

# GENERAL CONDITIONS AND SPECIAL PROVISIONS

## NON-WOVEN FIBERGLASS/POLYESTER INTERLAYER PAVING MAT

### 1. Description

This work shall consist of furnishing and installing a fiberglass/polyester interlayer-paving mat as shown on the plans and specifications.

### 2. Material Requirements

#### 2.1 Paving Mat

The paving mat shall be constructed of a wet-formed non-woven material consisting of at least 60% fiberglass (by weight), the remainder comprised of polyester and binder. The material shall have a minimum average roll value (MARV) unit weight of 3.69 oz./sq. yd (125 g/m<sup>2</sup>). The material shall be resistant to chemicals, mildew and rot, and shall not have any tears or holes that will adversely affect the in-situ performance and physical properties of the installed material. The paving mat shall meet the following physical requirements as follows:

PHYSICAL PROPERTIES OF ENGINEERED PAVING MAT

Property	Test Method	Units	Typical Value
Mass per unit area	ASTM D5261	g/m <sup>2</sup> (oz./yd <sup>2</sup> )	136 (4.0)
Tensile strength, MD	ASTM D5035 <sup>1</sup>	N/50 mm (lb/2 in)	> 200 (45)
Tensile Strength, CD	ASTM D5035	N/50 mm (lb/2 in)	> 200 (45)
Elongation at maximum load, MD	ASTM D5035	percent	< 5
Elongation at maximum load, CD	ASTM D5035	percent	< 5
Melting point	ASTM D276	C ( F)	> 230 (> 446)

\*MARV = Minimum Average Roll Value

Note: Conditions for tensile strength measurements:

Sample width: 50 mm      Sample length: 250 mm  
Gage length: 175 mm      Crosshead speed: 50 mm/min

**2.1.1** The mat manufacturer shall furnish a letter of certification covering the physical and engineering properties of the mat. A letter of certification shall be furnished with each shipment stating that the paving mat complies with the specification requirements.

**2.1.2** Special consideration (up to 5% additional this item, per project) will be given to mat containing recycled materials. (5%=100% recycled – 2.5%=50% recycled, etc.)

#### 2.2 Paving Mat Installation

Installation of paving mat interlayer shall be performed or supervised during start-up by a trained and experienced installer certified by the manufacturer or their agent(s).

**2.2.1** Surface to be overlaid with the paving mat shall be cleaned, dry and free and clear of all dirt and debris. All surface cracks over ¼ inch (.63 cm). shall be filled and brought to the level of the existing pavement surface. At the direction of the engineer, any and all irregular surface conditions shall be leveled by the use of a bituminous wedge or scratch course installed by hand or with the use of a mechanically powered asphalt-paving machine.

**2.2.2** Mat shall be installed to the surface using mechanically powered installation equipment or by hand installed means. Mechanical equipment shall be capable of installing full width rolls of up to 12.5 feet (3.81 meters) in width. The installation by hand may also be used in situations where areas require specially cut sections, and/or where mechanically installed methods can not be accomplished. Brooms or squeegees shall be used to remove any air bubbles and ensure paving mat is completely in contact with the tack-coated surface. If wrinkles occur, any wrinkle (1 inch [2.5 cm]) inch shall be slit and lapped in the direction of paving and seated into the tack coat to insure adhesion.

**2.2.3** Paving mat shall be overlapped to provide a minimum of 2 inches (5.1 cm) longitudinally and a minimum of 4 inches (10.2 cm) transversely. Overlaps on the transverse roll ends shall be in the direction of the paving operation to avoid paving mat pick-up during asphalt installation. All overlapping of paving mat shall be tack coated to ensure proper adhesion.

#### 2.3 Tack Coat Application

The asphalt tack coat shall be hot applied asphalt cement meeting grade requirements of AC, AR, or PG specifications. Every effort should be made in order to install paving mat over hot asphalt tack coat. It is recommended that an AC-20, PG 64-22, AR-8000 (see NOTE), or a 60-80 penetration grade of asphalt be applied for normal installations and temperatures. For extremely high summertime temperatures higher viscosity asphalt should be used. AC-30, PG 67-22, AR-8000 (see NOTE), or 40-60 penetration grades are appropriate.

NOTE: Residue grades such as AR grades do not specify initial viscosity. Bituminous materials specified for engineered paving mat installation should have initial or un-aged viscosities corresponding to the above AC grades.

<sup>1</sup>ASTM D5035 is designated for materials that exhibit <11% elongation (ASTM D5035, Section 1.2)

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**2.3.1** An optimum, tack coat application rate shall be 0.20 g/sq. yd (.90 l/m<sup>2</sup>). At the discretion and direction of the engineer, the application rate may be increased for heavily aged and/or deteriorated pavements (.18-.25 g/sq. yd [.82-1.1 l/m<sup>2</sup>]). In the event that the contractor has applied less and/or more tack coat than is required, the engineer shall direct the contractor to make the necessary adjustments to the equipment to achieve the desired results. The use of cutbacks, emulsion or materials containing solvents shall not be permitted for use as tack coat.

### 2.4 Application Procedures

The tack coat application shall be applied using a mechanically operated distributor truck, calibrated to meet the specified application rate as called for in the plans and specifications. The tack coat application temperatures shall be sufficiently hot so as to ensure proper coverage and proper adhesion of the paving mat to the pavement surface. The use of hand sprayers, squeegee and or brush-applied tack coat may be used in locations where the distributor truck cannot reach. Every effort shall be made to minimize the application of tack coat by hand-applied means. The tack coat shall be applied in a uniform application to sufficiently cover the surface prior to the installation of the paving mat. The surface shall be dry and free and clear of all debris and loose materials prior to the installation of the tack coat. Any and all pavement repairs to be made shall be made at the direction of the engineer prior to the installation of the tack coat.

**2.4.1** The application width of tack coat shall be sufficiently wide to cover the entire width of the paving mat, plus any additional width required for overlapping joints. The tack coat shall be applied only as far in advance of the mat installation to ensure a tacky surface at the time of the mat installation. Traffic shall not be permitted to drive on the tack coat at any time.

**2.4.2** Excess tack coat shall be cleaned from the pavement. In the event that installation operations must be curtailed, best practice is to barricade the affected area where the tack coat and mat have been installed, preventing vehicular traffic from driving on the prepared surface. In instances where the best practice is not feasible, the pavement may be opened to traffic after installation of engineered paving mat at the contractors/engineers discretion.

**2.4.3** Blotting the sealant, spreading sand or broadcasting bituminous asphalt mix over the paving mat shall be utilized to minimize and prevent construction and or paving tires/tracks from adhering to the tack coat and pulling up the mat. In the event that the paving mat has been displaced from the surface, additional rolling and or hand-brushing will be required to restore the bond between the surface and paving mat. An additional application of tack may be required to ensure adhesion. Additional tack coat or labor shall not be paid for as an extra and shall be considered incidental to the installation of the paving mat.

### 3 Method of Measurement

**3.1** The fiberglass/polyester interlayer-paving mat shall be paid for in accordance with these plans and specifications. The unit of measurement shall be paid for at the contract unit price per square yard installed in place. Overlaps in the paving mat will not be measured and included in the payment quantities.

**3.2** The accepted quantities subject to payment shall be paid for on the basis of furnishing all labor, materials (including asphalt tack coat), tools, equipment, and incidentals for performing the required work involved in furnishing and placing the mat, complete.



**Trumbull**

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