



**DEVELOPMENTAL SPECIFICATIONS
FOR
STRUCTURAL CONCRETE COATING**

**Effective Date
October 17, 2023**

THE STANDARD SPECIFICATIONS, SERIES 2023, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

23015.01 DESCRIPTION.

Following concrete surface preparation, apply concrete coating(s) of the type(s) specified surfaces designated in the plans. Contractor shall submit coating material information for approval, protect surrounding areas, and apply coating(s) in accordance with these specifications.

23015.02 MATERIALS.

- A.** Use coating materials of the type specified in plans. Submit products and suppliers to Engineer for approval prior to material acquisition and application. Coating shall be warranted by manufacturer as appropriate material for the specified application described in the plans.
- B.** Provide coating materials in sealed, original containers properly marked and labeled to allow verification with applicable material safety data sheets, application precautions, and instructions. Labeling shall include manufacturer's name, type of material, brand name, gloss designation, date of manufacture, shelf life, contract or order number under which the material has been ordered, lot and batch numbers, quantity, handling, thinning, and application instructions.
- C.** Submittals: At least 3 weeks prior to commencing production coating of specified surfaces, provide Product Data Sheets, and MSDS for coating products including primers, thinners, and cleaning agents.

Provide written application instructions from manufacturer, which includes recommended application equipment, application methods and rates, surface preparation requirements, and other applicable manufacturer's recommendations.

Submit paint color samples on 8.5 inch by 11 inch draw-down cards for each color specified in the plans. Deliver samples to Iowa DOT, Bridges and Structures Bureau, Attn: Aesthetics Coordinator, 800 Lincoln Way, Ames, IA 50010 for review and approval prior to ordering materials.

- D.** An applicator with at least 3 years' experience applying similar coatings to concrete surfaces shall apply the product.

23015.03 CONSTRUCTION.

A. Pre-application Surface Preparation.

Follow surface preparation requirements listed in the plans and specifications.

If no surface preparation requirements are specified in the plans, follow coating product manufacturer's recommendations for surface preparation. If coating product literature is incomplete regarding minimum concrete cure time, surface preparation, equipment requirements, surface readiness testing, or for other questions regarding surface preparation, obtain assistance from a qualified coating product manufacturer's representative prior to beginning surface preparation.

Protect the public, passing vehicles, the bridge, nearby waterways and vegetation, and all surfaces from harm during surface preparation. Do not solvent-clean, blast-clean or acid-etch galvanized or painted metal surfaces. Following surface preparation, remove residue and other debris related to cleaning process and leave work area broom clean.

B. Project Conditions.

Coordinate schedule for concrete coating application with earthwork, back filling operations, and other adjacent construction. Delay adjacent plantings until concrete coating application is completed. Coordinate work to allow coating application to proceed without interference from other trades, without risk of contamination of coating by airborne particles or other debris, and without risk of coated surface abrasion from equipment or personnel.

C. Protection of Surfaces and Surrounding Property.

Use protective coverings, shields, or masking as necessary to protect surfaces not designated to receive coatings. When tarps are used, firmly secure to avoid being dislodged by wind. If tarps become dislodged, stop work immediately and secure. When sustained winds are 40 mph or above, drop and secure tarps. Maintain protective coverings during entire period work is being performed and remove coverings upon completion of work.

Use diligence to ensure vehicles, structures, buildings, vegetation, equipment, hardware, fixtures, and other surfaces not designated to receive concrete coating are protected from overspray, drips, spillage, and other damage. Remove overspray or drips on adjacent surfaces in accordance with manufacturer's recommendations. Contractor shall be responsible for cleanup of spills. Cleanups shall be performed at no additional cost.

When applying coating adjacent to occupied buildings, coordinate shutdown of air handling equipment with building owners throughout application process. Cover air intakes and air conditioning vents, which could carry odors or fumes into buildings. Vents shall remain covered and air handling equipment shall remain inactive until surfaces are visibly dry or odor has dissipated. Maintain adequate ventilation when working in confined areas.

D. Product Application.

Following completion of surface preparation, obtain Engineer's approval to proceed prior to beginning concrete coating application.

If coating product literature is incomplete regarding any part of product application process, equipment requirements, surface priming, allowable conditions, or for any other questions regarding product application, obtain assistance from a qualified coating product manufacturer's representative prior to beginning coating application.

Surfaces to be coated shall be clean, dry, and free of oil, dirt, grease, form release agent, efflorescence, or other substance which inhibits penetration and adhesion of coating. Surface readiness for coating shall be in accordance with manufacturer's recommendations, including allowable moisture content, surface profile, PH level, etc.

If coating manufacturer recommends certification of coating applicators, personnel directly involved in coating application shall be certified according to manufacturer's recommendations.

Apply using brush, roller, or sprayer according to coating manufacturer's recommendations. Total number of coats applied shall be according to manufacturer's recommendations, but with a minimum of two coats of topcoat color applied. Follow manufacturer's recommendations for drying time between coats.

Apply coating only during dry conditions. Follow manufacturer's recommendations for acceptable atmospheric conditions such as allowable air and concrete temperatures, humidity, dew point, wind, sun exposure, potential future precipitation events, etc., both at the time of application and for entire curing period established by manufacturer.

Do not dilute material except as allowed by manufacturer for the specified application. Follow manufacturer's recommendations for priming, thinning, mixing, and pot life.

1. Spray Application.

Spray application equipment and methods shall be according to coating manufacturer's recommendations. Follow manufacturer's recommendations for total minimum dry film thickness.

2. Brush and Roller Application.

Brushes and roller materials and methods used shall be according to coating manufacturer's recommendations. Follow manufacturer's recommendations for total minimum dry film thickness.

E. Inspection.

Engineer will inspect work to verify that it is in accordance with the requirements of this specification. Contractor shall facilitate this inspection as required, including providing Engineer with advance notice of scheduled work, allowing ample time for inspections and access to work. Inspections may include, but are not limited to, surface cleanliness, coating application, curing, touchup, and final appearance. Contractor shall not proceed with subsequent phases of work until Engineer has approved preceding phase.

No drips or runs shall be evident in the coated surface. Coating coverage shall be complete and consistent across the entire coated surface. Correct surface defects to the satisfaction of the Engineer.

The inspection by the Engineer does not relieve Contractor of responsibility to comply with requirements of this specification. Contractor shall furnish, until final acceptance of concrete coating, equipment and instrumentation needed for self-inspection of the work to remain in compliance with manufacturer's recommendations and these specifications.

23015.04 METHOD OF MEASUREMENT.

Square yards shown in the contract.

23015.05 BASIS OF PAYMENT.

- A. Payment will be the contract unit price per square yard for the Structural Concrete Coating.
- B. Payment is full compensation for furnishing labor, equipment, and materials used to prepare and test surfaces, protect surrounding property, and apply coats of the concrete coating.