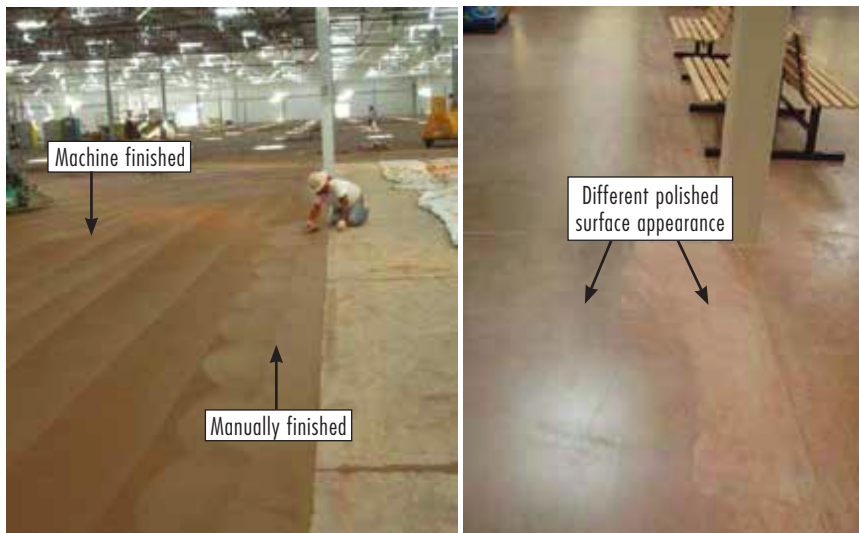




Effect of Slab-Surface Finish Density on Polished Concrete

CPC Position Statement #5

Machine troweling and manual troweling result in differing surface densities, with the former's surface being denser, harder, and darker in color. The various densities will be obvious in a polished surface, just as they are in the appearance of other concrete surfaces. Different surface densities will also result in color variations when adding color to the concrete surface, as the color will be absorbed differently in each area. Typical areas of concern are at slab edges, along construction joints, around protrusions like floor drains, and near wall edges and corners where manual finishing is likely to be used.



The photos illustrate the differences in a polished surface along a slab construction joint. Near the joint, the slab was finished with a handheld trowel. Away from the joint, the surface was finished with a walk-behind trowel. A distinct change in surface density was produced within an arm's length of the joint.

Variations in surface density can also be created by machine troweling using steel blades.

Although the polishing operation will expose differences in slab-surface density, the polishing

contractor is not responsible for the resulting differences in appearance. The Concrete Polishing Council (CPC), a specialty council of the American Society of Concrete Contractors (ASCC), has developed "A Supplemental Checklist for Concrete to Receive a Polished Concrete Finish" (<https://asconline.org>) to discuss options for avoiding these effects with the concrete contractor at the concrete slab preconstruction conference, including:

- Allowing finishers to machine trowel over the existing slab at construction joints;
- Minimizing the need for manual finishing at formed edges by using beveled edge-forms with supporting stakes driven below the form top;
- Minimizing the need for manual finishing near walls and other obstructions by using a walk-behind edge-finishing machine with a rotating guard wheel; and
- Minimizing mottling of the surface by machine troweling with plastic (Teflon™) blades rather than with steel blades.

More specific information on each of these items can be found in "Specifying the Concrete Slab to Be Polished" by Scharich et al., *The Construction Specifier*, August



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CPC Position Statement #5 (cont.)

2, 2016, and “Uniform Polished Concrete Starts with the Canvas” by Bartz et al., *Concrete Contractor*, August/September 2016. Both articles are available free at <https://ascconline.org/concrete-polishing-council/technical-documents>.

CPC polishing contractors will cooperate with owners, designers, construction managers, general contractors, and concrete contractors to discuss the effects of differing surface density on the polished concrete appearance. Selecting a deeper grind to expose more coarse aggregate may minimize the

difference in appearance due to surface-density differences. However, grinding deeper may not meet the original aesthetic goal and is likely to result in additional charges that may include the cost of a grout coat.

Slab-surface finishing is the responsibility of other parties, and the difference in the polished surface appearance due to slab-surface finish density is not the responsibility of the polishing contractor.

If you have any questions, contact your CPC contractor or the CPC Technical Hotline at +1.888.483.5288 or at cpchotline@ascconline.org.