

KonCote Surface Overlay System - (Exterior Horizontal Surfaces)

Manufacturer's Specifications

A Surface Overlay System for Exterior Surfaces

PART I - GENERAL

1.01 SUMMARY

This document contains the Manufacturer's requirements for the proper design, use, and installation of the KonCote Surface Overlay System (Exterior). The KonCote surface coating consists of KonCote Regular Mix, a high early strength concrete compound with specially- blended Agents; KonCote Bonding Agent, a high-solids, acrylic polymer resin; KonCote Colorant (if desired), a liquid dispersion colorant; KonCote Sealer, a solvent-based, acrylic-emulsion sealer.

1.02 REFERENCES / PERFORMANCE

Per AC 39, "Acceptance Criteria for Exterior Horizontal Surfaces"

1. ASTM C642 Water Absorption
2. ASTM D2299 Chemical Resistance
3. ASTM C348 Flexural Strength
5. ASTM C190 Tensile Strength
6. ASTM C882 Shear Bond Adhesion
7. ASTM C994 Abrasion Resistance
8. ASTM M11 810B Mildew Resistance
9. ASTM C596 Shrinkage

1.03 DEFINITIONS

- A. **Installer:** An independent KonCote installer.
- B. **KonCote:** Registered trademark for National Wall Systems, Inc. products.
- C. **National Wall Systems, Inc.:** Distributor of all KonCote products.
- D. **Substrate:** The exterior surface to which KonCote materials are applied.

1.04 DESCRIPTION

A. KonCote Surface Overlay System: (Exterior Horizontal Surfaces) is a cementitious coating consisting of a Regular mix, KonCote Bonding Agent, and acrylic sealer.

B. Design Requirements:

1. Acceptable surfaces for the KonCote Surface Overlay System include surfaces consisting of concrete, masonry, Hardiboard, DuRock, aggregate, steel, and similar surfaces in suitable condition for application. Contact National Wall Systems, Inc., for recommendations regarding other products, including machine-troweled concrete finishes, which may need additional surface preparation.
2. Any surface determined to be not structurally sound shall be corrected or removed before the application of the KonCote Surface Overlay System begins. Remedial work to the surface shall be documented and approved by the Installer before application begins.
3. Form release agents, sealers, or surface treatments: Surface shall be clean and free of any type of form release agent, petroleum based agents, or any coatings that may inhibit or prevent the proper adhesion of the KonCote Surface Overlay System to the surface. Surface should be free from spalling, oxidized or UV damaged coatings, loose paint, sealers or stains, or any other applied coating materials with doubtful adhesion. If any question as to the integrity of the application surface exists, consult National Wall Systems, Inc., Inc. for recommendations on testing or determining the surfaces suitability for application.

C. Performance Requirements: At minimum, the surface should be tested as follows:

1. Water-Absorption Resistance: ASTM C642
2. Chemical Resistance: ASTM D2299
3. Tensile-Strength: ASTM C190
5. Freeze-Thaw Resistance: ASTM C666

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6. Water Resistance: ASTM D2247

9. Accelerated Weathering: ASTM G23

1.05 SUBMITTALS

A. Literature: Submit name of Surface Finish System company that is being used, and the literature on the exact products that are to be used. Submit with the literature of the product's information including current MSDS sheets.

B. Samples: Prepare two 3' x 3' areas or suitable samples for review by the Architect. Do not proceed with Finish System until Architect approves the sample area. Leave one sample on jobsite and one sample protected with the Architect.

1.06 QUALITY ASSURANCE

A. Manufacturer: All materials will be manufactured by MCII and sold and distributed by National Wall Systems, Inc., 1111 Highway 25 N, Buffalo, MN 55313; Telephone 877-684-1716; Fax 763-682-4762; Website www.nationalwall.com

B. Installer: Only craftsmen who have a demonstrable skill in the work covered under this specification shall be contracted. A firm with a minimum of one (1) year's experience in the application of materials similar to those specified herein shall be used.

1.07 DELIVERY, STORAGE, AND HANDLING

A. All materials shall be delivered in original, unopened containers. Upon arrival, all materials should be inspected for any possible shipping damages.

B. All materials used on the project shall be stored in a place designated by the Owner or the Architect. Such storage place shall be kept neat, clean, dry and between 40°-90°F and all damage thereto or to its surroundings shall be made good by the Contractor.

C. All used waste or trash must be removed from the building or site location each night, and every precaution taken to avoid the danger of fire.

D. The Installer shall protect surfaces and objects outside the building, as well as the grounds, lawns, shrubbery, and adjacent properties against damage. The Installer shall hold himself responsible for damage to adjacent surroundings.

E. At completion of work, the Installer shall remove from the premises all debris created by him; he shall remove all material splatters and leave his part of the work in a clean and finished condition.

1.08 PROJECT CONDITIONS

A. If applying below 40°F, check Manufacturer's recommended procedure.

B. Installer will need access to electric power and clean water at the installation area.

1.09 WARRANTY

A. Product Warranty: National Wall Systems, Inc., (NWS) warrants to Installer that the Products therefore shall be free from defects in material and workmanship for a period of one year from the date of shipment to Installer, and NWS's liability shall be limited solely to the replacement of defective materials, as the case may be, which are proven to be defective upon NWS's inspection. For further warranty details, please contact NWS.

B. Installation Warranty: Issued by the independent Installer to his retail customer and normally for a period of one (1) year. Additionally, an Installer may, at his option, issue an extended warranty and / or an annual maintenance agreement. KonCote products must be installed in accordance with the Manufacturer's current, published specifications, product instructions, and installation procedures. Each installation is solely the responsibility of the Independent KonCote Installer.

Please contact National Wall Systems, Inc., Inc. for additional information.

1.10 Maintenance

A. Liquid or powdered laundry detergents (without bleach) in a normal solution of one cup detergent to five gallons of water.

B. For resealing or other maintenance, please contact the Installer.

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PART II - PRODUCT

2.01 MANUFACTURER

All materials and components of the KonCote Surface Overlay System: Exterior Horizontal Surfaces shall be purchased directly from National Wall Systems, Inc. or authorized dealer.

2.02 MATERIALS

- A. Regular Mix - Portland cement and proprietary Agents
- B. Bonding Agent - Acrylic polymer resin
- C. Colorant - Liquid dispersion colorant.
- D. Sealer - Acrylic polymer emulsion sealer

2.03 COMPONENTS

Base Coat and Finishing Coats are created from the same components.

A. KonCote Regular Mix

1. Concrete compound with a blend of special cements and Agents.
2. Bonds securely to properly prepared masonry and/or concrete surfaces.
3. Used to create protective surface finish for masonry and/or concrete surfaces.
4. Non-shrinking.
5. Used in thicknesses of 1/8" to 3/4".
6. Mixed on site with KonCote Bonding Agent (wet).
7. Available in 2 main finish types, KonCote Regular (fine) and KonCote G16 (textured).

B. KonCote Bonding Agent

1. High-solids, water-soluble, acrylic polymer compound used specifically for modifying a Portland cement composition such as Regular Mix.
2. Used to provide a superior bond to masonry and/or concrete surfaces.
3. Mixed with Regular Mix on site.

C. Sealer

1. A penetrating, acrylic emulsion formulated with special acrylic polymers and quick evaporating solvents that dry to a hard, very durable polymer film.
2. Available in clear or custom colors also available from NWS.
3. Resistant to chemicals, acids, salts and detergents.
4. Provides a strong protective finish that resists cracking, chipping, peeling and mildew.
5. Resistant to freeze-thaw cycles.
6. Non-flammable and non-toxic.

PART III EXECUTION

3.01 EXAMINATION

Before installation of the KonCote Surface Overlay System: Exterior Horizontal Surface System, the Installer will ensure that the surface is in accordance with the guidelines listed in Section 1.04.B

3.02 SURFACE PREPARATION

- A. If previous coatings of paint, glue or varnish, are present, they must be removed by shot blasting, electric disk grinder or an appropriate removal product. If grease or oil are present, they must be removed with an appropriate removal product.
- B. Ensure that no utility lines are present within the surface area.
- C. Surface Cracks:
 1. Determine cause of cracks (shifting surface, lack of expansion joints, surface material failure, substrate deterioration, etc).
 2. For cracks wider than 1/4", wear protective goggles and saw-cut length of crack at least 1/2" deep to open and penetrate bottom of crack into slab to ensure crack repair material has proper bonding capability.
 3. For cracks up to 1/4" wide, wear protective goggles and saw-cut length of crack at least 3/4" deep to open and penetrate bottom of crack into slab to ensure crack repair material has proper bonding capability.

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4. If crack is wider than 3/8" and through slab, fill crack from bottom of slab to within 1" of surface with Regular mixture prior to crack repair; if crack is 1/8" to 3/8", fill entire crack from top to bottom of slab with crack repair material such as KonCote Crack Repair and coarse sand. Allow mixture to harden.

5. For aggregate surfaces, saw out cracks as described and completely fill with crack repair material along with coarse sand, and then level aggregate surface with skim coat of Regular mix before proceeding.

D. Surface Cleaning:

1. Apply appropriate undiluted cleaning agent containing ethylene glycol monobutyl with hand sprayer over entire surface. Allow to penetrate and dissolve any film contaminants for approximately 5-10 minutes (Do not allow to dry on surface.)

2. After scrubbing the surface with synthetic brush or broom to remove deep dirt and contaminants, thoroughly rinse the surface before cleaning agent dries on the surface.

3. If mildew is present, chlorine bleach shall be applied to those applicable areas after cleaning agent is applied.

4. For very smooth concrete or other nonporous surface, a 15-second surface wash with muriatic acid to etch the surface is recommended using a 6 to 1 mix or stronger before thoroughly rinsing the surface. (Note: Concrete must be at least 7 days old prior to muriatic acid washing).

5. Low spots in the surface which collect water should be marked or outlined so they can then be parged and leveled with a Regular Mix skim coat.

6. Use electric blower to remove leaves, debris or dust prior to parging or leveling (Note: Dust left on the surface prior to the Regular Mix skim coat or texture coat applications can cause these applications to later delaminate).

7. Ensure that parged areas and remaining surfaces are thoroughly dry before proceeding.

3.03 INSTALLATION

A. Skim Coat Application: For concrete, aggregate or other surfaces that are spalled (deteriorated & "peeled"), delaminated (a layer of the surface has come up), or have had crack repair applied, a skim coat of Regular Mix over the entire surface is needed to provide a smooth surface later for the Regular Mix texture coat application (Note: Do not apply on new concrete which has less than 7 days cure time).

1. Stir Regular Mix and Bonding Agent together as recommended by manufacturer.

2. Low spots or fill areas to be leveled with a thick coat (1/4") of Regular Mix should first receive a thin, liquid coating of Bonding Agent and allowed to dry prior to the Regular skim coat application. Do not apply over 3/4" thickness of Regular Mix without allowing it to fully set before applying further fill. Wet-sponge applications over 1/4" thickness to avoid shrink cracking.

3. Surrounding areas that are not to be resurfaced with Regular Mix should be taped and covered with plastic or paper.

4. Tape all expansion joints and newly applied "control" joints with adhesive tape. (Remove tape after skim coat application; re-tape and then remove again after texture coat application and before sealer application).

5. If a two-color pattern is desired, add correct quantities of Colorant to the Regular skim mixture to achieve desired color for grout lines in the (tile, brick or other) two-color pattern.

6. Pour Regular Mixture onto surface and spread over entire surface area with a squeegee, or trowel to minimum thickness necessary to level and smooth over spalling or surface deterioration. When skimming the entire surface, it is more important to level the low areas and properly cover the deteriorated areas rather than measurably adding to the high or smooth areas.

7. Before skim coat dries, use hand-trowel to remove excess skim build-up along surface edges.

8. When skim coat is dry, scrape or rub surface to remove any ridges or burrs left by squeegee or trowel procedure.

9. Remove dust with an electric blower.

B. Texture Coat Application:

This will create the visible surface to the end user and should be applied with extreme care. Do not apply on new concrete which has less than 7 days cure time.

1. Stir Regular Mix and Bonding Agent together as recommended by manufacturer; add Regular Colorant (if desired) and restir.

2. If a two-color pattern is desired, also add correct quantities of Colorant to Regular Mixture to achieve proper color for tiles, bricks or other configurations in a two-color pattern.

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3. For surfaces that require a smooth finish, steps (4) through (8) below can be eliminated. (Note: A smooth-finish surface can be hand-troweled, sprayed, or applied with a short napped roller, or squeegee with one or two light applications and left as is).
4. Use an air compressor with hopper gun attachment to apply Regular mixture. Set the compressor at 5-10 PSI, and the hopper gun nozzle on the largest spray orifice.
5. Pour mixture into hopper and spray a consistent pattern of small cones or peaks 1-2 inches apart.
6. Within minutes, as sprayed mixture begins to harden, hand-trowel finish with steel hand-trowel in same or alternate directions, thereby creating the desired textured appearance.
7. Allow finish to completely harden and thoroughly dry.
8. Scrape or rub surface to remove any peaks or burrs.
9. Remove previously applied adhesive tape from expansion joints.
10. Use an electric blower to remove dust.
11. Apply self-leveling, colored caulk to all existing or newly installed control or expansion joints.
12. Ensure that finish is smooth and dry before applying KonCote Sealer.

C. Two-Color Pattern Application:

This procedure requires two applications of Regular Mix (skim coat and texture coat).

1. Stir Regular Mix and Bonding Agent together as recommended by manufacturer.
2. Add correct quantities of Colorant to Regular mixture to achieve proper color for grout lines in the tile, brick or other two-color pattern configurations.
3. Pour mixture onto surface area and spread a Regular mixture, skim coat over entire surface area with a squeegee or hand trowel to a minimum thickness necessary to provide a consistent grout line color (normally 1/16" on smooth surface; greater if leveling is required).
4. When skim coat is dry, scrape or rub surface to remove any ridges or burrs left by squeegee or hand-trowel application.
5. Use electric blower to remove dust.
6. Using an airless paint sprayer, apply one to two very light mist coats of KonCote Sealer necessary to achieve desired grout line color which is compatible with the Colorant used in the skim coat mixture; allow to thoroughly dry (1-2 hours at 72°F).
7. Using a mechanical measuring tape or premeasured Adhesive Pattern Tape, mark off grout lines to create desired size of tiles or bricks; or measure surface for installation of a Pattern template.
8. Use reinforced adhesive tape and carefully apply to marked off grout lines; or apply pattern template to the surface.
9. Be sure that tape or template is applied evenly and completely adheres to surface.
10. Follow step (1) above and mix more Regular mixture for the texture coat application; add correct quantities of Colorant to Regular mixture for proper coloration of bricks, tiles or other configurations in the two-color application.
11. Apply mixture by hand-trowel, sprayer, or short napped roller depending upon type finish desired.
12. Within minutes, as the applied mixture begins to harden, hand-trowel a finish on the sprayed application with steel hand trowel in same, or alternate directions creating the desired texture or lace appearance.
13. For brick applications, use a small whisk broom and broom finish the brick surface pattern for a brick-textured look.
14. Use airless paint sprayer to apply 2-3 coats of KonCote Sealer to finished pattern that is compatible with the Colorant used in the texture coat mixture; allow final sealer coat to dry (30-40 minutes at 72°F) and then remove tape while surface is still damp to ensure even breakage along the tile, brick or other pattern edges.
15. If a pattern template was used, do not remove template after broom whisking the brick or tile surface pattern; allow surface to thoroughly dry; apply two coats of KonCote Sealer with airless sprayer; allow Sealer to thoroughly dry and then remove template; if necessary, touch up any bleed through into grout lines with the color used for grout lines.
16. After textured finish and KonCote Sealer are completely dry, sweep, rub and blow surface and pattern edges free of dust and loose particles remaining from tape or template removal.

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17. Apply a final, light coat of KonCote Clear Sealer to entire surface after preceding step. This will provide additional protection as well as darken and blend the non-sealed edges of the tiles or bricks that were partially covered by the use of the template or tape.
 18. Inspect surface carefully to ensure that finish is smooth and dry. Leave ample ventilation for 5-6 hours.
- D. KonCote Sealer Application (Solvent Base): Ensure proper ventilation during application.
1. Use Solvent Based sealer, such as KonCote Sealer SB, that complements the Colorant previously used in Regular Mix applications.
 2. Cut in edges of surface area with two-inch brush.
 3. Use airless paint sprayer or roller to apply stain sealer to remaining surface, including previously caulked expansion joints.
 4. Apply 2-3 coats of KonCote Sealer by roller or three coats by airless paint sprayer; second or third coat must be completely dry before applying additional coat of sealer.
 5. For additional non-skid features, add shot blasting sand or SkidTex onto first color coat of KonCote Sealer.
 6. Apply light, additional coat of Clear Sealer on driveways and high traffic areas.
 7. Allow minimum 4 hours dry time at 72°F before surface contact with rain, dew, or freezing temperatures.
 8. Allow light foot traffic the first day after 6-12 hours at 72°F. Wait 1-2 days at 72°F for heavy foot traffic. Wait three days at 72°F before setting potted plants and furniture, or allowing vehicular traffic.
 9. Ensure that ample ventilation remains during initial 4 hours dry and cure time.

3.04 FIELD QUALITY CONTROL

- A. Each installation is solely the responsibility of the Installer.
- B. National Wall Systems, Inc., Inc. assumes no responsibility for on-site inspections or application of its products.

3.05 CLEANING

- A. Surrounding areas that are not to be surfaced with Regular Mix should be taped off and covered with plastic or paper.
- B. The Installer shall protect surfaces and objects outside the building, as well as the grounds, lawns, shrubbery, and adjacent properties against damage. The Installer shall hold himself responsible for damage to adjacent surroundings.
- C. At completion of work, the Installer shall remove from the premises all surplus materials and all debris created by him; he shall remove all material splatters and leave his part of the work in a clean and finished condition.

3.06 PROTECTION

- A. The KonCote Surface Overlay System: Exterior Horizontal Surfaces shall be protected from damage and exposure to contaminants until fully cured.

DISCLAIMER

KonCote products must be installed in accordance with the manufacturer's current, published specifications, product instructions, and installation procedures. Each installation is solely the responsibility of the Independent KonCote Installer. Please contact National Wall Systems, Inc., for additional information.

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