

# PCCA Position Statement #13

## Grinding Existing Concrete Artifacts

*Floor patterns or imprints are common in renovation projects. Most often, these are caused by years of moisture vapor emissions transmitting through the concrete and high pH salts, etching the concrete surface. Grinding to aggregate may diminish the appearance, and in some cases, adding a color dye may blend the areas. Always make the customer aware of the potential for existing floor-covering patterns appearing in polished concrete.*

### Uniformity of Aggregate exposure

Aggregate exposed when grinding a slab will be random in size and location, varying with placement techniques, curling and flatness. Random exposure is beyond the control of your contractor and it is inherent and unique to the concrete. Attempts to achieve uniformity by grinding deep, where aggregates are ground below their equators can cause slab damage due to aggregate pop outs. Acceptable aggregate exposure is up to 0.5 times the diameter of the mid-size aggregate in the mixture. (ref ACI 310R-13)

#### CRACKS:

Concrete is going to crack, most projects control drying shrinkage cracks by intentionally cutting control or contraction joints in the concrete, creating a weakened area for cracks to develop. When grinding existing concrete we don't know where these cracks are if hidden and all may need different treatments to rectify. Some cracks may open back up after treatment as the concrete is moving. This may require specialized treatment with compounds which allow movement. Some cracks may be contaminated with materials which don't allow treatments to bond to them. The only way to rectify is to chase the crack out and enlarge which may cause more issues than it solves.

#### COLOUR VARIATIONS:

The final color of concrete can vary greatly. The six key factors that have the greatest impact on the final color of the concrete include cement color and content, water-cement ratio, aggregate color, how the concrete is cured and finishing techniques. All of this is dependent on when the concrete was new, with existing concrete we can only work with what is there. So color variations may occur on your floor.

#### PATTERNS:

When existing floor coverings such as vinyl or tile are removed, they can leave distinct visible patterns in concrete known as patterning or shadowing. The patterns are permanent, and often more apparent after polishing. Exposing aggregate or adding color may diminish the appearance of patterns. Boot prints and screed marks can also be uncovered when grinding. This is also something that cannot be rectified and is a permanent artifact in the concrete. Further grinding might diminish the appearance but won't remove them.

#### STAINS:

Stains or contamination in or on concrete are divided into four categories depending on their chemistry. Each type of stain requires a specific cleaner to break down and remove the stain. Enzymatic stains, Oxidizable stains, Particulate stains and Hydrocarbon based stains. The processes needed to remove these may cause irreparable damage to the concrete deeming it unpolishable. Some stains will remain in the concrete permanently.

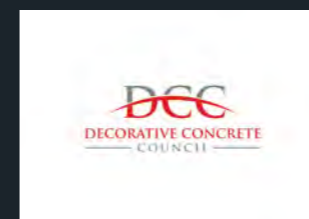
Some imperfections, such as objects embedded into the concrete (wood, sunflower seeds, trash, etc.) are beyond the Diagrind's control and are permanent characteristics of the concrete surface. These items can be removed and repaired but a patch will be noticeable.

#### Corners/edging:

With existing buildings walls are typically already in place. It is not possible to get a perfect finish in these areas compared to grinding without walls. Dust suppression is an extremely important safety measure used in polishing and to get closer to walls and corners these hoods prevent that. Therefore we can only get as close as these hoods allow. Similar if you don't remove skirting or cabinetry this will likely be damaged by the grinder when trying to grind close.



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