



## SECTION 02795

### POROUS PAVEMENT SYSTEM

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Porous grass paving grid system.

##### 1.2 RELATED SECTIONS

- A. Section 02300 - Earthwork.
- B. Section 02620 – Sub-Drainage 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 BODPAVE 85.
- 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. Pre-installation Meetings:
  1. Convene a pre-installation meeting a minimum of two weeks prior to start of porous paving systems.
  2. Verify project requirements, sub-base 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 sub-grade.
- 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.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: TYPAR Geosynthetics 70 Old Hickory Blvd, Old Hickory, TN 37138. Phone: (651) 330-2920. Fax: (651) 797-2319. Web Site: [www.typargeosynthetics.com](http://www.typargeosynthetics.com). E-mail: \_\_\_\_\_.
- B. Substitutions: Not permitted.

### 2.2 MATERIALS

- A. Porous Grass Paving Grids: BODPAVE®85 ground reinforcement paving grids.
  - 1. Materials:
    - a. Polyethylene: UV Stabilized 100 percent recycled HDPE.
    - b. Color:
      - 1) Black.
      - 2) Green.
      - 3) Natural.
    - c. Chemical resistance: Excellent.
    - d. UV resistance: High.
    - e. Toxicity: Non-Toxic.
  - 2. Performance Properties:
    - a. Load Bearing Capacity (filled): Up to 367 tons per square yard (400 tons per square meter).
    - b. Basal Support and Anti-Shear: Integral 1.35 inches long Cross and T section ground spikes with spikes per 18 per paver.
    - c. Open Cell Percentage: Top 92 percent, base 75 percent.
    - d. Connection Type: Overlapping edge loop and cell connection.
    - e. Interlock Mechanism: Integral self locking snap-fit clips.
  - 3. Dimensions:
    - a. Paver Grid: 19.7 inches by 19.7 inches by 1.96 inches (500 mm by 500 mm by 50 mm) plus 1.37 (35 mm) inch ground spike.
    - b. Installed Paver Grids: 19.7 inches by 19.7 inches (500 mm by 500 mm) or 4 paver grids per 1.2 SY.

- c. Structure: Type Rigid-walled, flexible, semi-closed, castellated 2.6 inch and 1.8 inch round shapes cell combinations.
- d. Cell wall thickness: 0.1 inch to 0.2 inch.
- e. Weight (Nominal): 3.4 lbs per paver grid.

## PART 3 EXECUTION

### 3.1 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.

### 3.2 PREPARATION

- A. Sub-Grade Preparation:
  1. Prepare sub-grade as specified in Section 02700. Verify sub-grade in accordance with porous paving system manufacturer's instructions.
  2. Excavate area allowing for unit thickness and the engineered base depth (where required).
  3. Provide adequate drainage from excavated area if area has potential to collect water, when working with in-place soils that have poor permeability.
  4. Provide a sub-drainage system as specified in section 02620.
  5. Ensure in-place soil is relatively dry and free from standing water.
  6. Uniformly grade base.
  7. Level and clear base of large objects, such as rocks and pieces of wood.
- B. Sub-Base Preparation:
  1. Install sub-base as specified in Section 02700. Verify sub-base is installed in accordance with porous paving system manufacturer's instructions.
  2. Coordinate base installation and preparation with sub-drains specified in Section 02620.
  3. If required, place a geotextile separation layer between the natural ground and the 'engineered base.
  4. Place engineered base to a thickness of:
    - a. \_\_\_ mm ( \_ inches).
  5. Install sub-base reinforcement geogrid as required to reduce the total thickness of the granular sub-base as recommended by the manufacturer.

### 3.3 POROUS PAVING INSTALLATION

- A. Install BODPAVE®85 ground reinforcement paving grid system in accordance with porous paving system manufacturer's instructions.
- B. Provide treated wood, concrete, steel or plastic curb edge retention at perimeter and edges of porous paving system as indicated on the Drawings.
- C. Bedding Layer: Provide the sand: soil or sand: compost root zone bedding layer 2 inches to 2.75 inches thick over properly prepared sub-grade. Sand: soil or sand; compost such as used in sports/golf construction and normally identified as a 60:40 or 70:30 ratio blend. The use of site materials or in-situ self-blending is NOT recommended. Verify that it is level and well consolidated.
- D. Paver Placement:

1. Place paving grids firmly into the surface and with the 2 sets of edge loop connectors facing in directions of laying so that the ground spikes are pressed fully into the bedding and so the base of the paver cells sit flat on the bedding layer surface.
  2. Connect adjacent pavers together by slotting the edge cell connectors down into the edge loops.
  3. Continue to progress over the area in rows.
  4. Lock pavers in place with snap-fit clips.
  5. If paver separation is required, clips can be dislocated by hand or screwdriver pressure or by gently twisting the paver joints.
- E. Offset paver grids in 1 cell increments or cut to fit around obstructions and curves using a hand or power saw. Do not use cut-pieces, which do not have integral snap-fit connectors.
- F. Paver Fill Seed Bed: Apply 1.7 inches (43 mm) thick layer of root zone paver fill to fill pavers. Fill to finished levels: 0.2 inch (5 mm) below top of the cells after settlement. A light tamper may be used to consolidate the pavers and settle root zone fill. Do not overfill or over consolidate.
- G. Carry out a normal seeding, fertilizing and watering program as specified in Section 02920. A light top dressing may be applied to just cover the seed and to provide adequate germination conditions. Do not overfill the paver cells. Thin-cut or washed turf may be lightly rolled into the surface as an alternative if required.
- H. The surface may be used for traffic immediately for critical access purposes. Allow grass to fully establish prior to regular use.
- I. Regularly maintain grass as specified.

### 3.4 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.

### 3.5 MAINTENANCE

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

END OF SECTION