



SECTION 02795

POROUS PAVEMENT SYSTEM

Display hidden notes to specifier by using "Tools"/"Options"/"View"/"Hidden Text".

GENERAL

1.1 SECTION INCLUDES

- A. Grass reinforcement mesh system.

1.2 RELATED SECTIONS

- A. Section 02300 - Earthwork.
- B. Section 02620 - Subdrainage System.
- C. Section 02700 - Bases, Ballasts, Pavements, and Appurtenances.
- D. Section 02800 - Site Improvements and Amenities.
- E. Section 02810 - Irrigation System.
- F. Section 02900 - Planting.
- G. Section 02920 - Lawns and Grasses.

1.3 REFERENCES

- A. DOT Standards - _____ State Department of Transportation Standard Specifications.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Sub-base and base design shall conform to the applicable requirements of the DOT Standards for _____ State and the sub-base recommendations of the manufacturer.

1.5 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. Shop Drawings: Submit manufacturer's shop drawings including laying pattern and anchoring.
- D. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
 - 1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
 - 2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.
- E. Samples: Submit manufacturers samples of each product specified.
- F. Manufacturer's Certificates:
 - 1. Certify products meet or exceed specified requirements.
 - 2. ISO Certification certifying manufacturers quality management system is currently registered to ISO 9001:2000 quality standards.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer with a minimum for five years documented experience with the products specified and with ISO Certification certifying material compliance for GRASSPROTECTA.
- B. Installer Qualifications: Installer experienced in performing work of this section that has specialized in installation of work similar to that required for this project. Installer must also be able to provide skilled workman with satisfactory record of performance on landscaping or paving projects of comparable size and quality.
- C.
- D. Preinstallation Meetings:
 - 1. Convene a preinstallation meeting a minimum of two weeks prior to start of porous paving systems.
 - 2. Verify project requirements, subbase and base conditions, manufacturer's installation instructions and coordination with other related work.
 - 3. Require attendance of parties directly affecting work of this section, including the Contractor, engineer, installer, and manufacturer's representative.
 - 4. Comply with Division 1 requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials during handling and installation to prevent damage.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions recommended by manufacturer for desired results. Do not install products under conditions outside manufacturer's absolute limits.
- B. Do not begin installation of porous pavements until all hard surface paving adjacent to porous pavement areas, including concrete walks and asphalt paving, is completed.
- C. In cold weather, do not use frozen materials or materials coated with ice or frost, and do not build on frozen base or wet, saturated or muddy subgrade.
- D. Protect partially completed porous paving against damage from other construction traffic when work is in progress.
- E. Protect turf paving from traffic until grass root system has matured for at least 3 to 4 weeks. Use barricades to only permit accessible by emergency and fire equipment during and after installation.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PRODUCTS

1.10 MANUFACTURERS

- A. Acceptable Manufacturer: Polymer Group, Inc.; 70 Old Hickory Blvd, Old Hickory, TN 37138. 1-800-541-5519. Web Site: www.typargeosynthetics.com.
- B. Substitutions: Not permitted.

1.11 MATERIALS

- A. Grass Reinforcement Mesh: GRASSPROTECTA grass reinforcement mesh.
 1. Materials:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required. See manufactures recommendations for use of the Heavy GRASSPROTECTA 2kg and the Standard GRASSPROTECTA 1.2kg.**

- 1) Heavy GRASSPROTECTA 2kg
 - (a) Thickness: 0.55inch(14mm)
 - (b) Polyethylene: UV Stabilized 20 percent recycled HDPE.
 - (c) Color: Green.
 - (d) Chemical resistance: Excellent.
 - (e) UV resistance: High.
 - (f) Toxicity: Non Toxic.
 - (g) Tensile strength(MD): 16kN/m
 - (h) Yield point elongation(MD): 35%
 - (i) Residual thickness @ 500 kPa: 60%
 - (j) Slip risk PTV value: >40(low slip)
- 2) Standard GRASSPROTECTA 1.2kg
 - (a) Thickness: 0.45inch(11mm)
 - (b) Polyethylene: UV Stabilized 20 percent recycled HDPE.

- (c) **Color: Green.**
 - (d) **Chemical resistance: Excellent.**
 - (e) **UV resistance: High.**
 - (f) **Toxicity: Non Toxic.**
 - (g) **Tensile strength(MD): 12kN/m**
 - (h) **Yield point elongation(MD): 30%**
 - (i) **Residual thickness @ 500 kPa: 45%**
 - (j) **Slip risk PTV value: >40(low slip)**
2. Dimensions:
 - a. Mesh Rolls:
 - 1) **6.56 foot by 65.6 foot (2 m by 20 m).**
 - 2) **3.28 foot by 32.8 foot (1 m by 10 m).**
 3. **Accessories:**
 4. U-Pins: U shaped steel, 6.7 inches by 2.75 inches by 0.23 inch diameter.

B. Sub-base reinforcement: geogrid.

EXECUTION

1.12 EXAMINATION

- A. **Before beginning installation, verify site conditions are as indicated on the Drawings. Notify the Architect if site conditions are not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.**

1.13 GRASS REINFORCING MESH INSTALLATION

- A. **Install GRASSPROTECTA grass reinforcement mesh in accordance with grass reinforcement mesh system manufacturer's instructions.**
- B. **Install on newly landscaped areas and existing grassed areas as indicated on the Drawings.**
 1. **Install on existing grassed areas. after cutting the grass short.(Remove)**
 2. Ensure the surface is relatively flat and well drained. Cut grass short and remove clippings. Fill shallow depressions on the grassed surface with a 70:30 blend of sharp sand and good quality topsoil until level and firm. Seed may be applied now or later to avoid disturbance while laying the mesh.
 3. Install geogrid layer to improve ground stability and the durability of the grass surface. Install geogrid directly onto prepared grass surface. Fix as required to ensure the geogrid lies flat using metal U-pins. Overlap adjacent rolls a minimum of 8 inches and continue the laying and fixing process.
 4. Unroll the GRASSPROTECTA mesh and leave for a minimum of one hour to help the mesh regain its natural flatness before installing.
 5. Lay mesh directly onto the existing grass surface or geogrid layer and fix one edge using metal U-pins or plastic pegs, pulling the mesh taut. For external edges fix every 1 to 2 feet until there are no raised edges. Ensure the mesh lies flat to surface.
 6. Along the middle of each roll, fix mesh every 1.5 to 3 feet or as required to ensure the mesh lays flat.
 7. Butt adjacent rolls together with no overlapping.
 8. Secure the butt joins by using the fixing pins/pegs every 1 to 1.5 feet so each metal U-pin can join both edges. Fix the middle of each new roll every 1.5 to 3 feet as required. Repeat using additional pins/pegs to secure any raised areas or where any bridging or rippling of the rolls is evident.

9. Areas that have been leveled with sandy topsoil can be seeded at this stage.
- C. Do not use seeded areas until the grass has grown through the mesh apertures or a minimum of 4-8 weeks in the growing season. The area can be trafficked immediately, but traffic restriction is required.**
1. Once the grass has grown through, initial mowing can be done with blades set blades to cut fairly high so that contact with the mesh is not made. When the grass is established and the plants are entwined with the mesh, the grass can be cut normally.
 2. If any raised areas appear after the initial installation, use additional U-pins / plastic pegs to secure them.
 3. **Install on newly landscaped areas prepared as specified in Section 02920.**
 4. Soil surface should be well consolidated, reasonably level and cleared of debris. Existing depressions should be filled with a mixture of sharp sand and top soil and thoroughly consolidated.
 5. Prepare the surface as a lightly tilled and consolidated seedbed.
 6. Install Optional geogrid layer to improve ground stability and the durability of the grass surface. Install geogrid directly onto prepared grass surface. Fix as required to ensure the geogrid lies flat using metal U-pins. Overlap adjacent rolls a minimum of 8 inches and continue the laying and fixing process.
 7. Unroll the GRASSPROTECTA mesh and leave for a minimum of one hour to help the mesh regain its natural flatness before installing.
 8. Lay mesh directly onto the existing grass surface or geogrid layer and fix one edge using metal U-pins or plastic pegs, pulling the mesh taut. For external edges fix every 1 to 2 feet until there are no raised edges. Ensure the mesh lies flat to surface.
 9. Along the middle of each roll, fix mesh every 1.5 to 3 feet or as required to ensure the mesh lays flat.
 10. Butt adjacent rolls together with no overlapping.
 11. Secure the butt joints by using the fixing pins/pegs every 1 to 1.5 feet so each metal U-pin can join both edges. Fix the middle of each new roll every 1.5 to 3 feet as required. Repeat using additional pins/pegs to secure any raised areas or where any bridging or rippling of the rolls is evident.
 12. Areas that have been leveled with sandy topsoil can be seeded at this stage.
 13. Do not use seeded areas until the grass has grown through the mesh apertures or a minimum of 4-8 weeks in the growing season. The area can be trafficked immediately, but traffic restriction is required.
 14. Once the grass has grown through, initial mowing can be done with blades set blades to cut fairly high so that contact with the mesh is not made. When the grass is established and the plants are entwined with the mesh, the grass can be cut normally.
 15. If any raised areas appear after the initial installation, use additional U-pins / plastic pegs to secure them.
- D. Provide treated wood, concrete, steel or plastic curb edge retention at perimeter and edges of rootzone system as indicated on the Drawings.**
- E. Allow the grass to grow through the plastic mesh apertures, and intertwine with the plastic mesh filaments creating a strong, discreetly reinforced grass surface capable of withstanding vehicle loads, limiting damage and reducing soil compaction.**
- F. Regularly maintain grass as specified until substantial completion.**

1.14 SEED AND GRASSING

- A. Finish in accordance with manufacturer's instructions.
- B. Seeding:**
 - 1. Follow good seeding, fertilizing, and watering procedures for turf establishment based on regional practices.
 - 2. Increase watering frequency when free draining base materials are used.
 - 3. Seeding: As specified in Section 02920 - Lawns and Grasses.
- C. Sodding:**
 - 1. Install young sod free from netting materials.
 - 2. Press sod into the soil surface using a roller or other suitable equipment and follow normal watering procedures.
 - 3. Sodding: As specified in Section 02920 - Lawns and Grasses.

1.15 MAINTENANCE

- A. Maintain grass in accordance with manufacturer's instructions and as specified in Section 02920 - Lawns and Grasses.**

END OF SECTION