

Special Specification 3062

Polymeric Composite Paving Geogrid for Asphalt Pavement Overlay Reinforcement



1. DESCRIPTION

Furnish and install a high strength polymeric composite paving interlayer (the reinforcement material), within the pavement structure to provide mitigation against reflective crack propagation. The reinforcement material shall be composed of a polymeric grid structure (geogrid) that is covered by a polymeric textile fabric (geotextile) on one or both sides.

- 1.1. **Project Meeting Requirement** Before installing the reinforcement material, a pre-construction meeting shall be arranged at a mutually agreed site whereby the manufacturer's representative, prime contractor and paving interlayer subcontractor(s) (installer) shall be present. Notification of the meeting date and times shall be sent out by the Engineer not less than two weeks prior to the scheduled meeting.

A manufacturer's representative must be present, at minimum, for the first day of installation and available upon request by the Engineer throughout the length of the project duration required for the installation of the reinforcement material.

2. MATERIAL

- 2.1. **Polymeric Composite Paving Geogrid** The reinforcement material shall meet the requirements as set forth in Table 1. The reinforcement material shall be bituminous coated. Glass reinforcements shall not be considered for this specification. Provide independent laboratory results showing polymeric composite paving geogrid meets Table 1 to the Engineer at the pre-construction meeting or no later than five working days prior to installation.

Table 1
Polymeric Paving Geogrid Properties

Property	Test Method	Min	Max
Mass/Unit Area, (oz/yd ²)	ASTM D 5261	8	
Aperture Size, (in.)			1.5 x 1.5
Tensile Strength, lb/ft Machine Direction (MD) Cross-Machine Direction (CMD)	ASTM D 6637	3,425 3,425	
Tensile Strength at 3% Strain, lb/ft Machine Direction (MD) Cross-Machine Direction (CMD)	ASTM D 6637	835 835	
Identification of Fibers, °F (°C)	ASTM D 276	490 (255)	
Asphalt Retention, gal/sy	ASTM D-6140	0.10	

- 2.2. **Storage and Handling.** Store the reinforcement material in accordance with the manufacturer's recommendations in a dry covered condition free from dust, dirt, and moisture exposure.
- 2.3. **Tack Coat.** Furnish AC-20-5TR that meets the requirements of Item 300, "Asphalts, Oils, and Emulsions." The Engineer will obtain at least one sample of the tack coat binder per project in accordance with Tex-500-C, Part III, and test it to verify compliance with the specification. The Engineer will obtain the sample from the asphalt distributor immediately before use. Upon approval of the Engineer, a PG grade or emulsified asphalt tack coat binder may be used. Technical data specifications must be submitted at the preconstruction meeting.

3. CONSTRUCTION

- 3.1. **Surface Preparation.** Prepare the surface by removing raised pavement markers and dirt, sand, leaves, and other loose impediments from the surface before placing any material. The surface must be dry before applying tack coat binder. All vegetation and organic material shall be removed from the existing surface prior to tack coat placement. All pavement defects must be corrected as directed by the engineer or as shown on the plans.

Do not begin work when in the judgement of the Engineer weather conditions may not be suitable for paving. The air temperature must be 50°F and rising for placement of the asphalt tack coat or at the discretion of the Engineer.

- 3.2. **Tack Coat.** Apply a uniform tack coat at the manufacturer's recommended application rate for the existing pavement conditions. Apply the tack coat in a uniform manner to avoid streaks and other irregularities and patterns. Apply a thin, uniform tack coat to all contact surfaces of curbs, structures, and all joints. Apply tack coat to an area four inches wider than the reinforcement material, and wide enough to cover any overlaps.

- 3.3. **Reinforcement Material Placement.** In accordance with manufacturer's recommendations, place the reinforcement material, with the textile fabric directly on top of the tack coat and the grid facing up to the new asphalt, with minimum folds or wrinkles. Folds or wrinkles greater than 1 in. in height must be slit and laid flat or pulled out in the direction of paving. Apply additional tack coat as needed to repaired areas, or to any other areas as directed by the Engineer, to achieve an adequate bond to the substrate. Remove and replace damaged material that has excessive cuts, tears and or any other apparent damage in accordance with the manufacturer's recommendations.

Broadcast clean sand or loose asphalt mix to blot any excess tack coat that bleeds through the reinforcement material. Remove excess sand from the interlayer prior to placing the hot mix asphalt overlay. Do not power broom the reinforcement material as this may cause tearing and damage to the material surface.

Do not allow traffic, except required construction traffic, on the reinforcement material, unless approved by the Engineer. If traffic is permitted on the reinforcement material, lightly broadcast clean sand over the reinforcement material and remove the sand prior to paving.

Overlap longitudinal joints by a minimum of 4 in. Overlap transverse joints by a minimum of 6 in. Overlaps shall be tacked sufficiently such that the overlapping material will not become loose during paving. Do not apply additional tack on top of the reinforcement material.

4. MEASUREMENT

- 4.1. **Tack Coat.** Tack coat material will be measured in gallons at the applied temperature by strapping the distributor tank before and after road application.
- 4.2. **Polymeric Composite Paving Geogrid** The reinforcement material will be measured and paid for by the square yard of roadway on which it is placed.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit prices in the bid documents. This price is full compensation for cleaning the existing pavement, furnishing, preparing, hauling and placing all materials; for all labor, tools, equipment and incidentals necessary to complete the work.