

SECTION 32 17 23 – ECOPATH – SKIDGUARD – LUMALINE - CSI

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Nonskid Pedestrian Path and Vehicular Pavement Markings.

1.2 RELATED REQUIREMENTS

- A. 03 30 00 - Cast in Place Concrete
- B. 32 13 13 - Concrete Paving: Concrete sidewalks.
- C. 32 17 23 - Pavement Markings.
- D. 07 18 16 - Vehicular Traffic Coatings

1.3 SUBMITTALS

- A. Product Data: Provide product criteria, characteristics, and required details.
- B. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- C. Warranty: Submit warranties upon completion of work and ensure forms have been completed in Owner's name within 30 days of scope completion.
- D. Maintenance Data: For users operation and maintenance of system including:
 - 1. Methods for maintaining system's materials and finishes.
 - 2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.
- B. Store in temperature ranges of 25 - 90 degrees F.

1.5 WARRANTY

- A. Installation Warranty: Contractor shall correct defective Work within a 2 year period after Date of Substantial Completion.



- B. Manufacturer Warranty: Provide 2 year warranty for pavement markings for failing to maintain more than 95% of their surface installation/adhesion.
 - 1. Exception: Where such failures are the result of studded tires, snow chains, blade or rotary snow removal or other mechanically abrasive or intrusive devices.
 - 2. Exception: Where surface coloring agents, sealers, bond breakers or other barriers to adhesion have been applied to concrete or asphalt substrate.

PART 2 - PRODUCTS

2.1 DESCRIPTION

- A. Surface applied non-skid pavement markings used to depict bike, bus and pedestrian traffic lanes.

2.2 MANUFACTURERS

- A. Specification is based on products listed by Vanguard ADA Systems: www.VanguardOnline.com.
 - 1. Substitutions for products by manufacturers other than those listed above: See Section 01 60 00 - Product Requirements.

2.3 NONSKID PATH AND PAVEMENT MARKINGS

- A. Surface application criteria:
 - 1. Basis of Design Product: EcoPath by Vanguard ADA Systems. Comparable and substituted products will be judged based on the following performance criteria, features, warranty, and qualifications.
 - 2. Performance Criteria:
 - a. Substrate Requirements:
 - 1) Portland Cement:
 - a) Strength: 3,000 PSI minimum.
 - b) Finish: Medium broom finish or coarser profile.
 - c) Cure: 20 day minimum.
 - 2) Asphalt:
 - a) Compaction: 95% minimum.
 - b) Finish: Rolled, compacted, smooth.
 - c) Cure: 20 day minimum.
 - 3) Metal:
 - a) Surface Profile: Light sandblast or mechanical abrasion.



- 4) Wood:
 - a) Surface Profile: Light sandblast or mechanical abrasion.
- b. UV Resistance: 99% minimum Fade Resistance and Color Retention in accordance with ASTM G155.
- c. Chemical Resistance: Tested for 7 days.
 - 1) Road Salts: no effect.
 - 2) Anti-freeze: no effect.
 - 3) Diesel fuel: no effect.
 - 4) Gasoline: no effect.
 - 5) Transmission fluid: no effect.
 - 6) Motor oil: no effect.
- d. VOC: 25 g/l maximum. Tested in accordance with ASTM D2205.
- e. Water Absorption: Maximum 0.5%. Tested in accordance with ASTM D570.
- f. Smoke Development: Pass. Tested in accordance with EN ISO 9239-1.
- g. Flame Spread: Less than 150 mm. Tested in accordance with EN ISO 11925-2.
- h. Shore Hardness: Shore Durometer, A-1, 80 minimum after 24 hours. Tested in accordance with ASTM D2240.
- i. Tracking: None. Tested for 32 minutes maximum in accordance with ASTM D711.
- j. Viscosity: 6000-12000 cps ASTM D2196 - Brookfield #7 spindle @20 rpm, 77 deg F
- k. Color: Red, Green, Black, White (luminescent: "LumaLine") and derivative colors
Seamless installation. Adhesive, sealants or mechanical fasteners not required.

(Most current testing data found at: www.vanguardonline.com/downloads)

2.4 ACCESSORIES

A. Abrasive Additive:

- 1. Sand: 30 - 60 grain size clean dry sand.
- 2. Glass Beads: Glass Beads: AASHTO M 247, Type 1 or locally available alternate.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify surface is free of surface applied sealers, coloring agents, or other materials detrimental to surface bond.
- B. Verify existing conditions meet manufacturer's requirements before starting work.
- C. Verify surface temperature is between 35 degrees F and 88 degrees F.



3.2 PREPARATION

- A. Prepare surfaces to receive work in accordance with manufacturer's instructions.
- B. Grind or abrade to remove surface applied sealers, coloring agents, oils, bond breakers, or any surface applied or infused materials that will cause rejection of adhesion and provide required surface profile.
- C. Broom or air sweep clean surfaces free of debris, vegetation and material impacting adhesion.
- D. Provide completely dry surface, with moisture content not exceeding 6%.

3.3 INSTALLATION

- A. General: Install all materials in accordance with manufacturer's instructions based on conditions present.
- B. Pathway / Vehicular Coatings:
 - 1. Ensure area is clean and dry and free of oils, chemicals or other adhesion barriers.
 - 2. Fill voids as required with approved Vanguard material.
 - 3. Mask off all areas to be coated, with tape, ensure all edges are properly sealed to insure no bleeding of liquid applied products.
 - 4. Mix material in accordance with manufacturer's instructions, based on temperature ranges and desired set times. Mix thoroughly and throughout container for minimum of 2 minutes. Catalyst volumes are temperature sensitive. Standard quantities are 12 ounces by volume (1.50 U.S. "cups") per 4 gallons of EcoPath or SkidGuard liquid materials at 70 degrees F. More if temperatures fall, less if they rise. Adjust for curing times as needed.
 - 5. Pour material on surface in appropriate amounts, rolling in one direction until evenly placed.
 - 6. Roll in the opposing direction ("cross roll") until all voids and all surfaces have been evenly and completely coated.
 - 7. Immediately (within 10 minutes of first "pour"), while surface is still wet/fluid, mechanically apply abrasive additive at rate desired to achieve desired level of skid resistance.
 - 8. Pull tape, pulling the tape towards wet material to insure any loose material on tape lands on the applied surface and not on any unprotected surrounding surfaces.
 - 9. Protect applied work area and let cure for 60 minutes.



10. Blow off any loose abrasive additive with a hand-held backpack or similar type blower.
11. Allow to cure minimum 30 additional minutes prior to pedestrian or bicycle traffic.
12. Allow to cure minimum 60 additional minutes prior to vehicular traffic.
13. When material is tack free, surface is ready for pedestrian traffic. When material has been tack free for 60 minutes it is ready for vehicular traffic.

3.4 CLEANING

- A. Clean as needed with very light pressure wash without the use of soaps, abrasives, abrasive devices or rotary tipped pressure washing tools.

3.5 PROTECTION

- A. Protect installed work areas required by the manufacturer until work is complete and ready for traffic to maintain product performance, design criteria and warranty.

Please check www.VanguardOnline.com for the most recent updates to any of the above.

END OF SECTION

