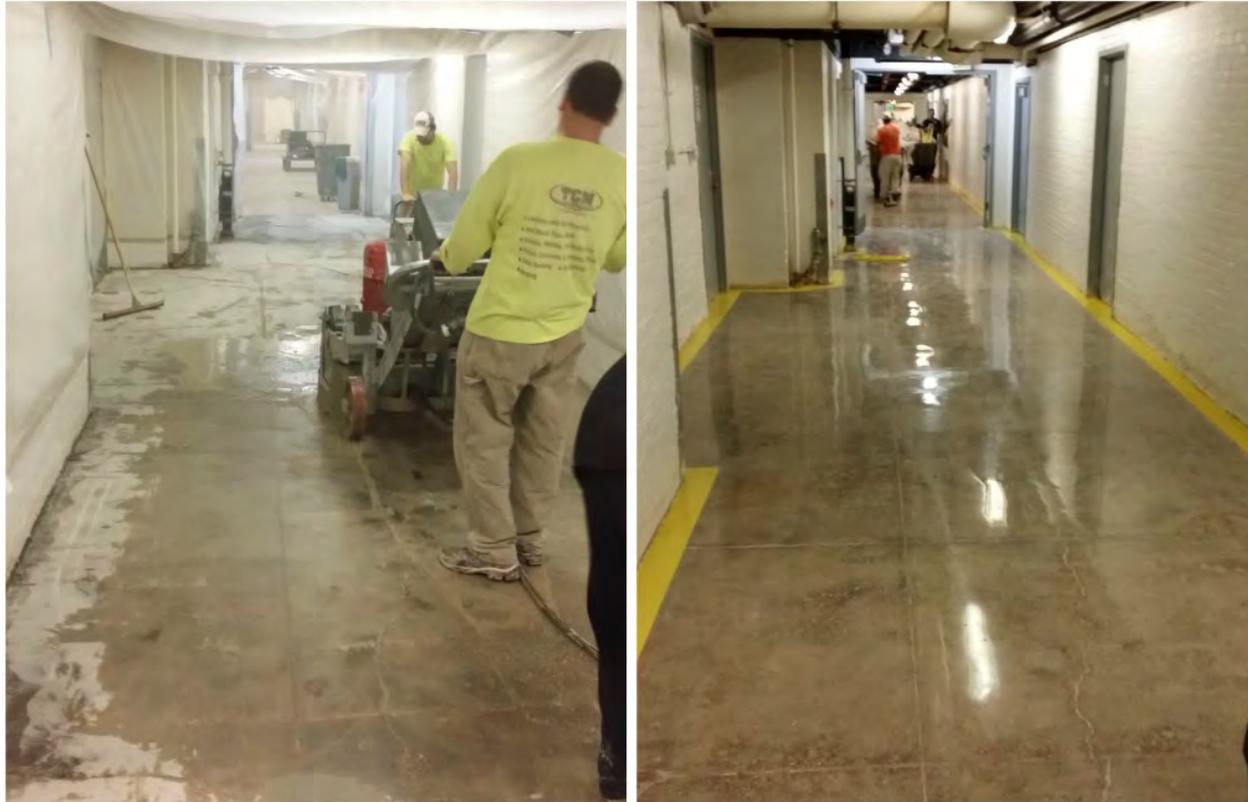
www.xenex.com

Nano Quartz Coatings



www.inovexcoatings.com

SIMIX Coatings



www.simixusa.com

Semi-Permanent Coatings Urethane



www.ultradt.com
P-320-266-0718

New Surfaces



LVT, Solid Vinyl, Linoleum Polished Concrete
and Terrazzo Prefinished Wood & Bamboo,
Exotics, Leather, Glass, Metal Surfaces that Don't
Require or Prohibit the use of Topical Finish

Mondo Flooring



www.mondocontractflooring.com

Nora Flooring



www.nora.com

Texas Granite



www.texasgranitedirect.com

Luxury Vinyl Tile (LVT)



www.manington.com
www.mohawkflooring.com
www.tarkett.com

Basic Stone Floor Care

Wood Refinishing & Repair

- Tools, stains and training for wood and leather repair and refinishing

- Mohawk Finishing Products

www.mohawk-finishing.com, P- 800-545-0047

- Konig Touchup

www.konigtouchup.com

- www.cal-floor.com (repair kits for all floors)

- National Wood Flooring Association

www.nwfa.org

- Maple Flooring Manufacturers Association

www.maplefloor.org



You must be aware
of and prepare for
changes taking
place today and in
the future.

Impactors on Cleaning Results and Carpet Life

- Specification and Installation
- Spotting (daily)
- Vacuuming (dry soil removal)
- Cleaning (interim & deep cleaning)
- Repair (seams, sprouts, edges)
- Replacement (beyond cleaning)
- Disposal/Recycle (green)

New Carpet Installation Technology

- Koolglide “Radio Wave” Seaming Iron
- Gundlach Hot Glue 2 Seaming Gun/System
- Spot Dye Kits
- Coatings and Treatments (Nano/Inovex)



Carpet Vacuum/Pile Lifter



- “Host” Liberator
- 4 Stage Vac
- Cylindrical Counter Rotation Brushes
- Lifts Pile
- Low Moisture
- Powder Or Encapsulate

www.hostdry.com

GC Laser Systems



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www.gclasers.com



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Thank You



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