



Section 07 16 13

Polymer Modified Cement Waterproofing

SIKA SPECIFICATION NOTE: *This guide specification includes test methods, materials and installation procedures for Sikagard® Flexcoat, Sikagard® Flexcoat EM, Sikagard® Flexcoat ATC, Sikagard®-620 Flexcoat CC. This guide specification should be adapted to suit the needs and conditions of individual projects. It is prepared in CSI Master Format and should be included as a separate section under Division 3 - Concrete.*

Part 1 - General

1.01 Summary

This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less the complete Work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their Work and coordinate overlapping Work.

1.02 System description

This specification describes the coating of substrates with a non-vapor barrier, protective waterproofing, polymer-modified, portland cement slurry. This waterproofing can be top coated with an aesthetic acrylic coating.

1.03 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Store and apply materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Safety Data Sheets (SDS) for complete handling recommendations.

1.04 Delivery, Storage, and Handling

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.

1.05 Job Conditions

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 50°F (10°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.06 Submittals

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets (PDS), and appropriate Safety Data Sheets (SDS).
- B. Submit copy of Certificate of Approved Contractor status by manufacturer.

1.07 Warranty

Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

Sikagard® Flexcoat, Sikagard® Flexcoat EM, Sikagard® Flexcoat ATC, Sikagard®-620 Flexcoat CC, as manufactured by Sika® Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

- A. Polymer-modified portland cement coating:
 - a. Component "A" shall be a liquid polymer emulsion of an acrylic co-polymer base and additives.
 - b. Component "B" shall be a blend of selected Portland cements, specially graded aggregates, and admixtures to control setting time and handling.
 - c. The ratio of Component A: Component B shall be: 2.5 Gallons of liquid: 55 Pounds of the powder
 - d. The material shall be non-combustible before, during or after cure.
- B. Acrylic Top Coat (ATC): This single component shall be an acrylic based top coat , packaged in 5 gallon pail. The architect shall choose from the option of colors available from Sika Corporation.
- C. Clear Coat (CC): This single component shall be an acrylic based top coat , packaged in 5 gallon pail. The architect shall choose from the option of colors available from Sika Corporation.
- D. Embedding Mesh (EM): should be made of polypropylene and shall be available in the 10" wide rolls.

2.03 Performance Criteria

A. Properties of the mixed Polymer-modified portland cement coating:

1. Yield	250 ft ² /unit
2. Application Thickness	30 mils coat
3. Application Temp	> 50°F (10°C)
4. Bond strength (ASTM C-882 modified)	515 psi
5. Absorption (Weight gain by 4" coated concrete cube after 21 days water immersion)	<2%
6. Weathering (ASTM G23)	60 cycles - No visible degradation
7. Spot Open Test (ASTM D-1308)	No softening or attack
8. Compressive Strength (ASTM C-109)	2,440 psi
9. Tensile Strength (ASTM C-190)	430 psi
10. Elongation (ASTM D-412)	12%
11. Shore Hardness (ASTM D-2240)	No cracking or detachment
12. Water Vapor Permeability (E-96)	1.96 perms/in

B. Properties of the Acrylic Top Coat

1. Yield	300 ft ² /gal/coat
2. Dry film thickness	2.5 mils
3. Color	Ivory Cream, Sandpiper Beige, Provincial Tan, Adobe, Toffee, Spanish Tile, Redwood Tile, Speedway Gray, Bright Gray, Dodge City Tan, Fired Brick, and Slate Green
4. Gloss 60 Gloss Meter	90+
5. Flexibility	Excellent
6. Weather	Excellent
7. Abrasion	Excellent
8. Dry to touch (77°F)	1 hr
9. Recoat (77°F)	4 hrs
10. Traffic (77°F)	24 hrs
11. Color Retention	No fading or deleterious effect. Atlas Twin-Arc Weatherometer, 20 mins. Cycle; 17 mins. Dry - 3 min., Wet - 300 hrs.

Environment	Immersion	Splash & Spillage	Exterior Weathering
Weak Acid	NR	LR	R
Alkali	LR	R	R
Solvent	NR	NR	NR
Salts	R	R	R
Water	R	R	R
R - Recommended NR - Not recommended LR - Limited recommendation			

C. Properties of the Clear Coat

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|------------------------|-------------------------------|
| 1. Yield | 300 ft ² /gal/coat |
| 2. Color | Gloss and Satin finishes |
| 3. Weather | Excellent |
| 4. Abrasion | Excellent |
| 5. Dry to touch (77°F) | 30 min |
| 6. Recoat (77°F) | 1 hrs |
| 7. Traffic (77°F) | 4 hrs |

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45 - 55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

Substrate must be clean, sound, and free of surface contaminants. Remove dust, laitance, grease, oils, curing compounds, form release agents and all foreign particles by mechanical means. An open-textured, sandpaper-like substrate is ideal. Substrate shall be in accordance with ICRI Guideline No. 310.2 for coatings, minimum CSP-3. All surfaces must be Saturated Surface Dry (SSD), with no standing water at time of application.

3.02 Mixing and Application

- A. Mixing: Under normal circumstances, full quantities of both components are mixed together, a slurry consistency will result. For a trowelable consistency adjust liquid accordingly. Mix in a clean container by slowly adding the powder component to the liquid component and mixing with a slow speed (400-600 rpm) drill and mixing paddle.
- B. Application: Apply with magic trowel, notched trowel or stiff bristle brush. Work material into the prepared substrates, filling all pores and voids.

For brush grade: Apply first coat with horizontal brush strokes and leave to harden (approx 4 hours). Apply second coat with vertical brush strokes.

For trowel consistency: Apply the first coat with a notched trowel and leave to harden (approx 4 hours). Apply the second coat with a flat trowel.

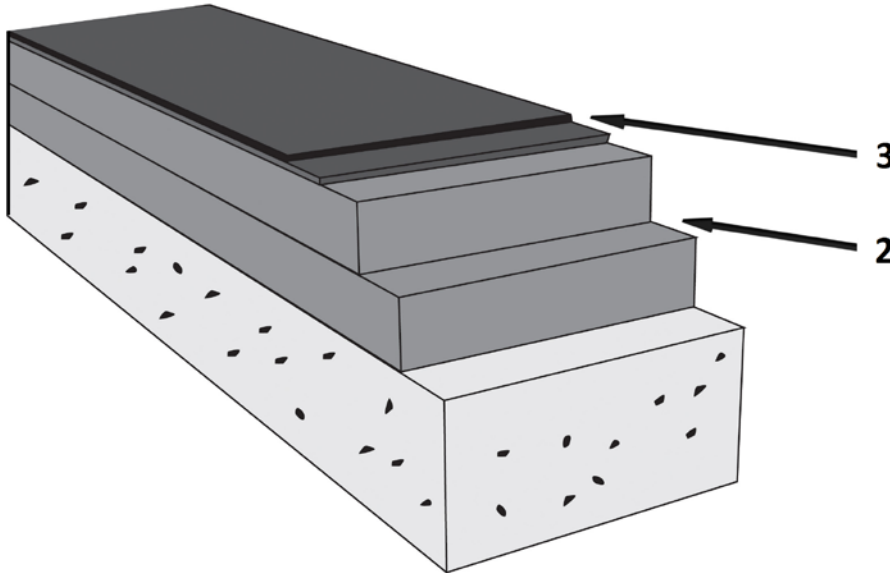
For rolled application: Use a magic trowel application to spread the product. Backroll the second to achieve a texture.

- C. When applying the coating, never stop the application until the entire surface has been coated. Always stop application at an edge, corner, or joint. Never let a previously coated film dry; always coat into a wet film. Always apply the coating at a 45° angle to an edge, corner, or joint.
- D. Adhere to all limitations and cautions for the polymer-modified cement coating in the manufacturer's printed literature.

3.02 Cleaning

- A. The uncured polymer-modified portland cement coating can be cleaned from tools with water. The cured polymer-modified portland cement coating can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

Sikagard FlexCoat System



1. Surface should be clean, dry, sound and free of laitance.
2. Apply 2 coats of Sikagard® Flexcoat at 30 mils per coat (~50 ft²/gal or 250 ft²/unit).
3. Once dry, apply Sikagard® Flexcoat ATC at 2-3 mils (300 ft²/gal). Two coats are recommended.
4. Once dry, apply Sikagard®-260 Flexcoat CC at 2-3 mils (300 ft²/gal) for a gloss or satin finish.

Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071

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