

Position Statements from the Concrete Polishing Council of ASCC

by Todd A. Scharich and Bruce A. Suprenant

Since the 1990s, the concrete polishing industry in the United States has experienced rapid growth. While the aesthetics and performance of polished concrete floors are currently appreciated in nearly every building type—including industrial, commercial, residential, retail, education, and healthcare facilities—the initial rapid expansion of the industry created challenges that threatened continued progress.

Although some skilled craftsmen could produce polished concrete that met marketplace demands, most did not understand the complex nature of the concrete matrix, the polishing processes themselves, or how these factors related to each other. This created confusion among the design community and consumers, as the majority of contractors could not meet expectations that were based on the assurances of a product representative or photos in a marketing brochure. This confusion damaged the polished concrete brand, and so it became clear that the concrete polishing industry was headed toward self-destruction. A collaborative effort to stabilize the industry resulted in the Concrete Polishing Association of America (CPAA), created by a small group of contractors in 2010.

CPAA represented the suppliers and contractors in the concrete polishing industry. It established guidelines for the entire industry, and it offered education, certification, and publications. A little over a year ago, the CPAA contracted with the American Society of Concrete Contractors (ASCC) to assume management of the organization. Rather than maintaining CPAA as a separate organization, however, ASCC brought the polishing trade group inside its organization as a specialty council. ASCC specialty councils have elected boards and function at a somewhat higher level than committees within the larger society. The Concrete Polishing Council (CPC) is now one of four ASCC specialty councils.

“Combining with ASCC, we now have an unrivaled depth of technical and real-world knowledge about how to deliver the best possible end product,” said Chad Gill, CPC Council Director. “Our members are exposed to an array of new benefits and resources from one of the most sharing and driven communities with whom I have interacted. Our customers will see the benefits of a synergistic relationship between the canvas and the deliverable. We are very excited

about this leap forward for our association and our future growth in this dynamic industry.”

Placing CPC within ASCC’s umbrella has brought together the polishing contractors and the slab contractors, who must understand each other and work together to provide the owner a successful finished product. Significant progress has already been made. On September 15, 2017, for example, representatives of these two groups met to begin work on a specification for slabs that are intended to be polished.

The CPC has also spent the last year developing educational products, refining its certification process, and publishing documents to help define the industry and the polishing contractor’s place in it. The three Position Statements that follow comprise some of this work. The documents will be posted on the ASCC website (www.asconline.org) for access by owners, specifiers, and contractors.

Selected for reader interest by the editors.



Todd A. Scharich had been active in the decorative concrete industry for over 20 years. In 2012, he was appointed as Decorative Specialist for the American Society of Concrete Contractors. With the Decorative Concrete Council as a resource, he supports contractors on the Decorative Concrete Hotline. As a member of ACI Committee 310, Decorative

Concrete Design and Construction, he has participated in helping develop “Guide to Decorative Concrete (ACI 310R-13).”



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Concrete Polishing Council

of the American Society of Concrete Contractors

Position Statement #1

Slab Protection by Others

Polished concrete is an architectural finish that combines diamond grinding, honing, and polishing to produce a smooth surface that is durable, light reflective, and easy to maintain. Achieving this finish and delivering the final product to the owner requires protection of the concrete surface:

- After initial slab placement (post-placement); and
- After polishing is complete (post-polishing).

There may be an expectation that the post-placement and post-polishing protection will be provided by polishing contractors. But that expectation will not be realized because the polishing contractor is not on site when the concrete slab is placed and leaves the site after the slab is polished. Thus, polishing contractors are not present during the needed protection periods.

In addition, protection of the concrete surface requires authority to control the activities and schedule of other follow-on trades. Polishing contractors don't

control the other trades because they do not have this contractual authority. Nor do they have responsibility for the other trades' personnel, schedule, or work.

Thus, post-placement and post-polishing slab protection must be provided by an organization that meets the following requirements:

- It is on site after initial slab placement and until the building is turned over to the owners; and
- It has the responsibility and authority to control the activities and schedule of other trades.

The construction manager, general contractor, or possibly the owner are the only members of the construction team that meet the requirements for providing protection of the slab. Concrete Polishing Council (CPC) contractors do not meet either of the two requirements. CPC polishing contractors often include "protection by others" clauses in their specifications and contracts to indicate that they are not responsible for that work.

Upon request, CPC polishing contractors can assist construction

managers, general contractors, and owners in developing an appropriate Concrete Floor Protection Plan (CFPP) for both post-placement and post-polishing slab protection. Signage, as shown, can be an effective part of jobsite implementation of the CFPP. In addition, other trade contractors can have language in their subcontracts requiring them to adhere to the CFPP.

Alternatively, the slab could be specified to be placed late in the schedule so there are minimal protection issues. Although this will slightly increase the cost and schedule, this may be the best approach as it may be difficult to protect the slab during construction. However, this choice is best made by the owner in consultation with the design and construction team.

CPC polishing contractors will cooperate with general contractors, construction managers, and owners in developing a CFPP for each specific application. However, the post-placement and post-polishing slab protection is the responsibility of other parties. If you have any questions, contact your CPC polishing contractor or the CPC Technical Hotline at (844) 923-4678 or at cpchotline@asconline.org.

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Signage can be an effective part of jobsite implementation



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Position Statement #2

Slip Resistance of Polished Concrete

Polished concrete provides a smooth surface that is durable, light reflective, and easy to maintain. Typical uses for polished concrete include schools, airports, retail spaces, casinos, restaurants, hospitals and medical facilities, public libraries, and other public use areas subject to high foot traffic. Because of its smooth and glossy surface, however, owners and architects have asked about the slip resistance of polished concrete. To answer that question, the Concrete Polishing Council (CPC) (then the Concrete Polishing Association of America) contracted with the Tile Council of North America (TCNA) to determine dynamic coefficient of friction (DCOF) values for polished concrete surfaces, using the test method in Section 9.6 of ANSI A137.1, American National Standards Specifications for Ceramic Tile. That standard specifies a minimum dynamic coefficient of friction of 0.42 for tiles in level indoor areas that may get wet in use.

In 2015, CPC polishing contractors supervised the placement of a 20 x 45 ft (6 x 14 m) concrete slab in the TCNA laboratory. After 33 days of curing, grinding and polishing were performed to create 48 test sections, each 3 x 4 ft (0.9 x 1.2 m). As listed in the table, four aggregate exposure classes were produced with four different gloss levels. Thus, a total of 16 finish types were produced. Each finish type was produced in triplicate, resulting in a total of 48 test sections.

Three randomly selected 1 ft (0.3 m) square sample areas were tested on each 3 x 4 ft test section. Each sample area was tested under wet conditions in four directions using a calibrated BOT 3000E machine. A total of 576 tests were completed on the 48 test sections.

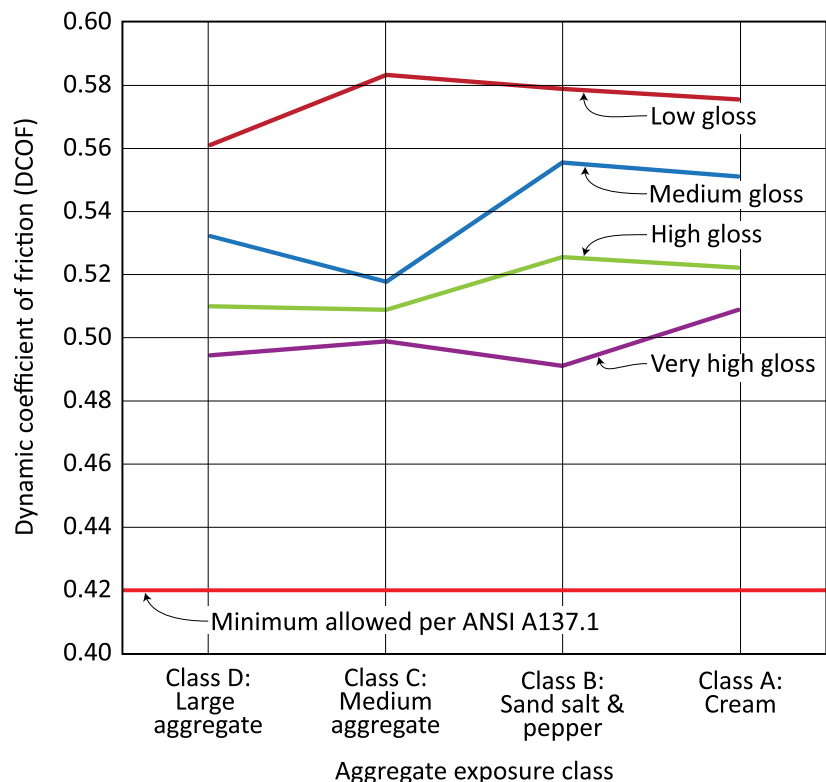
The graph shows the average of all measurements for each gloss level, in order of decreasing aggregate class. Note that the slip resistance is not

affected by the aggregate exposure class but does vary based on the gloss level. All test results significantly exceeded the required DCOF of 0.42, even at very high gloss levels. The test results have been presented at the 2015 World of Concrete Polishing Luncheon and published in *Concrete Décor*, August/September 2015 (“CPAA Adopts New Position on Measurement of Polishing Concrete Floors’ Slip-Resistance”). The January 29, 2015, 27-page report by TCNA is available on the CPC website at www.asconline.org/concrete-polishing-council/resources.

CPC polishing contractors provide a slip-resistant polished concrete surface to owners and architects as documented in this test program. If you have any questions, contact your CPC polishing contractor or the CPC Technical Hotline at (844) 923-4678 or at cpchotline@asconline.org.

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Laboratory testing of 48 test sections	
Aggregate exposure class	Gloss level
Class A: Cream	Level 1: Low gloss
Class B: Sand salt and pepper	Level 2: Medium gloss
Class C: Medium aggregate	Level 3: High gloss
Class D: Large aggregate	Level 4: Very high gloss



DCOF values for aggregate exposure classes



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Position Statement #3

Coordinating the Concrete and Polishing Contractors' Subcontracts

Owners and architects commonly delay choosing the floor finishes until after the project is under construction. They feel that they have the time to wait while making other decisions to get the project off the ground. In many building projects, the detailed design of the interior finishes is not completed until the concrete subcontractor has signed a contract with the construction manager or general contractor. The scope and price for the concrete work are therefore generally settled (and much of the work performed) well before the floor finish is selected. This approach can work fairly well with finish flooring but not with polished concrete.

Why does it work well for some finish flooring but not for polished concrete? Finish flooring *covers* the concrete surface, making the initial construction and any necessary repairs less important to the aesthetics of the final floor. A polished floor *uncovers* the concrete surface, making the initial construction

and any necessary repairs very important to the aesthetics of the final polished surface.

Thus, a polishing contractor may arrive on site and find that repairs and remediation are needed, and these will affect the specified polished finish. That is not a good time to tell the owner that he or she can't get what the architect described.

Coordinating the concrete and polishing contractors' subcontracts at the same time allows for coordination to:

- Discuss and price out what the polishing contractor needs from the concrete contractor's work;
- Discuss and price out the effects of changes in floor flatness with time (curling for slabs-on-ground) and ensure that these effects are considered before final selection of the polished concrete surface;
- Discuss and price out the concrete floor protection plan (see CPC Position Statement #1) after initial slab placement (post-placement) and after polishing is complete (post-polishing);
- Determine if the scope of work specified for the concrete and polishing subcontractors will result in the owner's desired final polished appearance; and
- Allow both subcontractors to attend pre-construction meetings before slab placement and to evaluate completed work during construction.

This coordination is needed to ensure that an owner receives the desired final polished concrete surface. Without such coordination, the owner's expectations may not be achieved. It's important to remember that most floor finishes cover the concrete surface, but polished concrete uncovers the concrete surface to obtain the final finished product.

CPC polishing contractors will cooperate with general contractors and construction managers in coordinating work. Waiting until after the concrete slab is finished to purchase polished contractor services can result in increased costs and a limited choice of final surface appearances. If you have any questions, contact your CPC polishing contractor or the CPC Technical Hotline at (844) 923-4678 or at cpchotline@asconline.org.

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Floor processing begins with wet grinding