Light Gray, White and Cream-Colored Concrete

Overview: There are a variety of cementitious materials available to produce a concrete on the color spectrum from light gray to cream to white.

Applications: Architectural/Decorative Concrete, Specialty Applications, Safety

Benefits

- Using a combination of white cement and slag produces an architectural mix with white concrete color and reduced embodied carbon, capable of achieving up to 8,000+ psi compressive strength.
- ▶ Some sources of Type IL cement offer high-early strength and a cream-colored concrete.
- Aggregate color will influence the color shade of the concrete, but even concrete with very dark colored aggregates will have a white appearance when white cement is used and a light color when slag is used. The shade of white can be brightened in a variety of ways: increasing the amount of cement paste, incorporating a white-colored aggregate or adding a titanium dioxide admixture.
- > Provides enhanced reflective properties to concrete (higher solar reflectance), which could boost energy efficiency of building interiors.



White Cement

- White cement is utilized to meet architectural specifications that cannot be met with ordinary portland cement. Every color option is possible with the use of white portland cement. The properties provided by this specialty cement provides an impartial coloring base for concrete; allowing for pure white concrete to pastel colors.
- Please note: white cement typically accelerates the set time of concrete, which can reduce the working time of the concrete. To ensure a successful project, it is critical to have a pre-construction meeting prior to pouring.

Type IL Cement

- This cream-colored cement is popular with the design community because it offers a softer color than the typical grey.
- This is a blended cement. Portland cement is blended with limestone and achieves designation as a Type IL per ASTM C595.
- The use of limestone in this cement reduces the carbon footprint compared to ASTM C150 portland cements.

Other Solutions

- ► Slag
 - Slag is a supplementary cementitious material (a by-product of steel manufacturing) and has a white color. This material can be used with either typical gray cement, white cement, or Type IL cement to produce a concrete color within the range of light gray to white.
 - Please note: There is the potential for the surface of the concrete to have a green color immediately after formwork is removed. The color will lighten and disappear over time with exposure to the air and sunlight. The potential for this green color occurrence can be minimized with faster formwork removal.
- White-liquid titanium dioxide coloring admixture
- ▶ White aggregates rock and sand

Architectural Concrete

CENTRAL

Concrete with Exposed Aggregate Finish or Polished Finish

- Aggregate appearance is critical in architectural concrete that will have an exposed aggregate finish. Typical aggregates available at the batch plant can achieve a desired appearance, but sometimes specialty architectural aggregates are required for specific aesthetic applications.
- There are three basic versions of polished concrete that achieve a glossy finish: bonded abrasive polished concrete, burnished polished concrete, and topical polished concrete.
- Applications: Top-Cast[®] Top-Surface Retarder treatment, exposed concrete finishes, cast-in-place, terrazzo and tilt-up concrete, floor slabs for commercial warehouses, office facilities, and high-luster flooring.
- Polished Concrete Benefits: Alternative to wax flooring, low maintenance, low-cost life cycle compared to other floor coverings, and aesthetic value.

Integral Color

- For integrally colored concrete, the principal factors in the shade of the concrete color are: types of cementitious materials (cement, white cement, slag, fly ash, metakaolin, etc.) and water content of the batch. Aggregate color has a more minor role in the color appearance of integrally colored concrete. As long as the surface is not removed via Top-Cast[®], sandblasting, or any other method, the integrally colored paste at the concrete surface will display the visible color.
- Central Concrete and Right Away Redy Mix offer color matching for both existing colors and new designs.
- It is critical to understand that concrete is batched with natural materials and there is inherent variability.
- Color pigments are developed in either a powder or liquid form. When combined with fresh concrete, integral color has the capability to provide a wide array of colors to the consumer.
- The following construction practices can significantly affect the surface appearance of integrally colored concrete: formwork, form release, age of concrete when formwork is removed, moisture, sun exposure, among many more. It is important to consult the concrete contractor for how to achieve a desired surface aesthetic.
- ► Applications: Exterior flatwork, floors, walls, countertops
- Benefits: Entirety of concrete batch is colored all the way through, color extends throughout depth of concrete slab.



Figure 1: Example of terrazzo concrete flooring



Figure 2: Example of Concrete Polishing



Figure 3: Example of dry color pigment additive for concrete coloration.

Questions? We are ready to help.

Contact your Account Manager or Regional Project Manager www.centralconcrete.com www.rightawayredymix.com





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