

# Special Specification 3057

## Reinforcement Grid for Asphalt Pavement



### 1. DESCRIPTION

Furnish and place reinforcing grid for asphalt pavement.

### 2. MATERIALS

2.1. **Grid.** Provide a uniform, glass-fiber grid coated with a synthetic elastomeric polymer and a self-adhesive backing, of one of the following two types:

- Type I, for placement over the entire width of the roadway.
- Type II, placement over in transverse and longitudinal joints.

Provide a grid that will:

- Resist damage and maintain dimensional stability during construction,
- Resist chemical and biological degradation by the material being reinforced, and
- Meet the requirements of Table 1.

Provide a test report from the manufacturer or from a third party certifying that the grid meets all of the requirements of this specification.

Provide rolls of grid in widths appropriate to the work being performed, or of the width shown on the plans for Type II. Each roll must be packaged in a protective wrap to prevent damage under normal storage and handling, including ultraviolet degradation, and must be identified with a tag or label securely affixed to the outside of the roll on or near one end, displaying the following information:

- 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.

Store the grid in dry covered conditions free from dust, and stock vertically to avoid misshapen rolls. Do not use misshapen rolls or rolls stored in direct sunlight unless otherwise approved by the Engineer.

2.1.1. **Sampling.** Sampling of reinforcement grid is performed in accordance with Texas Test Method Tex-735-I, "Sampling Construction Fabrics."

The Department will collect at least one sample from the project and test for acceptance. The Department will sample and test all materials; however, the Contractor must 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.

<b>Table 1 Reinforcing Grid properties</b>			
<b>Property</b>	<b>Test Method</b>	<b>Type 1</b>	<b>Type 2</b>
Aperture Size, in MD <sup>1</sup> CMD	Tex-621-J, Part 4	0.80 ± 0.1 0.75 ± 0.1	0.80 ± 0.1 0.40 ± 0.1
Open area, %, Min	Tex-621-J, Part 5	55	50
60 min Coating Solubility Test <sup>2</sup>		Pass	Pass
Mass/Unit Area, g/m <sup>2</sup> (oz/yd <sup>2</sup> ), Min	Tex-616-J, Part 2	405 (12.0)	610 (18.0)
Tensile Strength, MD x CMD, kN/m (lb/in), Min	Tex-621-J, Part 8	100 x 100 (560 x 560)	100 x 200 (571 x 1142)
Tensile Modulus, 2% elongation, MD x CMD, kN/m (lb/in), Min	Tex-621-J, Part 8	80 x 80 (456 x 456)	80 x 160 (456 x 910)
Elongation at Break, %, Max	Tex-621-J, Part 8	3	3
Adhesive Bond, kg (lb), Min	See 3.4.1	4.5 (10)	4.5 (10)

1. "MD" and "CMD" indicate machine direction and cross-machine direction, respectively.
2. Submerge a 2 in x 2 in grid sample in d-limonene or other approved solvent for 60 minutes. The result is passing if the solvent remains clear.

- 2.2. **Tack Coat.** Provide tack coat binder in accordance with the governing specification for the asphalt concrete mixture.

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### 3. EQUIPMENT

- 3.1. **Grid Placement Equipment.** Provide a mechanical applicator, self-propelled or towed, capable of laying the grid uniformly at the full roll width if it is not placed by hand.
- 3.2. **Rollers.** Unless otherwise shown on the plans, furnish light pneumatic-tire rollers in accordance with Item 210, "Rolling."

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### 4. CONSTRUCTION

Install reinforcing grid and tack coat on existing surface or leveling course as required.

- 4.1. **Leveling Course.** Install a leveling course of asphalt concrete of the specified type over any areas showing excessive surface irregularities, cracking, rough joints, or other areas as directed. Saw cut slab joints to relieve pressure as directed. Allow the leveling course to cool to below 110°F surface temperature at least once before installing the grid.
- 4.2. **Tack Coat.** Apply tack coat as described in the governing specification for the asphalt concrete mixture at the rate specified or selected by the Engineer. If standard tack coat material is used, apply the tack coat before installation of the grid, unless otherwise directed. Allow adequate time for emulsion to cure before applying the grid.

If a track resistant tack coat material is used, apply the tack coat after installation and rolling of the grid, unless otherwise directed. Do not allow construction traffic on the tack coat until it has cured sufficiently to

become tracking resistant, as determine by the Engineer. If so directed, shoot a test strip at a location selected by the Engineer prior to tack coat application to verify the tracking resistance.

- 4.3. **Grid Placement.** Place the grid when the surface temperature is between 40°F and 140°F. Insure that the surface is dry before placing the grid. Place the grid by mechanical means or by hand using sufficient tension to prevent ripples, and remove any ripples that do form by pulling those areas tight. Use relief cuts as necessary in tight curves to prevent ripples. Overlap transverse joints 3 in to 6 in, and longitudinal by 1 in to 2 in, or more if recommended by the manufacturer. Place the grid over any manhole covers, drains, grates, or other fixtures in the roadway. Cut these sections out once all repairs and corrections have been made.
- 4.4. **Rolling.** Roll the grid before allowing other construction traffic. Roll for three to five passes or as directed to insure that the grid adheres to the underlying layer. Keep roller tires clean and asphalt-free. Avoid tight turning movements and rapids starts or stops that may damage the grid.
- 4.5. **Damage or Irregularities.** Remove and replace any sections of grid that show damage, debonding, poor adhesion, ripples, or other irregularities as directed. Overlap new sections of grid with in-place sections as described in 3.3, and reroll the new sections.
- 4.5.1. **Adhesive Bond Testing.** Perform adhesive bond testing on the rolled grid once every 3000 ft<sup>2</sup> and when directed. Use a spring suspension scale to hook a rib of the grid, and slowly pull upward. Grid that begins to separate from the surface with less than 10 lb pull may be deemed poor adhesion. Perform adhesive bond testing on installed grid or on a test strip as directed.
- 4.6. **Overlay Placement.** Install the asphalt concrete overlay on the same day the grid is placed. Protect the grid until placement of the overlay by limiting traffic to normal construction vehicles. Repair any damaged sections prior to placement of the overlay.

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## 5. MEASUREMENT

- 5.1. **Full width applications.** The reinforcing grid will be measured by the square yard of pavement containing grid.
- 5.2. **Crack and joint repairs.** The reinforcing grid will be measured by the linear foot of joint or crack repaired.

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## 6. 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 (TY I)" for full width applications; or for "Reinforcement Grid for Asphalt Pavement (TY II)" for joint and crack repairs. These prices are full compensation for surface preparation; furnishing, preparing, hauling, and placing materials; rolling; testing; repairs; and equipment, labor, tools, and incidentals.