

# MS-0530-0024

## Patterned/Textured Crosswalk

**I. Description—** This work is the preparation of the area, supplying and placing a modified polyurethane resin-aggregate mixture as surface dressing, finishing and texturing the system in order to construct decorative crosswalks with the specified color, material, and texture pattern shown on the plans.

### **II. MATERIAL—**

#### **1. Certification. MS-447 A**

- a. Where directed, replace material that has not remained within reasonably close conformity to location or has not remained effective in performing useful service for a period of 180 days from the date of acceptance. The service is as follows:
  - 90% of material remains in each crosswalk.

#### **2. Decorative modified polyurethane resin crosswalk from a manufacturer listed in Publication 447.**

- a. AASHTO M 250-05; Impact Resistance 60 ft. lbs, without distress to the area outside the area permanently deformed by the tup.
- b. ASTM D523; Sheen  $\geq 1$  at 85°
- c. ASTM D412; Tensile Strength  $\geq 400$  psi, but can be waived if ASTM D4541 values exceed 400 psi
- d. ASTM D4060; Abrasion Resistance Maximum loss 100 mg/1000 cycles, based on net loss between 500 to 1000 cycles.
- e. ASTM D4541; Adhesion to Asphalt  $\geq 180$  psi
- f. Meet Manufactures Specifications

Furnish a material with a minimum initial skid resistance of 50 British Pendulum Number (BPN) for all crosswalks, stop lines, or where indicated.

**3. Aggregates.** ASTM C295-03, Meet manufacturer's specifications

**4. Resin-based synthetic asphalt compound.** ASTM D-4690-99, Meet manufacturer's specifications

**5. Reinforcement fibers.** Meet manufacturer's specifications

### **III. CONSTRUCTION—**

#### **1. Weather restrictions.**

- a. Do not place system when precipitation is expected within 24 hours.
- b. Do not place system when air or surface temperature is 10°C (50°F) or lower.

#### **2. Pattern and Color Limitations.**

- a. The color of the pavement surface within the crosswalk shall not degrade the contrast of the white crosswalk lines.
- b. Colors shall be limited to silver-gray, brown, maroon, and be uniform throughout the entire crosswalk area within the crosswalk lines.
- c. The following standard highway colors commonly used for traffic control devices shall be avoided:
  - red, blue, green, yellow, and orange.
- d. The Engineer will determine whether a proposed color is too close to the colors listed in 2c.
- e. The pattern or texture material within the white crosswalk symbol shall be non-reflective.
- f. The textured pattern shall be limited to brick or cobblestone.

**3. Surface Preparation.**

- a. Place only within the plan designated areas.
- b. Apply system to only asphalt or concrete surfaces.
- c. Apply system to only asphalt surfaces that show no excessive oxidation. The existing pavement shall be stable, well compacted and in excellent condition. Repair of ruts, raveling, cracks, visible seams, and shallow points, is required before acceptance of the pavement surface by the installer
- d. Mill all applicable leading edges to a consistent vertical depth ( $\geq$ )19 mm (3/4 inch) below the existing grade
- e. Clean the surface of all loose particles, dirt, grease, and any other substance that may reduce the systems ability to adhere to the existing surfaces
- f. Seal concrete surfaces with a material meeting manufacturer's specifications prior to placement of surface treatment

**4. Placement.**

- a. Mixture proportions are proprietary but must account for color and traffic use.
- b. Thoroughly mix part 'A' (Resin) with part 'B' (Hardener) utilizing a suitable heavy duty electric paddle mixer or similar in amounts recommended by manufacturer
- c. Pre-wash and completely dry all aggregates and provide bagged materials consistent with the mixture proportions before batching and mixing.
- d. Thoroughly mix aggregates and polyurethane binder mixture in the amounts recommended by manufacturer
- e. Apply, uniformly spread and finish surface between the grade control forms utilizing rubber squeegees and trowels as recommended by the manufacturer and as shown on the plans
- f. Imprint using an approved mold capable of providing a 9 mm to 13 mm (3/8 inch to 1/2 inch) deep imprint with the design details shown on the plans
- g. Use a manufacturer approved release agent to prevent imprinted material from sticking to the mold
- h. Provide a final texture and pattern shown on the plans
- i. Border the decorative crosswalk by installing two white parallel line (minimum 6 inches thick) with a PennDOT approved pavement marking material that extends from face of curb to face of curb or edge of shoulder
- j. Remove all loose sand and clean entire surface area after Imprinting
- k. Do not allow vehicular traffic or loads on the system for a minimum of two hours from application or until the mixture is tack free

**IV. Measurement and Payment: Square Meter (Square Yard)**