

SECTION 119

PAVING FABRICS

119.1 GENERAL

This section specifies the materials for paving fabrics which may be part of a pavement rehabilitation project.

119.2 REFERENCES

119.2.1 ASTM

- D 1117
- D 1777
- D 3776

119.3 MATERIALS

119.3.1 FABRIC PROPERTIES: The fabric shall consist of woven or nonwoven polypropylene and/or polyester material meeting the requirements of Table 119.3.1 when tested in conformance with the respective test method.

119.3.2 PACKAGING: The fabric shall be packaged in rolls with each roll wound onto a suitable cylindrical form or core to aid in handling and placing. Each roll and the form or core upon which it is rolled shall be packaged in a suitable wrapper which is defined to include a sheath or container to protect the fabric from damage due to ultraviolet light and moisture during storage and handling.

119.3.3 IDENTIFICATION: Each roll shall be labeled or tagged in such a manner that the information for sample identification and other quality control purposes can be read from the label without opening the wrapper. Each roll shall be numbered by the manufacturer and further identified as to lot number or control number, date of manufacture, tare weight of core plus wrapper, width and length of fabric, and gross weight of the entire roll which includes fabric, core, wrap- per, tags, etc.

119.3.4 SAMPLING:

119.3.4.1 Test samples will be cut at the project from rolls selected at random and shall be no less than three feet in length by the full width of the roll. Nothing in this section shall negate the ENGINEER's right to take additional samples.

119.3.4.2 The samples will be taken according to the following frequency:

119.3.5 TESTING: Specimens will not be conditioned for testing. One-half of the above samples will be tested initially:

SQUARE YARDS	NO. OF SAMPLES
0-50,000	8
50,000-150,000	16
100,000-300,000	24
Over 300,000	32

if the average test results indicate the material meets specification requirements no additional testing will be done. If the test results indicate the material does not meet specification requirements, the CONTRACTOR will be notified and the remaining samples will be tested. These additional test results will be combined with the first set.

119.3.6 WEIGHT (FULL ROLL): Weight determinations will be made using procedures described in ASTM D 3367 Option A. The CONTRACTOR shall provide scales and move the roll to said scales for this purpose. Net weight of the fabric is total weight minus the weights of the core, wrapper, tags, etc.

119.3.7 WEIGHT (SPECIMENS): Specimen weight determinations will be made using procedures described in ASTM D 3776 Option C. Each specimen taken for the strength/elongation test and the asphalt retention test will be weighted to the nearest 0.1 gram.

119.3.8 STRENGTH AND ELONGATION:

119.3.8.1 The "breaking load" will be determined in accordance with ASTM D 1117, using constant rate of traverse of 12 ± 0.5 inches per minute and 1-inch (wide) x 2-inch (long) smooth-faced jaws. Test specimens will be rectangular and measure four by eight inches. When placed in the jaws, the fabric will project one-half inch at each end and 1.5 inches on each side.

119.3.8.2 Twenty individual test specimens will be taken at random for tensile and elongation testing, ten with the long dimension in the machine direction and ten with the long dimension in the cross-machine direction. No test specimens will be taken from either edge of the roll which is defined as within the outer one-tenth of the width. Ten

specimens (five in each direction) will be tested for breaking load and elongation.

119.3.8.3 The average test values for the machine-wise and the cross-machine specimens will be reported separately as the final test values.

119.3.9 THICKNESS: Using ASTM D 1777, thickness will be determined using a 0.5-inch-diameter foot exerting 45 grams per square centimeter pressure onto a 1.1-inch-diameter anvil. Five thickness measurements will be made on each specimen used in the strength/ elongation tests and asphalt retention test: one measurement in the vicinity of each corner and one in the center.

119.3.10 ASPHALT RETENTION: Two machine-wise test specimens and two cross-machine specimens each three by fifteen inches will be selected from the full-width sample in the same manner as described in Subsection 119.3.8. Each test specimen will be weighed to the nearest 0.1 gram, saturated in asphalt cement maintained at $150 \pm 4^{\circ}\text{F}$, placed between sheets of newspaper and pressed with a hot iron to remove excess asphalt. (Presence of excess asphalt is evidenced by a glossy appearance.) The saturated specimen will be weighted to the nearest 0.1 g, then placed in naphtha heated to $110^{\circ} \pm 5^{\circ}\text{F}$ for 30 minutes. Fresh naphtha at the specified temperature will be alternated as necessary during the 30-minute period to effect removal of the asphalt cement from the specimen. The specimen will be blotted with paper towels and allowed to air dry to effect naphtha removal, then measured. Asphalt retention will be calculated as follows:

$$\begin{aligned} \text{asphalt retention (oz./sq. yd.)} = & \\ & \frac{(\text{wt w/ asphalt - weight init.})\text{gms} \times 0.0352739 \text{ oz./gm.}}{(\text{area of specimen after test, sq. in.}) / 1296 \text{ sq. in./sq. yd.}} \end{aligned}$$

119.3.11 BASIS FOR REJECTION: If a roll fails to meet the weight requirements when it is weighed in accordance with Option A, that roll will be rejected. If the average of the test results shows that the material does not meet specification requirements for any property, the material shall be rejected.

119.3.12 TESTING TIME REQUIREMENT: Testing may require up to 20 working days. Paving fabric from a shipment shall not be placed until testing from the shipment is complete.

119.3.13 TACK COAT: The tack coat shall be composed of paving grade bituminous material of the type and grade specified by the manufacturer of

the fabric and shall meet the requirements of 85-100 or 120-150 penetration asphalt, CSS-1 or SS-1 emulsified asphalt, or AC-5 or AC-10 asphalt. The tack coat application rate shall consist of the total of the mean optimum asphalt content required by the fabric as determined by the ENGINEER plus an amount to satisfy the "surface hunger" of the existing pavement as determined by the ENGINEER.

119.4 MEASUREMENT AND PAYMENT

Measurement and payment shall be as specified in Section 335.

TABLE 119.3.1

PROPERTY	ASTM DESIGNATION TEST*	VALUE	UNITS
Weight (Full Roll)***	D 3776, Option A	3.5 to 8.0***	oz./sq.yd.
Weight (Specimens)***	D 3776, Option C	3.5 to 8.0**	oz./sq.yd.
Grab Tensile Strength	D 1117	80.0 min.	pounds
Elongation at Break	D 1117	50.0 min.	percent
Fabric Thickness***	D 1777	.030 min.**	inches
Asphalt Retention	None	0.10 min.	gal./sq.yd.

*Information about unique procedures for each of the tests is included in Subsections 119.3.5 through 119.3.9.

**Maximum allowable coefficient of variation is 12.5% where coefficient of variation = (standard deviation/mean) x 100%.

***For spun-bonded fabric these minimum values are to be: Thickness, 0.015 inches and asphalt retention, 0.07 gal./sq.yd.