

Create Big Impact with Polished Concrete Floors

Presented by:

Larry Mroz

The Sherwin-Williams Company
Business Development Manager, Concrete

Jeff Wells

The Sherwin-Williams Company
National Sales Manager, H&C Concrete



The Case for Concrete

- Polished concrete is one of the fastest growing substrate treatments in North America
- Concrete is one of the only flooring options that can be renewed on site
- Offers a low maintenance option compared to other flooring solutions
- Concrete lasts as long as the structure



Polished Concrete & LEED®

“The LEED Green Building Certification Program is the nationally accepted benchmark for the design, construction, and operation of a green building.”¹

Polished concrete systems as a flooring solution may contribute toward satisfying the following credits under LEED²:

1. Optimized energy & performance
2. Building reuse
3. Recycled content
4. Regional material
5. Construction IEQ Management Plan – During Construction
6. Low emitting materials – Adhesives and sealants
7. Mold prevention

¹ U.S. Green Building Council®, 2101 L. St. NW, Suite 500, Washington, DC 20037; www.USGBC.org

² Products are not reviewed or certified under LEED. LEED credit requirements cover the performance of materials in aggregate, not the performance of individual products or brands. For more information on LEED, visit www.usgbc.org/contact

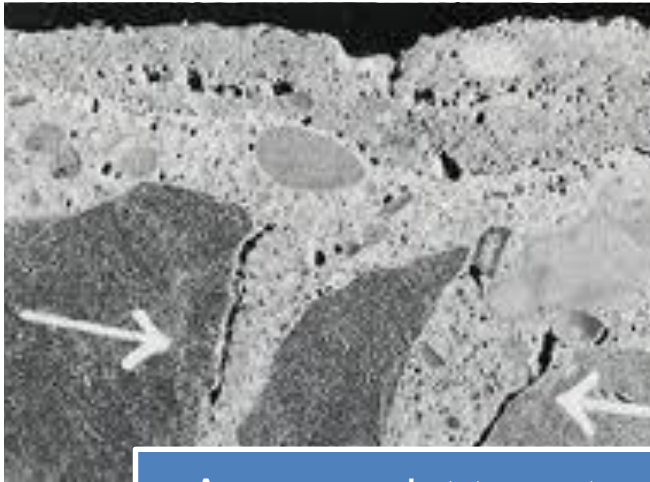
From Despair to Repair

Concrete Densification
Concrete Strength & Hardness

Concrete Finishing Affecting Densification

Two primary goals of polishing and densifying concrete:

1. Add strength to the concrete surface layer
2. Protect against moisture intrusion.



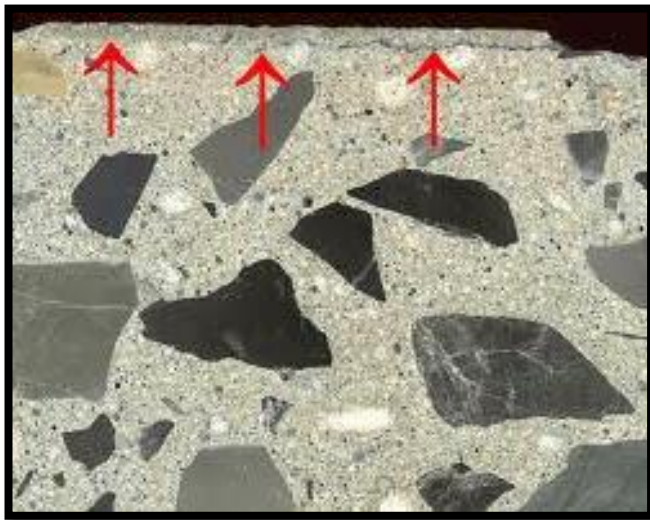
Arrows point to water intrusion



Poor finishing can leave concrete "open" to water absorption

Concrete Strength & Hardness

Pure silica has the best strength improvement and hardness gain since silica is a component of concrete.



Concrete's strength and hardness comes from silica or the combination of silica and carbon.

Polished Concrete Overview

Molecular Penetration
Condition of the Concrete
Pre-Installation
Polishing the Concrete

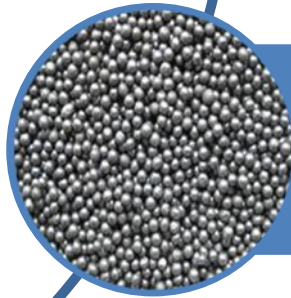
Molecular Penetration



Siliconates

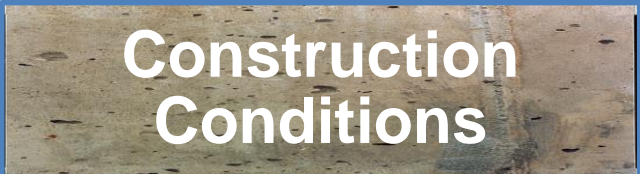


Silicates



Silica

Evaluate the Substrate: The Condition of the Concrete



Construction Conditions

- Slab on Grade
- Slab on Deck
- Entrained Air
- Sand (local)
- Fiber Reinforcement
- Floor Flatness
- Floor Levelness
- Heat Pipes
- Joints



Surface Conditions

- Previously coated
- Cure and Seal
- Edge Work
- Ghosting (pictured)
- Salt
- Environmental (chemicals)

Concrete Mix Design

- On new pours things to consider:
- 1. Do Not Add Air (If needed 6-8%)
- 2. Design a mix of 3500-5000 psi
- 3. Do Not Use Calcium Chloride as accelerator
- 4. Do Not Use Curing Compounds (Wet Cure)
- 5. If exposing aggregate it's important what type, how it's applied, and how the concrete is finished.
- 6. Avoid Adding Fiber Mesh

Pre-Installation Considerations

- Requires professional installation with experience
- Request and check references
- Allow 2-6 weeks to complete
 - More for larger, more ornate projects
- Schedule pre-construction meeting to discuss flow of work and expectations
- Schedule polished concrete installation well in advance with other trades



Pre-Installation

Experienced and professional installation

Installer Qualifications:

- Experienced and skilled Installer
- Training/Certification (if applicable)
- Confirmation of specification
- Project portfolio
- References

Pre-Installation Meeting:

- Experienced Installer will meet with all decision makers
- Mock-Ups should be performed and approved prior to installation
- Review of the condition of the concrete
- Ideal concrete cured 28 days prior to installation

Polishing the Concrete: Types and Outcomes

Concrete Polishing Sheen Levels



Honed

- 100-400 grit polish
- Warm sheen
- Some shine



Semi-Polished

- 800-1,500 grit polish
- Most common
- Found in department stores, grocery stores

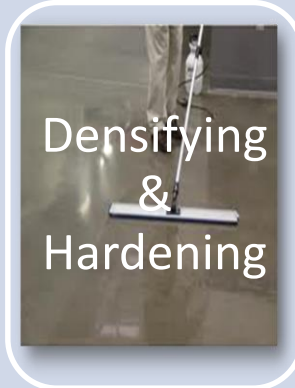
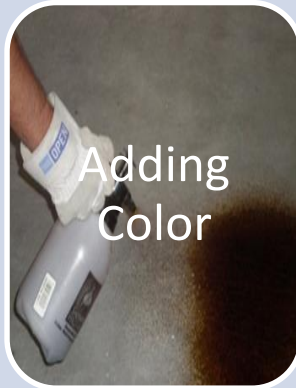


Mirror

- 1,500-3,000+ grit polish
- Most expensive
- Highest LRV

Sheen/Gloss Level – LRV (Light Reflective Value)

Polished Concrete Installation Process



Color Your Polished Concrete

Adding Integral Color to the Concrete

Adding Color to the Concrete

- ❑ Acetone Dye Stains have become the most popular colorants used for staining floors in the polishing process
- ❑ Any colorant that does not build a film could be used
- ❑ It is critical that color is added before densifying the concrete



Integrating Polished Concrete with Decorative Concrete Applications

Value Engineer Options



Polished Concrete Maintenance by Design

Adding Color to the Concrete
Protecting the Concrete

Protecting the Concrete

Most clear liquid hardener systems have a protective finish that serves as a sacrificial wear surface and provides the chemical resistance to the polished concrete system.



Protecting the Concrete

Ongoing Maintenance

- Routine sweeping, mopping, washing, and mechanical scrubbing of floors with a neutral pH cleaner are recommended
- Water may be sufficient in some environments
- DO NOT USE:
 - Cleaners that are either acidic or have a butyl base
 - Cleaners that are acidic or have a butyl base can strip the finish

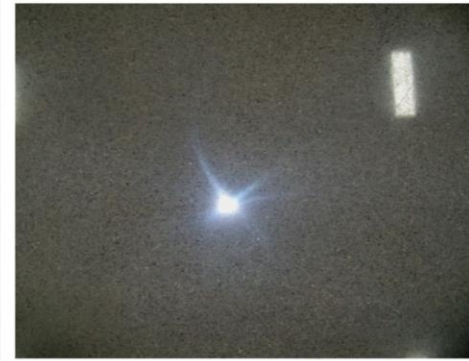


Conclusion/Summary

Why Polished Concrete?

Why Polished Concrete?

- ✓ When ***light reflective value*** is needed
- ✓ ***Less slippery surface*** is required
- ✓ When an ***environmentally-friendly*** option is warranted
- ✓ ***Lower cost of ownership*** over time with less re-applications down time



Questions?

Thank you!