



POLISHED CONCRETE DEFINITION - D100.0

The act of changing a concrete floor surface, with or without aggregate exposure, until the desired level of finished gloss is achieved by using one of the listed classifications; Bonded Abrasive Polished Concrete, Burnished Polished Concrete, or Hybrid Polished Concrete.

General Statement of the Situation.

The true definition or classification of “polished concrete” is widely misconstrued within the concrete polishing industry. There are three dilemmas that have thus far defied a consensus regarding classifications of the polished concrete end product.

- Agreement on a methodology for measuring the levels of quality for polished concrete.
- Agreement on a methodology for producing polished concrete in the field.
- Agreement on terminology defining the products and processes used to produce polished concrete.

The lack of consensus is due to many factors that affect the processes involved in producing polished concrete.

- Inconsistencies within the concrete substrate.
- Inconsistencies within the concrete finishing techniques.
- Variations within the polishing processes (number of grinding steps, number of passes, amount of time spent performing the polishing process)
- Variations within the equipment used to produce polished concrete
- Variations within the design, quality, and functionality of the diamond tooling used to produce polished concrete.

The Nature of Polishing.

Polished surfaces have been in existence for many years and several tests methods exist to regulate the level of quality. Gloss, clarity, haze, profile, and abrasion resistance are terms that apply to defining the different classifications of polish within other industries. Applying these terms to the polishing process will allow our industry to classify the variations within our industry and assist designers, architects and consumers in the selection of a product rather than a process.

CPAA Position.

The CPAA Standards Committee, which reflects a cross-section of the concrete polishing industry, has created terminology to define the products and processes used within the industry to produce in situ polished concrete. The Committee also has reviewed test results determining that gloss, clarity, haze, profile, and abrasion resistance all have equal relevance in determining the final quality of the product produced by the polishing technician.

In the absence of a prescribed methodology for field measuring the quality of polished concrete, the CPAA takes the following position in classifying the types of polished concrete and determining the standards of limits for quality for each classification as such:

Act of Changing: The act of changing a concrete floor surface by one of the following methods:

- Bonded abrasive polished concrete - The multi-step operation of mechanically grinding, honing, and polishing a concrete floor surface with bonded abrasives to cut a concrete floor surface and to refine each cut to the maximum potential to achieve a specified level of finished gloss as defined by the CPAA. This yields the most durable finish and requires the least maintenance.
- Burnished polished concrete - The multi-step operation of mechanical friction-rubbing a concrete floor surface with or without waxes or resins to achieve a specified level of finished gloss as defined by the CPAA. This operation yields a less durable finish and requires more maintenance than bonded abrasive polished concrete.
- Hybrid polished concrete - A multi-step operation, using either standard grinding / polishing equipment, lightweight equipment, high speed burnishing equipment, or a combination of, to combine the mechanical grinding, honing, and polishing process with the friction rubbing process by utilizing bonded abrasives, abrasive pads, or a combination of, to achieve the specified level of finished gloss as defined by the CPAA.

Aggregate exposure - Grinding a concrete floor surface with bonded abrasives to achieve a specified level of exposed aggregate. These are classified as A, B, C and D with varying levels of exposed aggregate (see Aggregate Exposure Chart)

CLASS	NAME	APPROXIMATE SURFACE CUT DEPTH*	APPEARANCE
A	Cream	Very little	Little aggregate exposure
B	Fine Aggregate (Salt and Pepper)	1/16 inch	Fine aggregate exposure with little or no medium aggregate exposure at random locations
C	Medium Aggregate	1/8 inch	Medium aggregate exposure with little or no large aggregate exposure at random locations
D	Large Aggregate	1/4 inch	Large aggregate exposure with little or no fine aggregate exposure at random locations

Finished Gloss - Processing a concrete floor surface to achieve a specified level of finished gloss; (flat [ground], satin [honed], semi polished, and highly polished) that is measure in reflective clarity (DOI), and reflective sheen (specular gloss), and haze. Glossy finishes are classified as levels 1,2,3 and 4 with varying degrees of reflective clarity and sheen. (see Finished Gloss Chart)

LEVEL	NAME	REFLECTIVE CLARITY	REFLECTIVE SHEEN	SUGGESTED GRIT RANGE	SUGGESTED MINIMUM NUMBER OF ABRASIVE PASSES
1	Flat [Ground]	Flat appearance with no to very slight diffused reflection	None to very low	Below 100	4
2	Satin [Honed]	Matte appearance with or without slight diffused reflection	Low to medium	100 to 400	5
3	Semi-Polished	Objects being reflected are not quite sharp and crisp but can be easily identified	Medium to high	800 and higher	6
4	Highly-Polished	Objects being reflected are sharp and crisp as would be seen in a mirror-like reflection	High to highest	80	7

- Reflective Clarity:
 - Visual Appearance: When viewed 5 feet above and perpendicular to a surface, the degree of sharpness and crispness of the reflection of overhead objects.
 - Measurement by Device: Numbers indicate the Distinctness of Image on a scale of 1 (poor) to 100 (high) when measured according to ASTM D5767.
- Reflective Sheen:
 - Visual Appearance: When viewed at 20 feet from and at an angle to a surface, the degree of gloss reflected from a surface.
 - Measurement by Device: Numbers indicate the Gloss at 60 degrees when measured according to ASTM D523-08.
- Haze:
 - Measurement by Device: Numbers indicate the variation of gloss between 20 degrees and 60 degrees, when gloss exceeds 70GU, when measured according to ASTM D4039.
- Surface Profile:
 - Measurement by Device: Numbers indicate the variation of peaks and valleys of the concrete surface by using metrology devices.
- Abrasion Resistance:
 - Measurement by Device: Numbers indicate the minimum acceptable revolutions of abrasion.