PART 1 GENERAL

1.1 SECTION INCLUDES

A. Asphalt interlayer reinforcement system.

1.2 RELATED SECTIONS

A. Section 02740 - Asphalt Paving.
B. Section 02750 - Rigid Concrete Paving.
C. Section 02950 – Rigid Pavement Rehabilitation.

1.3 REFERENCES

A. Asphalt Institute Handbook.
C. ASTM D 276-00 – Standard Test Methods for Identification of Fibers in Textiles
E. ASTM D 4694 - Standard Test Method for Deflections with a Falling-Weight-Type Impulse Load Device.

J. FHWA Federal Highway Administration - Design Guidelines.

1.4 SYSTEM DESCRIPTION

A. Flexible Pavements: Provide GlasGrid interlayer reinforcement system installed between asphalt layers in a pavement structure to distribute the load and reinforce the pavement and reduce reflective cracking distresses.

B. Rigid or Composite Pavements: Provide GlasGrid interlayer reinforcement system installed between freshly leveled, rigid concrete pavement and the new asphalt overlay to absorb the strain and stress energy developed by traffic induced working concrete joints and by slab shrinkage and expansion due to thermal changes.

1.5 DESIGN REQUIREMENTS

A. Design GlasGrid interlayer system in accordance with the local codes and regulations and the design guidelines of Saint Gobain Technical Fabrics and/or Tensar Earth Technologies, Inc. and the following:
   1. Existing pavement should show no signs of poor drainage, pumping of fines, excessive deflections or structural instability.
   2. Perform a field evaluation including a visual distress survey in accordance with a pavement condition index methodology similar to ASTM D 5340 and deflection testing such as falling weight deflectometer similar to ASTM D 4694 to determine the effective modulus of the existing pavement section.
   3. Make all repairs as required prior to placement of interlayer system.

1.6 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer’s data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Samples: Enough material should be supplied to prepare two samples of each type GlasGrid Interlayer mesh specified. Each sample shall be 12 inch by 8 inch (305 mm by 203 mm) and include a minimum of 5 ribs.

D. Manufacturer’s Certificate: Certify Products meet or exceed specified requirements. Provide a separate certificate for each lot of material furnished.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications:
   1. Firm with at least five years documented experience in the manufacture and installation of geogrid interlayer mesh to reduce thermal cracking distress. Include brief description of each project and name and phone number of owner’s representative knowledgeable in each listed project.
2. Firm with documented evidence of an established quality control program to assure products with consistent compliance with the requirements of this specification.

B. Installer Qualifications:
1. Firm with documented experience in the installation of geogrid interlayer mesh systems with at least two projects of similar construction and scope.
2. Include brief description of each project and name and phone number of owner's representative knowledgeable in each listed project.

C. Pre-Construction Meeting:
1. Prior to construction of interlayer reinforcement system, conduct a meeting at the site with the materials supplier, the installer, and the Contractor to review the preparation and installation requirements.
2. Notify the Owner and the Engineer at least 3 days in advance of the time of the meeting.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store in a dry, covered location that is free of dust dirt and moisture. Prevent excessive mud, fluid concrete, asphalt, or other deleterious materials from coming in contact with reinforcement mesh materials.

C. Store at temperatures above minus 20 degrees F (minus 29 degrees C).

1.9 PROJECT CONDITIONS

A. Do not place mesh reinforcement when the surface is wet, or contaminated with oil, soil or excessive dust.

B. Do not place asphalt during wet or freezing weather that prevents conformance with specified requirements.

PART 2 PRODUCTS

2.1 MANUFACTURERS


B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 MATERIALS

A. GlasGrid 8501 Complete Road Reinforcement System: High strength open fiberglass mesh grid custom knitted in a stable construction and coated with an
elastomeric coating and self-adhesive glue. Mesh shall conform to the following performance properties:
1. Grid Size: 1/2 inch by 1/2 inch (12.5 mm by 12.5 mm) per mix gradation.
2. Tensile Strength: Component strand strength of 560 lbs/inch (100 kN/m) by 560 lbs/inch (100 kN/m) when tested in accordance with ASTM D 6637.
3. Elongation at Break: Maximum of 5 percent when tested in accordance with ASTM D 6637.
4. Melting Point: Minimum of 425 degrees F (218 degrees C) when tested in accordance with ASTM D 276.
5. Mass/Unit Area: 11 oz/SY (370 g/SM) when tested in accordance with ASTM D 5261.

B. GlasGrid 8502 Detail Repair and Reinforcement System: High strength open fiberglass mesh grid custom knitted in a stable construction and coated with an elastomeric coating and self-adhesive glue. Mesh shall conform to the following performance properties:
1. Grid Size: 1/2 inch by 1/2 inch (12.5 mm by 12.5 mm) per mix gradation.
2. Tensile Strength: Component strand strength of 1120 lbs/inch (200 kN/m) by 560 lbs/inch (100 kN/m) when tested in accordance with ASTM D 6637.
3. Elongation at Break: Maximum of 5 percent when tested in accordance with ASTM D 6637.
4. Melting Point: Minimum of 425 degrees F (218 degrees C) when tested in accordance with ASTM D 276.
5. Mass/Unit Area: 16 oz/SY (560 g/SM) when tested in accordance with ASTM D 5261.

C. GlasGrid 8511 Complete Road Reinforcement System: High strength open fiberglass mesh grid custom knitted in a stable construction and coated with an elastomeric coating and self-adhesive glue. Mesh shall conform to the following performance properties:
1. Grid Size: 1 inch by 1 inch (25 mm by 25 mm) per mix gradation.
2. Tensile Strength: Component strand strength of 560 lbs/inch (100 kN/m) by 560 lbs/inch (100 kN/m) when tested in accordance with ASTM D 6637.
3. Elongation at Break: Maximum of 5 percent when tested in accordance with ASTM D 6637.
4. Melting Point: Minimum of 425 degrees F (218 degrees C) when tested in accordance with ASTM D 276.
5. Mass/Unit Area: 11 oz/SY (370 g/SM) when tested in accordance with ASTM D 5261.

D. GlasGrid 8512 Detail Repair and Reinforcement System: High strength open fiberglass mesh grid custom knitted in a stable construction and coated with an elastomeric coating and self-adhesive glue. Mesh shall conform to the following performance properties:
1. Grid Size: 1 inch by 3/4 inch (25 mm by 19 mm) per mix gradation.
2. Tensile Strength: Component strand strength of 1120 lbs/inch (200 kN/m) by 560 lbs/inch (100 kN/m) when tested in accordance with ASTM D 6637.
3. Elongation at Break: Maximum of 5 percent when tested in accordance with ASTM D 6637.
4. Melting Point: Minimum of 425 degrees F (218 degrees C) when tested in accordance with ASTM D 276.
5. Mass/Unit Area: 16 oz/SY (560 g/SM) when tested in accordance with ASTM D 5261.
PART 3 EXECUTION

3.1 PREPARATION

A. Do not begin GlasGrid interlayer system until existing pavement condition has been evaluated and all repairs have been completed.

B. Seal cracks between 1/8 inch (3 mm) and 1/4 inch (6 mm) with an acceptable crack filler. Repair wider cracks using a method that provides a level surface. All holes shall be filled with hot asphalt and compacted level with adjacent surfaces.

C. Surfaces shall be mechanically cleaned by sweeping and vacuuming and be free of oil, vegetation, sand, dirt, water, gravel and other contaminants prior to placement of interlayer reinforcing.

D. If subgrade preparation is the responsibility of others, notify Engineer of unsatisfactory preparation. Do not begin work until unsatisfactory conditions have been rectified.

3.2 CONSTRUCTION

A. Construct GlasGrid interlayer reinforcement system in accordance with Saint Gobain Technical Fabrics and Tensar Earth Technologies, Inc instructions.

NOTE TO SPECIFIER Leveling Course:

1. Place the asphaltic leveling course in accordance with Section 02740. Leveling course shall be a minimum thickness of 3/4 inch (19 mm).

2. Crack areas showing excessive surface irregularities shall be leveled prior to placement.

3. Slab joint showing upward tenting shall be saw-cut to relieve pressure prior to leveling.

C. Tack Coat:

1. Tack coat shall be a material approved by the interlayer reinforcement manufacturer. Acceptable tack coat materials include hot AC 20-5TR, cationic emulsion CRS-2P, or trackless tack emulsion NTSS-1HM.

2. Do not dilute emulsified asphalts at the terminal or in the field.

3. Provide a certificate of compliance with the product specifications immediately prior to use.

4. Unless otherwise recommended by the manufacturer, apply tack coat at the rate of 0.02 to 0.05 gallons per square yard of surface area. The rate should be specified by the Engineer, but could vary depending on the installation or surface conditions.

5. Protect adjacent surfaces and prevent spattering of tack coat when placed adjacent to curbs, gutter, structures and other adjacent surfaces. Clean any surfaces where it has been contaminated by the tack coat.

D. Geogrid Placement:

1. Surface temperature shall be between 40 degrees F (5 degree C and 140 degrees F (60 degrees C) prior to laying interlayer reinforcement.
2. Interlayer reinforcement grid shall be laid out by mechanical means or by hand using sufficient pressure to eliminate ripples. Remove any ripples by pulling the grid tight. Cutting of the grid may be done on tight radii to prevent ripples.

3. Lap transverse joint in the direction of the paving 3 inches (75 mm) to 6 inches (150 mm).

4. Lap longitudinal joints shall be overlapped 1 inch (25 mm) to 2 inches (50 mm).

5. After placement activate self-adhesive glue by rolling with a rubber coated drum roller or a pneumatic tire roller until properly adhered. Clean tires regularly during rolling operations.

6. Protect interlayer reinforcing mesh until placement of the finished asphalt topping. Repair damaged sections prior to placement of finished asphalt topping.

E. Asphalt Overlay:
   1. Place the asphalt overlay course in accordance with Section 02740.
   2. Place the asphaltic overlay course the same day the interlayer reinforcing mesh is placed,
   3. Overlay course shall be a minimum thickness of 1-1/2 inch (40 mm).

3.3 FIELD QUALITY CONTROL

A. Testing and Inspection will be provided by the Owners Testing Agency as specified in Section 01400 Testing and Inspection Services. Notify the Engineer 72 hours in advance of testing.

B. Testing and Inspection shall be provided by an independent laboratory provided by the Contractor and acceptable to the Engineer.

C. Perform adhesion tests in accordance with the following:
   1. Place a 1 SY (1 SM) of interlayer reinforcing mesh on a properly prepared leveling course.
   2. Activate self-adhesive glue by rolling with a rubber tired roller or by applying adequate pressure to fully activate the pressure-sensitive adhesive.
   3. Use a calibrated spring balance by inserting the hook of the balance under the center of the mesh and pulling upwards until the mesh starts to pull away from the surface.
   4. A 20 pound (9kg) pull is required without pulling the mesh free or creating ripples in the mesh.
   5. Consult mesh manufacturer if mesh does not meet this pull rating and do not place asphalt topping until an acceptable adhesion is achieved.

D. Frequency of Tests:
   1. Adhesion Test: Provide a minimum of one test per 1000 SF (100 SM) of surface area.

3.4 MANUFACTURERS FIELD SERVICES

A. Provide the services of the manufacturer's field representative for the first day or first three days of interlayer reinforcing mesh installation, depending on the size of the project.

3.5 PROTECTION

A. Protect installed product until completion of project.
B. Repair or replace damaged products before Substantial Completion.

END OF SECTION