

SPECIAL SPECIFICATION

3231

Reinforcement Grid for Asphalt Pavement Overlays

- 1. Description.** This Specification governs the sampling, testing, material requirements, and construction methods for reinforcement grid for asphalt pavement reinforcement in accordance with the details shown on the plans and the requirements of this specification.
- 2. Material Description.** The reinforcement material is a uniform, glass-fiber strand grid coated with an elastomeric polymer with a self-adhesive backing. This material shall function as reinforcement for joints and as a retardant to reflective cracking when placed under an asphalt concrete overlay.

There are 2 types of reinforcement grid; the following describes each type.

- Type I is intended for placement and reinforcement of the entire surface of the overlay. With mesh openings of 1" (center to center)
 - Type II is intended for reinforcement in transverse and longitudinal joints and to retard reflective cracking, and is placed directly over the joints as recommended by the Manufacturer. With mesh opening of 1" x 3/4" (center to center)
- 3. Sampling and Testing.** Sampling of reinforcement grid is performed in accordance with Texas Test Method Tex-735-I, "Sampling Construction Fabrics." Testing is performed in accordance to the methods stated under Article 4, "Material Requirements."

The Department will sample and test all materials; however, the Contractor shall be responsible for the costs of sampling and testing failing materials. Costs of sampling and testing failing materials will be assessed at the rate established by the Director of the Materials and Pavements Section of the Construction Division and in effect at the time of testing.

The Contractor shall submit a test report certifying that the proposed product meets all requirements of this specification.

4. Material Requirements.

A. General Requirements. The reinforcement grid shall have the following material properties:

- the grid shall resist damage during construction;
- the grid shall be certified to possess long-term resistance to chemical and biological degradation caused by the materials being reinforced; and
- the grid structure shall maintain dimensional stability during placement and under normal construction traffic.

B. Physical Requirements. The reinforcement grid shall conform to the following requirements when tested in accordance with the test methods specified. Specimen and ambient temperature shall be maintained at $77 \pm 2^\circ\text{F}$ ($25 \pm 1^\circ\text{C}$) during physical testing.

	Type I	Type II
Area Weight (ASTM D5261-92)	300 g/m ² (11 oz/sy)	500 g/m ² (16 oz/sy)
% Open Area (Tex-621-J)	50% min	50% min
Softening Point (ASTM C338)	537 C (1000 F min)	537 C (1000 F min)
Loss on Ignition (ASTM D4963-89)	15% min	15% min

C. Packaging and Labeling. The reinforcement grid shall be packaged in a protective wrap to prevent damage under normal storage and handling, including ultraviolet degradation. The material shall be stored in dry covered conditions free from dust, and should be stocked vertically to avoid misshapen rolls. Misshapen rolls and rolls exposed to direct ultraviolet light shall not be used unless otherwise approved by the Engineer.

Each roll shall be identified with a tag or label securely affixed to the outside of the roll on or near one end. The following information shall be included on the label:

- unique roll number, serially designated;
- manufacturer's lot number or control numbers, if any;
- name of manufacturer;
- brand name of product;
- style or catalog designation of the product; and
- roll width and length.

D. Safety Precautions. Gloves are recommended to prevent direct contact with the material. Goggles or other eye protection may be needed to prevent loose fibers from irritating the eyes.

5. Construction. The area on which the grid is to be placed shall be clean of dirt, dust or other deleterious material. Sweeping or other approved methods of surface preparation may be required by the Engineer. A Manufacturer's representative shall be present on the project for the duration of grid installation. This service will be subsidiary to this specification.

All base and pavement failures shall be repaired prior to placement of the grid. A level-up course of at least 0.75 in. hot-mix asphalt is required prior to installing the grid.

The surface temperature of the pavement before laying the grid shall be 70°F or higher unless otherwise approved. The grid shall not be placed when the general weather conditions, in the opinion of the Engineer, are not suitable.

Tack coat will be applied prior to placing the grid, unless otherwise directed by the Engineer. The following tack coat requirements supersede those outlined in the Hot-Mix Asphalt specification.

Unless otherwise shown on the plans or approved by the Engineer, furnish Track Free Tack Coat –Hot Applied with a residual application rate of 0.15-0.22 gal/yd², in accordance with Item 300, "Asphalts, Oils, and Emulsions."

Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

The Engineer will obtain at least 1 sample of the tack coat binder per project and test it to verify compliance with Item 300. The Engineer will obtain the sample from the asphalt distributor immediately before use.

Clean the surface before placing the tack coat. Unless otherwise approved, apply coat uniformly at the rate directed by the Engineer. The Engineer will set the rate between 0.15 and 0.22 gal of residual asphalt per square yard of surface area. Apply a thin, uniform tack coat all contact surfaces of curbs, structures, and all joints. Prevent splattering of tack coat when placed adjacent to curb, gutter, and structures. Roll the tack coat with a pneumatic-tire roller when directed. The Engineer may use Tex-243-F to verify that the tack coat has adequate adhesive properties. The Engineer may suspend paving operations until there is adequate adhesion.

Grid shall be laid out either by hand or mechanical means under sufficient tension to eliminate ripples. Should ripples occur, these shall be removed by pulling the grid tight or in extreme cases, for example, in tight radius, by cutting and relaying flat. A sharp knife may be used for cutting.

Transverse joints shall be lapped in the direction of the paver by 3 in. minimum. Longitudinal joints shall be lapped by 1 in. minimum. The surface of the grid should be rolled with a rubber coated drum roller or pneumatic tire roller to form a secure bond. Tires shall be cleaned regularly with an approved asphalt cleaning agent.

All grid placed in a day shall be covered with asphalt concrete the same day, within permissible laying temperatures, and compacted in accordance with applicable asphalt concrete specifications.

6. **Measurement.** This Item will be measured by the foot of joint or crack repaired or by the square yard of the actual area complete in place. When measurement and payment is by the linear foot, a minimum width will be shown on the plans. No allowance will be made for overlapping at joints.
7. **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 price bid for "Reinforcement Grid for Asphalt Pavement Overlay" of the type specified and by the width for the foot measurement. This price should be full compensation for cleaning the existing pavement; for furnishing, preparing, hauling and placing all materials, including tack; for all manipulation, including rolling, and for all labor, tools, equipment and incidentals necessary to complete the work.