

Project Name:
Project Number:

Section 32 01 17

Specification for Interlayer for Bituminous Pavement Overlays

1. GENERAL

1.1 SECTION INCLUDES

- A. Mirafi® MPV paving fabrics are needlepunched, polypropylene, heat set, non-woven geotextiles with high asphalt absorption. When installed with sufficient asphalt cement tack coat on a properly prepared surface, Mirafi® MPV paving fabric and the tack coat form an impermeable fabric interlayer system that is fully recyclable and adds long-term lifecycle and cost benefits to your pavement.

1.2 RELATED SECTIONS

- A. Section 31 20 00 – Earth Moving
- B. Section 32 12 16 – Asphalt Paving
- C. Section 32 01 16 – Flexible Paving Rehabilitation

1.3 UNIT PRICES

- A. Method of Measurement: By the square yard (or square meter - as indicated in contract documents) including seams, overlaps, and wastage.
- B. Basis of Payment: By the square yard (or square meter - as indicated in contract documents) installed.

1.4 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO), "Standard Specification for Geotextile Specifications for Highway Applications" Designation M288-15.
- B. American Society for Testing and Materials (ASTM):
 - 1. D123: Standard Terminology Relating to Textiles
 - 2. D276: Test Method for Identification of Fibers in Textiles
 - 3. D4354: Practice for Sampling of Geosynthetics for Testing
 - 4. D4439: Terminology for Geotextiles
 - 5. D4632: Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
 - 6. D5261: Standard Test Method for Measuring Mass per Unit Area of Geotextiles
 - 7. D6140: Standard Method to Determine Asphalt Retention of Paving Fabrics Used in Asphalt Paving for Full-Width Applications
- C. Geosynthetic Accreditation Institute (GAI) - Laboratory Accreditation Program (LAP).

- D. National Transportation Product Evaluation Program (NTPEP)
- E. International Standards Organization (ISO) – 9001:2015

1.5 DEFINITIONS

- A. Minimum Average Roll Value (MARV): Property value calculated as typical minus two standard deviations. Statistically, it yields a 97.7 percent degree of confidence that any sample taken during quality assurance testing will exceed value reported.

1.6 SUBMITTALS

- A. Submit the following:
 - 1. Certification: The contractor shall provide to the Engineer a certificate stating the name of the manufacturer, product name, style number, chemical composition of the filaments or yarns and other pertinent information to fully describe the geotextile. The Certification shall state that the furnished geotextile meets MARV requirements of the specification as evaluated under the Manufacturer's quality control program. The Certification shall be attested to by a person having legal authority to bind the Manufacturer.
 - 2. Quality Standards: The contractor shall provide to the Engineer the Manufacturer's Quality Control Plan along with their current GAI-LAP and ISO 9001:2015 certificates.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - 1. The geotextile Manufacturer shall have all the following credentials:
 - a. Geosynthetic Accreditation Institute (GAI)- Laboratory Accreditation Program (LAP)
 - b. ISO 9001:2015 Quality Management System
- B. The geotextile Manufacturer shall have a GAI-LAP accredited laboratory at the location of production capable of performing the ASTM tests as outlined in the specification.
- C. Asphalt Sealant: The Engineer shall approve asphalt cement. A grade asphalt of the same type used in the manufacture of the hot mix asphalt for the overlay should be acceptable.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Geotextiles labeling, shipment, and storage shall follow ASTM D4873. Product labels shall clearly show the manufacturer or supplier name, style name, and roll number.

- B. Each geotextile roll shall be wrapped with a material that will protect the geotextile from damage due to shipment, water, sunlight, and contaminants.
- C. During storage, geotextile rolls shall be elevated off the ground and adequately covered to protect them from the following: site construction damage, precipitation, extended ultraviolet radiation including sunlight, chemicals that are strong acids or strong bases, flames including welding sparks, excess temperatures, and any other environmental conditions that may damage the physical property values of the geotextile.

2. PRODUCTS

2.1 MANUFACTURERS

- A. TenCate™ Geosynthetics Americas
365 South Holland Drive
Pendergrass, GA, USA 30567
1-800-685-9990
1-706-693-2226
1-706-693-4400, fax
www.tencategeo.us

2.2 MATERIALS

- A. Geotextile:
 - 1. The paving fabric shall be needle punched nonwoven and heat treated on one side and shall conform to AASHTO M288, Mild Climate Region specification for paving fabrics and the following physical and mechanical properties:

TABLE 1 - PAVING GEOTEXTILE

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value
Grab Tensile Strength	ASTM D4632	lbs (N)	90 (401)
Grab Tensile Elongation	ASTM D4632	%	50
Mass/Unit Area	ASTM D5261	oz/yd ² (g/m ²)	3.5 (119)
			Minimum Test Value
Asphalt Retention	ASTM D6140	gal/yd ² (l/m ²)	≥ 0.20 (0.91)
Melting Point	ASTM D276	F° (C°)	320 (160)
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70

*Approved geotextiles are as follows:

Mirafi® MPV400

2.3 QUALITY CONTROL

- A. Manufacturing Quality Control: Testing shall be performed at a laboratory accredited by GAI-LAP for tests required for the geotextile, at frequency meeting or exceeding ASTM D4354.
- B. Geotextile properties, other than Ultraviolet Stability shall be tested by NTPEP to verify conformance with this specification.
- C. Manufacturer's certifications and testing of quality assurance samples obtained using Procedure B of ASTM D4354. A lot size for conformance or quality assurance sampling shall be the shipment quantity of the given product or a truckload of the given product, whichever is smaller.

3. EXECUTION

3.1 PREPARATION

- A. The installation site shall be prepared by clearing, grubbing, and excavation or filling the area to the design grade. This includes removal of topsoil and vegetation.

3.2 EQUIPMENT

- A. Asphalt Distributor: The distributor must be suitably metered and capable of spraying the asphalt cement uniformly and at the prescribed application rate. No drilling or skipping shall be permitted.
- B. Fabric Handling Equipment: A tractor or similar mechanical device with mounted lay down equipment that is capable of handling full rolls of fabric shall be used. The equipment shall be capable of laying the paving fabric smoothly without excessive wrinkles and/or folds.
- C. Miscellaneous Equipment: Stiff bristle brooms used to smooth, and scissors (or blades) used to cut the paving fabric shall be provided by the Installer. A pneumatic-tired roller may be needed in some cases to smooth paving fabric into the asphalt cement.

3.3 INSTALLATION

- A. Surface Preparation: The surface shall be free of dirt, water, vegetation and other foreign materials prior to placement of the paving fabric. Open cracks $\frac{1}{4}$ inches or larger shall be filled with sand mixed asphalt as directed by the Engineer. Cracks larger than $\frac{1}{2}$ inch or holes shall be filled with cold or hot mix asphalt. The use of a leveling course may be required prior to placing the paving fabric in severe cases.
- B. Application of Sealant: The asphalt cement and binder must be uniformly spray-applied at the specified rate. The quantity required may vary with the surface condition of the existing pavement (e.g. degree of porosity), but shall be applied at a nominal rate of 0.25 gallons per square yard of residual asphalt.

- C. Application of asphalt cement will be performed by truck-mounted distribution equipment whenever possible, with hand spraying kept to a minimum. The temperature of the asphalt cement must be sufficiently high to permit a uniform spray pattern. The minimum recommended temperature for asphalt cement is 290°F, and should not exceed 325°F.
- D. Paving Fabric Placement: The paving fabric shall be placed onto the asphalt cement with a minimum of wrinkles before the asphalt can cool or lose its tackiness. The paving fabric shall be placed so that the non-heat treated (bearded or fuzzy) side is placed downward, into the sealant, thus providing optimum bond between fabric and pavement during the construction process. As directed by the Engineer, wrinkles severe enough to cause “folds” shall be slit and laid flat in the direction of paving operations. Brooming the paving fabric will assist it in making intimate contact with the pavement surface.
- E. Any overlap of the paving fabric should be minimized, although an overlap of 1 to 3 inches is recommended to insure full closure of overlapping layers. Care must be exercised to prevent edge pick-up by the paver on transverse joints they may be shingled (overlapped) in the direction of paving operations or secured by asphalt tack. The contractor installing the paving fabric must prove that they have at least 4 years’ experience in placing paving fabric.
- F. In the event that asphalt cement should bleed through the paving fabric before the hot mix asphalt is placed, it may be necessary to absorb any visible sealant by spreading sand or hot mix asphalt over those areas. This should minimize the tendency for construction equipment tires to lift the paving fabric when driving over it. Turning of paving equipment and other vehicles on the paving fabric must be kept to a minimum to avoid movement or damage to the fabric. Satisfactory installation of hot mix asphalt can be accomplished at temperatures below 300°F. In no case, should temperature of the hot mix asphalt concrete exceed 325° F at time of placement.

END OF SECTION