

*This guide specification has been prepared by Propex Operating Company, LLC. (Propex) to assist design professionals in the preparation of a specification section covering nonwoven geosynthetic as an interlayer (paving fabric) above fatigued asphalt pavement and beneath an asphalt concrete overlay or chip seal surface treatment, or within new asphalt pavement; to provide a permanent moisture barrier and to retard fatigue and reflective cracking.*

*This specification allows the user to choose between the original Petromat® (dark gray) and Petromat Plus-White (solar reflective white) which is engineered to provide a cooler working surface and less paving equipment tracking issues while maintaining the specified amount of asphalt cement tack coat when constructing in warm to hot weather. Petromat Plus-White can also improve project visibility during night-time paving.*

*Three different weights/styles of both the original Petromat and Petromat Plus-White are provided in this specification with the intention of one style being chosen for use. Petromat styles are 4599, 4598 and 4597 and Petromat Plus-White styles are 4599W, 4598W and 4597W. Guidelines regarding which weight/style to use may be found at [www.propexglobal.com](http://www.propexglobal.com) under Petromat resources.*

*This specification may be used as the basis for developing either a project specification or an office master specification. The specification has been prepared according to the MasterFormat principles established in the Manual of Practice published by The Construction Specifications Institute (CSI) including the use of section numbers and titles. This guide specification may be used in conjunction with most commercially available master specifications sections with minor editing.*

*The following should be noted in using this guide specification:*

*•Italicized text is for information and guidance and should not be included in the final specification.*

*-Optional text requiring a selection by the user is enclosed within brackets, e.g.: "Section [01 33 00] [\_\_\_\_]."*

*•Items requiring user input are enclosed within brackets, e.g.: "Section [\_\_\_\_ - \_\_\_\_]."*

*•Optional paragraphs are separated by an "OR" statement, e.g.:\*\*\*\* OR \*\*\*\**

*Copies of this specification or a user friendly MS Word version may be found on the Propex website [www.propexglobal.com](http://www.propexglobal.com) or by calling (800) 621-1273.*

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*Updated 07/16/2018*

## 1 GENERAL

### 1.1 SECTION INCLUDES

*Edit the following paragraph to suit project requirements.*

- A. This specification is applicable to the use of a paving fabric saturated with asphalt cement between pavement layers.
- B. The function of the paving fabric is to act as a waterproofing and stress relieving membrane within the pavement structure.

### 1.2 RELATED SECTIONS

*Edit the following paragraphs to coordinate with other sections of the Project Manual.*

- 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

*Include the following article only for unit price contracts or lump sum contract with unit price adjustments. Delete for lump sum contracts.*

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

### 1.4 REFERENCES

*The following article assumes that the date of each reference standard will be the latest edition as of the date of the project specification. This provision must be defined in Division 1; coordinate with Division 1 statements.*

- A. American Association of State Highway and Transportation Officials (AASHTO)
  - 1. Standard Specification for Geotextile Specification for Highway Applications Designation AASHTO M 288-17
- B. American Society for Testing and Materials (ASTM):
  - 1. D276 - Method for Identification of Fibers in Textiles (Melting Point)
  - 2. D4354 - Practice for Sampling of Geosynthetics for Testing
  - 3. D4439 - Terminology for Geotextiles
  - 4. D4632 - Test Method for Grab Breaking Load and Elongation of Geotextiles
  - 5. D4759 - Practice for Determining the Specification Conformance of Geosynthetics
  - 6. D4873 - Guide for Identification, Storage, and Handling of Geotextiles
  - 7. D5261 - Test Method for Measuring Mass per Unit Area of Geotextiles
- C. Geosynthetic Accreditation Institute - Laboratory Accreditation Program (GAI-LAP)
- D. NTPEP – National Transportation Product Evaluation Program

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.
- B. *Typical Roll Value*: Property value calculated from average or mean obtained from test data.

1.6 SUBMITTALS

*Edit the following to coordinate with Division 1.*

- A. Submit under provisions of Section [01 33 00] [\_\_\_\_]:
  - 1. NTPEP Product Evaluation Listing from NTPEP Datamine, dated within past twelve months, showing product testing passes all tests.

1.6 DELIVERY, STORAGE, AND HANDLING

Geotextile labeling, printing on product, shipment and storage shall follow NTPEP GTX work plan, most recent year published.

The protective wrapping shall be maintained during periods of shipment and storage. If the wrapping is damaged prior to installation, the outer wrap of geotextile material must be discarded before installation.

During storage, geotextile rolls shall be elevated off the ground and adequately covered to protect them from the following: Site construction damage, extended exposure to ultraviolet (UV) radiation, precipitation, chemicals that are strong acids or strong bases, flames, sparks, temperatures in excess of 71 deg C (160 deg F) and any other environmental condition that might damage the geotextile.

**2 PRODUCTS**

2.1 MANUFACTURERS

Propex Operating Company, LLC, Chattanooga, Tennessee, 37419 USA, Phone (800) 621-1273.

*Edit the following to coordinate with Division 1.*

Substitutions: Under provisions of Section [01 25 00] [\_\_\_\_].

2.2 MATERIALS

*Edit the following to choose only one product and style (i.e. Petromat Plus-White 4598W)*

- A. PETROMAT® 4598 **\*\*OR\*\*** PETROMAT Plus-White 4598W (AASHTO M288 Type II Paving Fabric):
  - 1. The geotextile construction shall be a needle-punched nonwoven geotextile composed of polypropylene and recycled polyester, staple fiber, heat calendered on one side.
  - 2. The geotextile should meet the following Minimum Average Roll Values (MARV):

Property	Test Method	Units	Property Requirement
Grab Tensile Strength	ASTM D 4632	N (lbs)	450 (101)
Grab Elongation	ASTM D 4632	Percent	50
Mass Per Unit Area	ASTM D 5261	g/m <sup>2</sup> (oz/yd <sup>2</sup> )	140 (4.1)
Asphalt Retention	ASTM D 6140	l/m <sup>2</sup> (gal/yd <sup>2</sup> )	0.9 (0.20)
Melting Point	ASTM D 276	Degrees C (F)	160 (320)
Color	Visual		<i>Solar Reflective White – Plus-White                      **OR** Gray - Original</i>

\*\*\*OR\*\*\*

**B. PETROMAT® 4599 \*\*OR\*\* PETROMAT Plus-White 4599W:**

1. The geotextile construction shall be a needle-punched nonwoven geotextile composed of polypropylene and recycled polyester, staple fiber, heat calendered on one side.
2. The geotextile should meet the following Minimum Average Roll Values (MARV):

Property	Test Method	Units	Property Requirement
Grab Tensile Strength	ASTM D 4632	N (lbs)	400 (90)
Grab Elongation	ASTM D 4632	Percent	50
Mass Per Unit Area	ASTM D 5261	g/m <sup>2</sup> (oz/yd <sup>2</sup> )	122 (3.6)
Asphalt Retention	ASTM D 6140	l/m <sup>2</sup> (gal/yd <sup>2</sup> )	0.9 (0.20)
Melting Point	ASTM D 276	Degrees C (F)	160 (320)
Color	Visual		<i>Solar Reflective White – Plus-White **OR** Gray - Original</i>

\*\*\*OR\*\*\*

**C. PETROMAT® 4597 \*\*OR\*\* PETROMAT Plus-White 4597W:**

1. The geotextile construction shall be a needle-punched nonwoven geotextile composed of polypropylene and recycled polyester, staple fiber, heat calendered on one side.
2. The geotextile should meet the following Minimum Average Roll Values (MARV):

Property	Test Method	Units	Property Requirement
Grab Tensile Strength	ASTM D 4632	N (lbs)	534 (120)
Grab Elongation	ASTM D 4632	Percent	50
Mass Per Unit Area	ASTM D 5261	g/m <sup>2</sup> (oz/yd <sup>2</sup> )	156 (4.6)
Asphalt Retention	ASTM D 6140	l/m <sup>2</sup> (gal/yd <sup>2</sup> )	1.13 (0.25)
Melting Point	ASTM D 276	Degrees C (F)	160 (320)
Color	Visual		<i>Solar Reflective White – Plus-White **OR** Gray - Original</i>

**D. Tack Coat:**

1. The sealant material used to impregnate, bond and seal the geotextile to both the base pavement and overlay shall be a paving grade asphalt recommended by the geotextile manufacturer and approved by the Engineer, such as PG-22.
2. Quantity of the asphalt cement tack coat shall be as recommended by the manufacturer, generally between 0.22 and 0.30 gallons per square yard, depending on the paving fabric style and the condition of the pavement onto which the paving fabric is to be installed.
3. Uncut asphalt cements are the preferred sealants; however, cationic and anionic emulsions may be used, if approved by the manufacturer and engineer. The residual asphalt cement must meet project specifications. Cutbacks and emulsions, which contain solvents, shall not be used.
4. Contractor shall submit proposed sealant to engineer at least 15 days prior to installation.

5. The grade of asphalt cement specified for hot-mix design in each geographic location is generally the most acceptable material.

E. Equipment:

1. The asphalt distributor truck shall be capable of spraying the asphalt sealant at the prescribed uniform application rate. No streaking, skipping, or dripping will be permitted. The distributor shall also be equipped with a hand spray having a single nozzle and positive shut-off valve.
2. Mechanical or manual lay down equipment shall be capable of laying the geotextile smoothly.
3. The following miscellaneous equipment shall be provided: stiff bristle brooms or squeegees to smooth the geotextile; scissors or blades to cut the geotextile; brushes for applying asphalt sealant to geotextile overlaps.
4. Pneumatic rolling equipment to smooth the geotextile into the sealant, and sanding equipment may be required for certain jobs. Rolling is especially required on jobs where thin lifts or chip seals are being placed. Rolling helps ensure the geotextile bond to the adjoining pavement layers in the absence of heat and weight associated with thicker lifts of asphaltic pavement.

**3 Construction Procedures**

1. Follow manufacturer's installation guidelines for instructions on how to properly install the paving fabric and the subsequent paving materials—for Propex, go to [www.propexglobal.com](http://www.propexglobal.com)
2. A preconstruction meeting is recommended to take place no less than 15 days before construction.