



A-1

SPECIFICATIONS FOR THE INSTALATION OF GEOTEXTILE PAVING FABRIC

DESCRIPTION

This work shall consist of furnishing and placing an asphalt overlay geotextile (paving fabric) beneath a pavement overlay or between pavement layers to provide a moisture barrier membrane and a stress absorbing interlayer.

MATERIAL REQUIREMENTS

Paving Fabric: will be a staple fiber, needle-punched, non-woven material consisting of at least 85% by weight, polyolefins, polyesters or polyamides. The paving fabric shall be resistant to chemical attack, rot and mildew and shall have no tears or defects that will adversely alter its physical properties. The fabric shall be specifically design for pavement applications and be heat-set on one side to reduce tack coat bleed-through and to minimize fabric pick-up by construction equipment during installation. The fabric shall meet the physical requirements specified in Table 1.

Tack Coat: The tack coat used to impregnate the fabric and bond the fabric to the pavement will be the same grade asphalt cement as used in the hot mix asphalt.

CONSTRUCTION AND INSTALLATION REQUIREMENTS

Shipping and Storage: The paving fabric shall be kept dry and wrapped such that it is protected from the elements during shipping and storage. If stored outdoors, the fabric shall be elevated and protected with a waterproof cover. The paving fabric shall be labeled in accordance with ASTM D4873-88, "Standard Guide for Identification, Storage and Handling of Geosynthetic Rolls."

Weather Limitations: The air and pavement temperatures shall be at least 50°F (10°C) and rising for placement of asphalt cement. Neither asphalt tack coat nor paving fabric shall be placed when weather conditions are not suitable, in the opinion of the Engineer.

Surface Preparation: The pavement surface shall be dry and thoroughly cleaned of all dirt and oil to the satisfaction of the Engineer. Cracks 1/4" (4mm) wide or greater shall be cleaned and filled per the crack sealing specifications provided at www.sunlandasphalt.com. Cracksealing material shall be allowed to cure prior to placement of paving fabric. Potholes and other pavement distress shall be repaired. These repairs shall be performed per the specifications for pavement repair provided at www.sunlandasphalt.com and as determined by the Engineer.

Tack Coat Application: The tack coat shall be applied using a truck mounted self-powered distributor truck equipped with a retort heating unit. It shall be equipped with a full circulating spreader bar and a pumping system capable of applying asphalt cement within ± 0.05 gallons per square yard tolerance of the specified application rate and must give a uniform covering of

the surface to be treated. The application of material shall be controlled by a C.R.C. computer. The distributor shall also include a tachometer, pressure gauge, volume measuring device, and a thermometer. The distributor truck shall be ADOT bar certified within the previous six months.

Hand spraying, squeegee and brush application may be used in locations where the distributor truck cannot reach. Every effort shall be made to keep hand application to a minimum.

The tack coat shall be applied uniformly to the prepared, clean pavement surface. The asphalt cement tack coat application rate must be sufficient to saturate the fabric and to bond the fabric to the existing pavement surface. The tack coat application rate shall be 0.22 to 0.28 gallons per square yard (1.0 to 1.3 liters per square meter) as required by the roadway surface and environmental conditions. Within street intersections, on steep grades or in other zones where vehicle braking is common, the normal application rate shall be reduced by about 20 percent as directed by the Engineer, but to not less than 0.20 gallons per square yard (0.9 liters per square meter).

The temperature of the tack coat shall be sufficiently high to permit a uniform spray pattern. For asphalt cements, the minimum temperature shall be 290°F (143°C). To avoid damage to fabric, distributor tank temperatures shall not exceed 325°F (163°C).

The target width of the tack coat application shall be equal to the paving fabric width plus 6"(15.2cm). Tack coat application shall be wide enough to cover the entire width of fabric overlaps. The tack coat shall be applied only as far in advance of paving fabric installation as is appropriate to ensure a tacky surface at the time of paving fabric placement. Traffic shall not be allowed on the tack coat. Excess tack coat shall be cleaned from the pavement.

Paving Fabric Placement: The paving fabric shall be placed onto the tack coat using mechanical laydown equipment capable of providing a smooth installation with a minimum amount of wrinkling or folding. The fabric installation machine shall be equipped with a fabric tensioning brake system, tack embedment brooms, an adjustable width frame and hydraulic lift, width and gate controls. In areas too small for the fabric machine to access, the fabric may be installed by hand. Every effort should be made to keep hand application to a minimum.

The paving fabric shall be placed before the asphalt cement tack coat cools and loses its tackiness. Paving fabric shall not be installed in areas where the overlay asphalt tapers to a minimum compacted thickness of less than 1.5"(3.8cm).

Wrinkles severe enough to cause folds shall be slit and laid flat. Booming and/or rubber-tire rolling will be required to maximize paving fabric content with the pavement surface.

Turning of the paver and other vehicles shall be done gradually and kept to a minimum to avoid movement and damage to the paving fabric. Abrupt starts and stops shall also be avoided. Damaged fabric shall be removed and replaced with the same type of fabric and a tack coat.

Joints and Overlaps: At joints, fabric rolls shall overlap by 1" to 6"(2.5 to 15.2cm). End joints and joints from repair of wrinkles should be made to overlap or "shingle" in the direction that the pavement overlay will be placed. Overlaps of adjacent rolls may be as great as 6" to

accommodate variations between the width of the roadway and paving fabric. Excess fabric shall be cut and removed to ensure that overlaps of adjacent rolls do not exceed 6"(15.2cm). Additional tack coat shall be applied between all fabric overlaps and repairs. Any locations that do not have additional tack for the overlaps shall be corrected by manual placement of tack coat prior to overlay construction.

Unless otherwise approved by the Engineer, no traffic except necessary construction traffic will be allowed to drive on the paving fabric.

Overlay Placement: Asphalt overlay construction shall closely follow fabric placement. All areas in which paving fabric has been placed will be paved during the same day. Excess tack coat that bleeds through the paving fabric shall be removed by broadcasting sand on the paving fabric. Excess sand should be removed before beginning the paving operation.

In the event of rainfall on the paving fabric prior to the placement of the asphalt overlay, the paving fabric must be allowed to dry before asphalt concrete is placed.

Overlay asphalt thickness shall meet the requirements for the contract drawings and documents. The minimum compacted thickness of overlay asphalt shall not be less than 1.5"(3.8cm) in areas of paving fabric installation.

METHOD OF MEASUREMENT

Paving Fabric and Tack Coat: The paving fabric will be measured by the square yard (square meters).

PAYMENT

Paving Fabric and Tack Coat: The accepted quantities of paving fabric will be paid for at the contract unit price per square yard (square meter) in place.

TABLE 1 PHYSICAL REQUIREMENTS OF PAVING FABRICS ^{1,2}

Properties	Test Method	American Standard	Metric Units
Mass per unit Area	ASTM D3776	na	na
Tensile Strength	ASTM D4632-91	90 lbs	0.400 kN
Tensile Elongation	ASTM D4632-90	50%	-
Asphalt Retention	ASTM D6140	0.20 gal/yd ²	0.90 l/m ²
Melting Point	ASTM D276-87	300°F	149°C
Surface Texture	VISUAL INSPECTION	Heat-Set On One Side	

NOTES

1 Certification of conformance from paving fabric manufacturer may be required.

2 All numerical values represent minimum average roll values (average of test results from any sampled roll in a lot shall meet or exceed the minimum values) in the weaker principal direction. Lot shall be sampled according to ASTM D4354-89, "Practice for Sampling of Geosynthetics for Testing."