SPECIAL SPECIFICATION

3010

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.
- Type II is intended for reinforcement in transverse and longitudinal joints, and is placed directly over the joints as recommended by the Manufacturer.

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 CST/M&P 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. The report will be certified by a licensed Professional Engineer.

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 ± 2°F (25 ± 1°C) during physical testing.

- **Type I**

<table>
<thead>
<tr>
<th>Test</th>
<th>Test Method</th>
<th>Requirement</th>
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</thead>
<tbody>
<tr>
<td>Tensile Stress @ 0.5% strain. MD(^1) &amp; CMD(^2), lbs/ft</td>
<td>“Tex-621-J, Testing Geogrids”</td>
<td>2,000 minimum</td>
</tr>
<tr>
<td>Percent open area, %</td>
<td>“Tex-621-J, Testing Geogrids”</td>
<td>50 minimum</td>
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1. Machine Direction
2. Cross-Machine Direction

- **Type II**

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<tr>
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</thead>
<tbody>
<tr>
<td>Tensile Stress @ 0.5% strain. MD(^1), lbs/ft</td>
<td>“Tex-621-J, Testing Geogrids”</td>
<td>2,000 minimum</td>
</tr>
<tr>
<td>Tensile Stress @ 0.5% strain. CMD(^2), lbs/ft</td>
<td>“Tex-621-J, Testing Geogrids”</td>
<td>4,000 minimum</td>
</tr>
<tr>
<td>Percent open area, %</td>
<td>“Tex-621-J, Testing Geogrids”</td>
<td>50 minimum</td>
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2. Cross-Machine Direction

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 Methods.** 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 first three days 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. HMA is recommended prior to installing the grid.

The surface temperature of the pavement before laying the grid shall be 60°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 should not be used either beneath or on the grid, unless specified by the Manufacturer. When tack is used, it shall be of the type and grade selected by the Manufacturer and will be considered subsidiary to this item.

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, with one or two passes being sufficient. Tires shall be cleaned regularly with an approved asphalt cleaning agent.

After the rolling is completed, construction and emergency traffic may be allowed to run on the grid. However, the Contractor shall ensure that no damage is caused to the grid by vehicles turning or braking, and that the grid is kept clean of mud, dust, and other objectionable material. Damaged sections shall be removed and patched at the Contractor’s expense.

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 linear 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.