

SECTION 03530
CONCRETE TOPPING

PART GENERAL

SECTION INCLUDES

Concrete Topping Compound, Standard-Traffic Service.

Concrete Topping Compound, High-Traffic Service.

Products to Apply and Finish Concrete Toppings.

RELATED SECTIONS

Section 03300 - Cast-In-Place Concrete.

REFERENCES

ASTM C 109/C 109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens).

ASTM C 150 - Standard Specification for Portland Cement.

ASTM C 666 - Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

ASTM C 672 - Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.

ASTM C 944 - Standard Test Method for Abrasion Resistance of Concrete or Mortar Surfaces by the Rotating-Cutter Method.

SYSTEM DESCRIPTION

Performance Requirements: Concrete topping; mixed, applied, and cured in accordance with concrete topping compound manufacturer's printed instructions:

Concrete Topping, Standard-Traffic Service:

Compressive strength, when tested in accordance with ASTM C 109; 2-inch cube specimens:

1300 pounds per square inch after 7 days curing time; within two standard deviations.

1800 pounds per square inch after 14 days curing time; within two standard deviations.

2800 pounds per square inch after 28 days curing time; within two standard deviations.

Resistance to rapid freezing and thawing, when tested in accordance with ASTM C 666: Beginning of failure of flat areas after 70 cycles.

Abrasion resistance, when tested in accordance with ASTM C 944:

Maximum 1 gram loss under 2 gram load, with 50 percent flat texture.

Maximum 3 grams loss under 6 gram load, with 50 percent flat texture.

Concrete Topping Compound, High-Traffic Service:

Compressive strength, when tested in accordance with ASTM C 109; 2-inch cube specimens:

2100 pounds per square inch after 3 days curing time; within two standard deviations.

2900 pounds per square inch after 7 days curing time; within two standard deviations.

4000 pounds per square inch after 28 days curing time; within two standard deviations.

Resistance to rapid freezing and thawing, when tested in accordance with ASTM C 666: Beginning of failure of flat areas after 110 cycles; no delamination after 300 cycles.

Resistance of concrete surfaces exposed to de-icing chemicals, when tested in accordance with ASTM C 672: Beginning of failure of flat areas at edges after 45 cycles.

Abrasion resistance, when tested in accordance with ASTM C 944:

Maximum 1 gram loss under 10 kilogram load, with 50 percent flat texture.

Maximum 3 grams loss under 20 kilogram load, with 50 percent flat texture.

SUBMITTALS

Submit under provisions of Section 01300.

Product Data: Manufacturer's descriptive literature for concrete topping compound.

Selection Samples: Two sets of color chips representing concrete topping compound manufacturer's full range of available colors.

Verification Samples: Two samples, minimum size 6 inches square,

representing actual color and finish of product to be installed.

Quality Assurance Submittals:

Test Reports: Certified reports from independent testing laboratory supporting compliance of concrete topping to specified requirements.

Manufacturer's instructions:

Printed mixing and application instructions for each product.

Manufacturer's Safety Data Sheets (M.S.D.S.) for each product.

QUALITY ASSURANCE

Obtain copy of concrete topping compound manufacturer's instructional videotape; ensure that applicator views videotape before beginning construction activities of this section.

DELIVERY, STORAGE, AND HANDLING

Storage and Protection:

Store products of this section in manufacturer's unopened packaging until installation.

Maintain dry, heated storage area for products of this section until installation of products.

PART PRODUCTS

MANUFACTURERS

Acceptable Manufacturer of Concrete Topping Compound(s):
Mortex Manufacturing Company, Inc.; Corporate Headquarters at
1818 West Price Street, Tucson AZ 85705; Telephone 1-800-338-
3225, FAX 520-293-8884.

Requests for substitutions will be considered in accordance with provisions of Section 01600.

Substitutions: Not permitted.

MATERIALS

Concrete Topping Compound, Standard-Traffic Service:

Acceptable Product: Keystone Kool Deck.

Characteristics: Composed of synthetic iron-oxide pigments

and natural organic materials, meeting performance requirements specified in SYSTEM DESCRIPTION Article of this section.

Color: Selected from full range of manufacturer's standard colors.

Color: _____.

Color: Specified in SCHEDULES Article of this section.

Concrete Topping Compound, High-Traffic Service:

Acceptable Product: Marquee.

Characteristics: Composed of synthetic iron-oxide pigments, Portland cement, limestone, crystalline quartz, and natural organic materials; meeting performance requirements specified in SYSTEM DESCRIPTION Article of this section.

Color: Selected from full range of manufacturer's standard colors.

Color: _____.

Color: Specified in SCHEDULES Article of this section.

Concrete Curing Compound:

Acceptable Product: Mor-Cure.

Characteristics: Liquid curing compound supplied by manufacturer of concrete topping compound for use with high-traffic service concrete topping compound; water-soluble, self-dissipating.

Portland Cement: ASTM C 150, Type I; white color.

Sand: Ground marble composition, passing size number 20 sieve.

Water: Clean, potable; containing no contaminants which would impair appearance or performance of products in this section.

Bonding System:

Acceptable Product: Mortex PTA System.

Characteristics: Materials for bonding concrete topping mix to existing concrete substrates supplied by manufacturer of concrete topping compound.

MIXES

Proportion concrete topping materials in accordance with concrete topping compound manufacturer's instructions; addition of materials other than those specified therein is not permitted.

For application at temperatures below 45 degrees F, use hot water

in concrete topping mix; for application at temperatures above 90 degrees F, or application under windy conditions, use ice water in concrete topping mix.

Mix concrete topping materials in paddle-type plaster mixer in accordance with procedures specified in concrete topping compound manufacturer's instructions; add materials in specified order, maintaining specified mixing periods.

Test concrete topping mix prior to application, using viscosity cup supplied by concrete topping compound manufacturer; adjust mix, if required, to specified consistency in accordance with concrete topping compound manufacturer's instructions.

PART EXECUTION

EXAMINATION

Verification of Conditions: Test concrete substrate for correct condition of substrate for application of concrete topping.

PREPARATION

Protection of Adjacent Surfaces: Mask off adjacent surfaces to protect from corrosion by concrete topping mix.

Surface Preparation: Scarify concrete substrates to receive concrete topping, using nylon-bristle push broom immediately before application of concrete topping; scarify with single broom pass only, to avoid sweeping loose sand to surface of concrete substrate.

Surface Preparation: Prepare existing concrete substrates to receive concrete topping, using specified bonding system in accordance with manufacturer's instructions.

APPLICATION

Installation of concrete substrate is specified in Section 03300.

Apply concrete topping mix to concrete substrate when substrate surface shows water rise, but no deep depression, when walked on.

Apply concrete topping mix in two applications in accordance with concrete topping compound manufacturer's instructions, using one

of the following:

- Brush, supplied by concrete topping compound manufacturer.
- Sprayer, type recommended by concrete topping compound manufacturer.
- Stucco texture machine.

Maintain coverage of 300 square feet per unit of concrete topping compound mixed.

Trowel concrete topping mix, using trowel supplied by concrete topping compound manufacturer; perform trowelling in accordance with concrete topping compound manufacturer's instructions to achieve specified pattern, color uniformity, and levelness.

Nominal thickness of concrete topping application: 1/8 inch.

Apply specified concrete curing compound to finished high-traffic service concrete topping surfaces, using construction sprayer; ensure complete uniform coverage of surfaces.

CLEANING

Remove masking from adjacent surfaces.

PROTECTION OF INSTALLED PRODUCTS

Protect finished concrete topping surfaces during initial 72 hours of curing from frost and other inclement weather in accordance with concrete topping compound manufacturer's instructions.

Protect finished concrete topping surfaces during initial 12 hours of curing from rain by covering surfaces if rain is predicted; if covering surfaces with plastic film, remove film as soon as probability of rain, or initial 12 hour period, has ended to prevent non-uniform curing of concrete topping.

Allow no traffic on concrete topping for a period of 48 hours after completing trowelling.

Allow only light foot traffic on concrete topping for a period of 14 days after initial 48 hour curing period.

Using locations where concrete topping has been applied for storing or placing waste containers, storage containers, or construction materials is not permitted.

SCHEDULES

Pool Area: Standard-traffic service concrete topping; _____
color.

Patio Area: High-traffic service concrete topping; _____ color.

Walkways: High-traffic service concrete topping; _____ color.

END OF SECTION