

SECTION 322
ASPHALT STAMPING

322.1 DESCRIPTION:

The work under this item will provide stamped asphalt which shall include surface patterning and/or asphalt surfacing (painting) as described herein in accordance with Owners Standard Details and/or as shown on the plans and called out in the special provisions.

322.2 GENERAL REQUIREMENTS:

A Contractor shall meet the following qualifications in order to perform asphalt stamping:

The Contractor shall have completed a minimum of three (3) asphalt stamping projects in the past year (from the date of bid) in the State of Arizona and totaling at least 50,000 S.F. Provide proof of completion of work to three or more government entities within Arizona in last (3 or 5) years totaling 50,000 sq. ft. or more. The Contractor shall furnish evidence of meeting these experience requirements to the Engineer, including all current referral contacts on these projects for verification at the time of bid submittal or bid can be disqualified. Mock ups may be required at the owner's discretion to ensure Contractor familiarity with product and installation procedures. Acceptance of colors and application procedures should be accepted in writing from the agency/owner prior to commencement of work.

The Contractor shall submit for review and approval all manufacturer product and technical data for materials proposed to be installed in the right-of-way. The Contractor shall also submit for review and approval a sample of the stamped asphalt material prior to installation. These submittals shall be submitted to the Engineer.

Prior to acceptance of the project, the Contractor shall repair all damaged or unsuitable areas, as determined by the Engineer, at no expense to the Owner.

322.3 MATERIALS:

322.3.1 Asphalt Concrete: All roadway construction materials and asphalt thicknesses shall conform to the applicable requirements of Section 321 and the project plans and specifications. Aggregate base course (ABC) shall be clean, well-graded sand and gravel compacted and placed per Section 321.5.1 and the project plans and specifications. The surface area to be stamped should be free from cracking and shall be new enough to have sufficient oil to facilitate the stamping process.

For raised medians and other areas not subject to vehicular traffic, the surface course shall be at least 2-1/2" of 1/2" or 3/8" Marshall Low Traffic asphalt concrete mix in accordance with Section 710, or as approved by the engineer.

322.3.2 Surface Patterning: The patterning equipment shall be metal templates that shall correspond to the patterns shown in Owner's standard details or as shown on the plans and called out in special provisions. Refer to the project plans and specifications for the pattern type to be used.

322.3.3 Surfacing System (Painted Asphalt): All products used in the surfacing system shall be DecoCoat Polymer System, DP-200, or equivalent by meeting the minimum physical and performance properties in Tables 322-1 and 322-2. The Contractor shall submit a Certificate of Compliance to the

Engineer indicating that the materials to be included in the work meet these specification requirements. The color used for painted asphalt shall be terracotta or as approved by the Engineer.

TABLE 322-1		
ASPHALT STAMPING SURFACING SYSTEM		
PHYSICAL PROPERTIES		
Characteristic	Test Specification	Base – Colorant
Solids by Volume (%)	ASTM D2697	68%
Solids by Weight (%)	ASTM D2369	78%
Density	ASTM D1475	13.7 lbs./gal

TABLE 322-2		
ASPHALT STAMPING SURFACING SYSTEM		
PHYSICAL PROPERTIES		
Characteristic	Test Specification	Test Result – Base
Dry-Time (To Recoat)	ASTM D5895	20 Min
Taber Wear Abrasion Dry H-10 Wheel	ASTM D4060 1 day cure	0.16 g/1000 cycles
Taber Wear Abrasion Wet H-10 Wheel	ASTM D4060 7 days cure	2.34 g/1000 cycles
QUV E Accel.	ASTM G154 Delta	0.53
Hydrophobicity Water Absorption	ASTM D-570	7.6% (9 Day Immersion)
Shore Hardness	ASTM D2240	67 Type D
Mandrel Blend	ASTM D522-93A	1/4" @ 21 Degree C Pass
Permeance	ASTM D1653	3.77 g/m ² /hr (52 mils)
VOC	Per MSDS	25 g/l
Adhesion to Asphalt	ASTM D4541	Substrate Failure
Friction Wet	ASTM E303 British Pendulum Tester	WP * Coated- 62 WP* Uncoated - 59 AC ** Coated - 70 AC ** Uncoated - 61
Cure Time	Measured @ 77 Degrees Fahrenheit	Dry to touch – 20 Min Light Foot/Vehicle Traffic – 2-4 Hrs. Full Cure – 5 to 7 days

322.4 INSTALLATION:

The Contractor shall furnish all the necessary labor, material, tools, and equipment to complete the proper installation of the asphalt print paving used in decorative pavement, crosswalks, and intersection

medallions or as otherwise noted in the Contract Documents. This includes furnishing a 10-foot straight edge to accomplish the level test specified for the finished decorative pavement. Pattern and color of finished surface shall be as shown in the project plans and details.

322.4.1 Asphalt Concrete: The hot-mix asphaltic concrete shall be placed per the project plans and specifications. The Contractor shall contact the Engineer for roadway compaction approval prior to beginning asphalt stamping. Asphalt shall be fully compacted prior to positioning the patterning template.

322.4.2 Surface Patterning: When new asphalt is to be stamped, it shall have one overnight period to set prior to stamping for conventional mixes and ARAC mixes shall have 30 days to set prior to the stamping/coating process.

The asphalt to be stamped shall be uniformly heated using infrared technology to a temperature that shall not exceed 280 degrees Fahrenheit. Templates shall be set in place using a plate compactor and fully embedded in the asphalt (minimum static weight shall be 700 lbs.).

The template print depth shall be 3/8" over 95% of the patterned area. Template print depth shall be inspected prior to coating to ensure compliance. All hand tooling shall be complete, full depth, straight in manner, and to the edge of the asphalt pavement, common edge, concrete curb, gutter, or other border. There shall be no over print or shadowing of patterns and no remnants of excess print on surrounding unintended areas. Should overprinting or other imperfections occur, these areas can be repaired by using the same technology to return the asphalt to a smooth condition to that of the unstamped area(s).

322.4.3 Surfacing System (Painted Asphalt & Clear Coat Sealant): The air temperature shall be at least 45° Fahrenheit and rising before the application of surface system products begins. There shall also be no precipitation expected within 24 hours of the anticipated surfacing completion in order for the application to be authorized by the agency. The surface should be free from grease, oils, or any other matter that may affect adhesion prior to placing any pavement coating.

The surfacing system products shall be spray-applied. Where required to cover small areas, the surfacing system may be painted on using brooms or brushes. When complete, the entire asphalt surface shall be uniformly covered with the surfacing product with no exposed asphalt present.

The Contractor shall use sufficient masking to ensure that the surface system products are applied only where specified. Masking shall be complete and no overspray, or other imperfections, onto surfaces not designated as coated surfaces shall be allowed.

The Contractor shall apply the surface system products with a minimum of four complete passes on a roadway surface. Three complete passes shall be allowed on medians, walkways, pathways, and bike paths where traffic is primarily pedestrian with minimal or no automobile traffic. Thickness of the surfacing product shall be 20 mils or greater.

After the colorant has had sufficient time to set, a minimum of two coats (or as specified in the bid documents) of a clear coat sealant (DecoCoat Polymer Systems, DP-100, DP-150HD, or equivalent as approved by the agency/engineer) must be applied to provide ease of long-term maintenance and to reduce tire markings on colored asphalt.

After the surfacing system products have been applied, the treated asphalt shall not be exposed to vehicular traffic for eight (8) hours, overnight, whichever is greater. As an alternative, residing engineer can approve a shorter window for vehicular use upon release of written approval provided to the contractor

322.5 MEASUREMENT:

Asphalt stamping shall be measured by the square foot, which shall include surface patterning and/or asphalt surfacing (painting), unless specifically outlined in the bid documents.

322.6 PAYMENT:

Asphalt stamping shall be measured as provided above and shall be paid for at the contract price per square foot, or as specified in the bid documents, which price shall be full compensation for the item complete as described and specified herein. Specialty marks or stamps shall be paid as lump sum, by the unit, or as approved by the agency.

322.7 WARRANTY:

Asphalt stamping shall have a two year warranty when the colorant and sealer have been applied using the application requirements set forth in this section, or the manufacturers requirements, whichever is greater. Warranty shall provide coverage from flaking, premature wearing and like defects. Color changes shall not be part of the warranty.

Should a warranty event occur, the repair shall be corrected at the expense of the contractor. Satisfaction of the warranty repair shall be performed by the specifications outlined in this Section. Areas that require recoating and have been clear coat sealed will require a light scuffing of the surface prior to reapplication.