

PART 1 - GENERAL

1.1 Scope of Specification.

This specification defines the materials to be used together with the methods of installing The "Stampcrete System" for the Contractor, or Contract Administrator directing its use.

1.2 Description of System

- .1 System. Stampcrete is, poured in-place concrete, pigment colored and stamped with patterned platform tools to produce a surface similar to natural stone, brick and other natural construction materials. Base color is achieved using color pigments in the mix or surface treated with color surface hardeners. A colored powder release agent used in the stamp process insures maximum surface detail and provides a second color for surface highlights and a distinctive grout line look. Stampcrete special acrylic-based sealers aid to the curing process, provide full color depth and richness and maximum concrete protection.
- .2 Pattern. The platform tools create the patterns and texture imprinted into the concrete. The platform tool for a particular pattern can be either with or without texture.
- .3 Integral Color. The color of the entire slab can be changed from gray cement to a variety of colors by adding color pigments, that can be added at the batching plant or at the job Site.
- .4 Surface Color. The color of the surface of the concrete is determined by the color of the color hardener floated into the surface and the color of release agent used.

1.3 Preparation

- .1 Grade Preparation. The subgrade must be moist, completely compacted, have adequate and uniform load bearing characteristics, and be free of frost and organic matter at the time the concrete is placed. No vapor barrier should be used so as to enable excess water in the concrete to escape from the bottom, allowing an earlier start of the stamping procedure. The subgrade must be free of standing water and should not have any muddy or soft spots at the time the concrete is placed.
- .2 Protection of Surrounding Surfaces. All surrounding surfaces, including walls, must be protected.

PART 2 - MATERIALS

2.1 Concrete Mix Requirements.

- .1 All concrete not subjected to freezing shall have a minimum compressive strength of 3,500 psi at 28 days.
- .2 All concrete subjected to freezing shall be air entrained to 6% + -1, and have a minimum compressive strength of 4,000 psi at 28 days.
- .3 Use cement, type 1 meeting ASTM C-150. Use angular crushed stone of any type, limit top size to 3/4" or round gravel. No chloride admixtures of any type shall be permitted in any concrete to be stamped (effects color). Non-chloride water reducing accelerators or mixtures complying with ASTM C260 may be used in all concrete subjected to freezing. No calcium chloride or materials

- containing chloride are permitted in Stampcrete concrete mix.
- .4 All concrete shall contain Stampcrete Fiber. Fiber shall be installed at the batch plant, or job site, at the rate of 1 lb. per cu yard to control crack formation.
- .5 All concrete to be stamped shall be delivered to the job site at 3 to 4" slump.

2.2 Expansion Material.

- .1 Expansion materials shall be used consisting of compressible filler complying with ASTM D-1752 type. The expansion materials are used to isolate stamped concrete from walls, columns, changes in elevation, etc.

2.3 Coloring

- .1 integral Color. As required by specification, integral color shall be supplied by Stampcrete. The color pigment shall be derived from synthetic pigments, iron oxides and, chromium oxides.
- .2 Dust on Colors. Dust on colors shall be a dry shake color hardener, which shall be supplied by Stampcrete, which conforms to the appropriate ASTM specifications. Dust on colors shall be a dry mix composed of a mineral oxide pigment, synthetic pigments, iron magnese or chromium graded hard aggregate, concrete hardening agents and Portland cement.
- .3 Color Release Agent. Color release agents shall be supplied by Stampcrete.

2.4 Reinforcing Material.

- .1 The following reinforcing material shall be used to minimize stress induced cracking. Stampcrete reinforcing fiber at the rate of 1# cu. yd.

2.5 Sealing & Curing.

- .1 Modified acrylic sealer supplied by Stampcrete shall be used to aid in curing and protect the surface from petroleum products and other foreign material penetrating the surface. Application should be in two light coats to gain maximum penetration and allow contractor to install an even consistent coating. No substitutions permitted as substitutions will affect coloration and decorative patterns.

PART 3 - INSTALLATION

3.1 Surrounding Surfaces.

- .1 Before placing the concrete, the surrounding surfaces and walls must be protected to prevent discoloration from the concrete and color hardener. This is done by covering the surrounding surfaces with polyethylene sheets.

3.2 Placing Concrete.

- .1 The concrete is poured, struck off, bull floated to an even surface plus or minus 1/8 of an inch in 10 feet in any direction to the finished grade, and edged the same way as any gray concrete

pour. Concrete batches should be controlled in order to keep everything uniform throughout the complete installation.

3.3 Coloring Concrete

- .1 **Integral Colors.**
If integral colored concrete is specified, the coloring matter may be added at the batch plant or to the ready mix truck at the job site. If added to the ready mix truck at the job site, the mixture shall be rotated a minimum of 15 to 18 minutes after adding the integral color. The amount of pigment to be added shall be that required per cubic yard as given in Stampcrete color chart.
- .2 **Dust on Colors.**
The coloring method shall be the Stampcrete method by which 60 pounds of color hardener per 100 sq. ft is broadcast onto the concrete in two applications. The color hardener is applied to the concrete surface at the time no excess moisture shows at the surface, but while the concrete is still plastic. The first application should consume about 2/3 of the color hardener. The surface is then bull floated and the edging is done. The second shake is then applied using the remaining 1/3 of the color hardener (retaining only a small amount for touching up non-uniform or weak-tone areas). Water must not be sprinkled or otherwise added to the surface during the application or finishing. The necessary moisture for the color hardener must come from the concrete substrate in order to develop a proper bond and assure adequate density for the concrete surface. The surface should not be troweled between the first and second shakes, and if desired, any troweling after the second shake should be minimized.
- .3 **Color Release.**
The color release is broadcast onto the concrete surface just prior to stamping the concrete. Applied at the rate of one pail per 1,000 sq. ft. The color release is only broadcast onto the surface, and is not in any way worked into the surface.

3.4 Stamping the Concrete.

- .1 The concrete will be stamped when a 1/2" deep impression made with the finger holds no water and the concrete maintains its shape. Tools are to be aligned as directed by the Contract Administrator to provide pattern direction shown on drawings and to minimize pattern "tracking" and hand tooling. Contractor is required to have an adequate number of platform tools at the job site to cover width of the largest pour plus one additional tool for proper alignment of the succeeding row. Tools must be placed and removed evenly and parallel to surface to insure even pressure with no gouge marks. Adequate pressure must be applied using body weight to insure platform tool "bottoms out" and yields total tool detail to the concrete surface. Stamps must be kept free of foreign material during entire stamping operation. Size of pour is dependent on crew experience and weather conditions, etc. A maximum of 500 sq. ft per pour is allowed without prior approval. While concrete is still plastic, contractor using texture skins and other hand tools will complete surface treatment of areas not stamped by the platform tools to achieve textured surface, correct the depth of any joint lines and eliminate squeeze concrete left between tools.

3.5 Control Joints.

- .1 After the concrete has been allowed to cure for at least 12 hours, control joints shall be formed by sawing. Joint depths shall be a minimum of 1/3 the slab's thickness. Jointing shall be as specified by The City or Contract Administrator, and if not specified, jointing plans shall be

prepared for approval. In laying out the joints, a square panel pattern is preferable, but a dimensional ration of 1 1/2 times the length of slab to width. The space between joints shall not exceed 10 feet in any direction.

3.6 Cleaning.

- .1 After at least 6-12 hours in a very hot and dry climate, or at least 24 hours under all other conditions, the color release should be removed from the concrete surface by using a strong stream of water from a hose and broom to achieve desired antique look. It is very important to do the washing off uniformly so as to maintain a uniform amount of shading. A mild acid cleaning may be used to remove excess release color.

3.7 Sealing.

- .1 Preparation.
The surface must be completely sun dry before sealing. This means that the surface must set a minimum of at least 12 hours after washing. Failure to do this can cause peeling and/or blotchy dull areas.
- .2 Application.
The concrete should not be very hot at the time of the application as a hot surface will cause accelerated drying thus inhibiting the penetration of the sealant and possibly causing peeling. Sealer must be applied uniformly using airless sprayer, or large nap roller. After applying a very thin first coat, allow to penetrate surface and dry. Apply a second very thin coat concentrating on areas not completely sealed with first coat. Both coats combined not to exceed 5 gal per 1,000 sq. ft. Soak up any excess sealer in gout lines and cracks prior to drying. A uniform sealed look is required. Surface must be protected from foot traffic until dry (approximately 4 hours) and from vehicular traffic (24 hours).
- .3 Cleanup.
Cleanup of solvent sealer is done when using xylene or toulene solvent.

PART 4 - MISCELLANEOUS

4.1 Traffic on Pour.

There shall be no traffic allowed on the concrete surface for at least 24 hours after the sealer has been applied. The concrete should not be opened up for foot traffic until after the color release has been washed off, or until at least 4 hours after the sealer has been applied. Automobile traffic should not be allowed on the pour until 24 hours after the sealer has been applied.