

PAVEMENT FABRIC

PART 1 GENERAL

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| 1.01 OTHER CONTRACT DOCUMENTS | The General Conditions of the Contract, General Requirements, and Supplemental Conditions attached hereto shall apply to and be part of this Section. |
| 1.02 DESCRIPTION OF WORK | The Work consists of the supply and installation of a geosynthetic membrane system (pavement fabric) within an asphalt pavement structure. |
| 1.03 RELATED WORK | Section 02510 Plant Mixed Bituminous Pavement |

PART 2 PRODUCTS

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| 2.01 PAVEMENT FABRIC | <p>The pavement fabric shall be specifically designed and manufactured for hot mix asphalt pavement applications and shall be a non-woven, needle punched, heat bonded (calendered) on one side only polyester or polypropylene material manufactured to conform to the following minimum physical requirements;</p> |
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Mass Per Unit Area	135g/m ²
Grab Tensile Strength (ASTM D4632)	520 N
Tensile Elongation (ASTM D4632)	≥50%
Melting Point (ASTM D276)	150 °C

Numerical values are minimum average roll values as tested according to ASTM D4759 'Practice for Determining the Specification Conformance of Geosynthetics'.

The pavement fabric shall be resistant to chemical attack, rot and mildew and shall be free of tears or defects which could adversely alter the pavement fabric physical properties.

Each roll of pavement fabric shall be labelled as per ASTM D 4873 'Guide for Identification, Storage and Handling of Geotextiles', with the heat treated side marked for easy identification and the shipment accompanied with a written certification of conformance to the above specifications, asphalt retention requirements of the fabric and installation instructions.

PAVEMENT FABRIC

2.02 TACK COAT

The tack coat used to impregnate and bond the fabric to the pavement shall be an uncut or penetration grade asphalt cement AC, AC-20 or AR-4000 (green book) AE or a rapid cure cationic or anionic emulsion type SS-1, RS, CRS of the same grade as the asphalt hot mix may be used if approved by the Engineer. Petroleum based solvent cutbacks or emulsions (RC,MC,SC) shall not be used.

PART 3 EXECUTION

**3.01 SHIPMENT AND
STORAGE**

Each pavement fabric roll shall be wrapped with a protective covering to protect it from ultraviolet radiation, abrasion, deleterious forces and substances, and moisture during shipping and storage. If stored outdoors, rolls shall be elevated above the ground and protected with a waterproof cover. Damaged or wet rolls will not be accepted for incorporation into the Work.

**3.02 SURFACE
PREPARATION**

The pavement surface shall be dry and thoroughly cleaned of all foreign matter, vegetation, loose materials, rocks, dirt, dust, grease and oil to the satisfaction of the Engineer. Street hardware including manhole covers, catch basin inlets and valve casing lids shall be covered and sealed prior to the application of the tack coat. Potholes ,large cracks and other pavement or base material distresses shall be repaired as outlined in the Supplemental Conditions or as directed by the Engineer and will be paid for as shown in the Schedule of Unit Prices.

**3.03 TACK COAT
APPLICATION**

Minimum air and pavement temperature shall be 15⁰C and rising for placement of the tack coat. Neither the asphalt tack coat or the pavement fabric shall be placed when weather conditions, in the opinion of the Engineer, are unsuitable.

The temperature of the tack coat shall be sufficiently high to permit a uniform spray pattern. The distributor tank temperature shall not exceed 160⁰C for asphalt cements and between 55⁰C and 71⁰C for asphalt emulsions.

The tack coat application rate shall be sufficient to provide adequate but not excessive coverage necessary for absorption into the pavement fabric (as recommended by the fabric manufacturer) and pore spaces of the existing pavement to provide a sufficient bond without bleeding.

PAVEMENT FABRIC

The tack coat shall be applied in a uniform double coverage spray pattern in one continuous pass using a calibrated liquid asphalt distributor spray bar. Hand spraying and brush application shall be restricted to areas of fabric overlap or repairs. The target width of tack coat application shall be equal to the pavement fabric width plus 150 millimetres, except along curb faces. The tack coat shall be applied sufficiently in advance of the laying operation to break or cure prior to application of the pavement fabric while ensuring proper adhesion between pavement fabric and the existing road surface. Traffic shall not be allowed on the tack coat. Excess tack coat shall be removed prior to pavement fabric installation. Under no circumstances shall pavement fabric be placed in an asphalt emulsion until all water has evaporated from the emulsion.

**3.04 PAVING FABRIC
PLACEMENT**

The pavement fabric shall be stretched, aligned and placed smoothly into the tack coat cooling and losing its adhesive properties with the fuzzy (needle punched) side facing down toward the tack coat and the heat bonded side facing up. Pavement fabric shall NOT be placed until the surface temperature of the tack coat is 135°C or less. Pavement fabric shall NOT be placed more than 200 metres in advance of the paving operation unless directed otherwise by the Engineer. No more pavement fabric shall be placed than what can be covered with asphalt the same day.

Placement shall be done with approved fabric placing equipment using mechanical or manual lay down equipment capable of providing a smooth installation free of wrinkles that lap. All wrinkles and air pockets shall be broomed and/or rolled out to establish full contact between the pavement fabric and the existing pavement surface. Pavement fabric shall not be installed in areas where the overlay asphalt tapers to a minimum compacted thickness of less than 40 millimetres.

Fabric joint overlaps shall be 50 to 100 millimetres on longitudinal joints and 100 to 150 millimetres on transverse joints. Wrinkles in excess of 25 millimetres long shall be cleanly cut on the side away from the paving operation, with the longer side lapped over in the direction

PAVEMENT FABRIC

of paving. Excess fabric material greater than 50 millimetres in length shall be cleanly cut away and removed. Fabric joint overlaps and overlapped wrinkles shall have an additional tack coat applied sufficient to saturate the two layers of pavement fabric and establish a bond. Excess tack coat which bleeds through the paving fabric shall be removed or blotted with a thin layer of hot mix asphaltic concrete or dry washed sand on the paving fabric. Excess sand or hot mix asphalt shall be removed prior to the paving operation.

**3.05 ASPHALT OVERLAY
PLACEMENT**

The installation of the pavement fabric mat shall be approved by the Engineer prior to the application of the hot asphaltic concrete mix. Minimum air and pavement temperature shall be a minimum of 10°C and rising for placement of the asphalt. If the pavement fabric becomes wet prior to the placement of the asphalt overlay, the pavement fabric shall be allowed to dry completely before any asphalt is placed.

No traffic except necessary construction equipment shall be allowed to drive on the pavement fabric. Turning of the paver and other vehicles shall be done gradually and kept to a minimum to avoid movement and damage to the installed pavement fabric. Abrupt starts and stops shall also be avoided. Damaged pavement fabric shall be removed and replaced. Unless approved by the Engineer, no vibratory equipment will be allowed on the asphaltic concrete pavement mat during any phase of the construction where a pavement fabric has been installed.

Overlay asphalt thickness shall meet the requirements of the Specifications, the Drawings or as stated in the Supplemental Conditions but under no circumstances shall it be less than 40 millimetres where a pavement fabric has been installed.

END OF SECTION