

# Grass Paver CSI Specification

## SECTION 32 12 43

### POROUS FLEXIBLE PAVING

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## Part 1: General

### 1.1 SCOPE

- A. This specification shall govern the implementation, performance, material, and fabrication pertaining to the GroundPro GRS paving system, as specified in this Section.
- B. All work is to be completed per the design requirements of the Engineer of Record and/or Architect, to meet or exceed the Manufacturer's Design and Installation Requirements.

### 1.2 RELATED SECTIONS

- Section 31 20 00 - Earth Moving
- Section 33 46 00 - Sub-drainage
- Section 32 10 00 - Bases, Ballasts, and Paving
- Section 32 30 00 - Site Improvements
- Section 32 90 00 - Manufacturers of Turfs and Grasses

### 1.3 REFERENCES

- ASTM: Specifications of the American Society for Testing and Materials
- AASHTO: American Association of State Highway and Transportation Officials

### 1.4 SYSTEM DESCRIPTION

- A. GroundPro GRS is a flexible permeable (porous) paving system, using polymeric structures filled with soil, sand, or aggregate to prevent damage to vegetation in trafficked areas.
- B. Major Components of the Complete System
  1. Base material.
  2. GroundPro GRS units/panels.
  3. A combination sand with topsoil or all topsoil mixture.
  4. Selected grass for seed, hydroseeding/hydro-mulching, or sod.
5. The base material (if required) and GroundPro GRS units function together to provide support of live loads.
6. The GroundPro GRS units and topsoil function together to provide vegetation support and protection.

## 1.5 SUBMITTALS

- A. Under provisions of Section 01 30 00, a submittal of shop drawings, product data, warranty, general layout, and anchoring shall be provided for review.
- B. Certificates
  - 1. Manufacturer is currently registered to ISO 9001 quality standards.
  - 2. Product is manufactured of recycled polyethylene material.
- C. Flexible permeable paver samples for review:
  - 1. Provide a unit of the product for review.
  - 2. Sample may be retained by Owner.
  - 3. Manufacturers named as acceptable herein are not required to submit samples.

## 1.6 QUALITY ASSURANCE

- A. Materials
  - 1. All materials, methods of construction, and workmanship shall conform to applicable requirements of ASTM and AASHTO Standards, unless otherwise specified.
  - 2. All material shall be supplied from a single manufacturer for the entire project.
  - 3. The quality of material and the finished components shall be subject to inspection by the Engineer. Such inspection may be conducted on-site upon delivery or at any point thereafter. The components shall be subject to rejection at any time if material fails to meet any of the specification requirements, even though sample components may have been accepted as satisfactory. Components rejected after delivery to the site shall be marked for identification and shall be removed from the site at once.
- B. Inspection
  - 1. All components shall be inspected for general appearance, dimensions, soundness, etc.
  - 2. Upon completed placement of the flexible permeable paver system (as specified), the installation shall be inspected by specifying entity or authorized representative and signed off on as acceptable and meeting project specifications.
- C. Defects
  - 1. Products with structural defects shall be immediately removed and replaced with acceptable parts. The Specifying Engineer, before final acceptance, shall carefully inspect repairs/replacements.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Components shall be unloaded, handled, and stored in an area protected from traffic and in a manner to prevent damage.
- B. If stored for an extended period, additional measures should be taken to prevent UV and weathering damage.
- C. Stored components should be checked at least once a week. A check of the stored area should be done to make any minor repairs to the cover or to restack any components that could have fallen.

## PART 2: PRODUCTS

### 2.1 MANUFACTURER

- A. The product shall be manufactured by Brentwood Industries, Inc. 500 Spring Ridge Drive, Reading, PA 19610 (610-374-5109), Email: [info@stormtank.com](mailto:info@stormtank.com), Website: <https://www.stormtank.com>

### 2.2 GROUNDPRO GRS FLEXIBLE PERMEABLE PAVER UNITS

- A. The polymeric flexible permeable paver units indicated on the construction plans, capable of withstanding, at a minimum, a live load consisting of the design truck (HS-20).
- B. Injection molded units/panels of 100% recycled polyethylene with a UV stabilizer.
1. Manufactured in rows of support structure that are molded together to form a singular molded unit.
  2. These rows are bypassing (no continual straight line can be drawn between rows) to ensure continuous contact between any traffic and the paver surface.
  3. Paver color: Black
  4. Weight per paver, approximately 4.6 lbs. [2.09 kg].
- C. Connectors:
1. 16 male and 16 female snap fit connectors per panel, with two sides being male connectors and two sides being female connectors.
  2. Connectors are offset between rows and not molded in a singular straight row.
  3. Paver rolls are assembled/constructed by snapping single units together end-to-end. Paver rolls are connected to one another by snapping paver rolls together side-to-side.
- D. Rolls:
1. Rolls are manufactured in single unit widths.
  2. Rolls are manufactured in ten-, twenty- or thirty-unit lengths.

### 2.3 GRASS (EITHER SOD OR SEED)

- A. Sod: Use a sod with a soil thickness of 0.5" [12.70 mm] from a reputable local grower. Species should be wear-resistant, free from disease, and in excellent condition. Sod shall be grown in sand or sandy loam soils only. Sod grown in soils of clay, silt, or high organic materials such as peat, will not be accepted.
- B. Seed: Use seed materials, of the preferred species for local environmental and projected traffic conditions, from certified sources. Seed shall be provided in containers clearly labeled to show seed name, lot number, net weight, % weed seed content, and guaranteed % of purity and germination.

## PART 3: EXECUTION

### 3.1 GENERAL CONDITIONS

- A. Review manufacturer's installation procedures and coordinate installation with other work affected, such as grading, excavation, utilities, construction access, erosion control, etc. The following is a basic understanding of the execution process and does not constitute all the necessary minimum requirements.
- B. Cold weather installation or assembly should not be undertaken when temperatures are below 40° F [4.44° C]. Frozen, wet, or muddy areas should be avoided and allowed to dry before installation.

### 3.2 INSPECTION

- A. Examine subgrade and base course installed conditions. If found unsatisfactory, contact the Engineer and/or Architect. Do not start installation until unsatisfactory conditions are corrected.
- B. For fire lane installations: prior to installing base course for turf paving, obtain approval of local fire authorities of sub-base.

### 3.3 PREPARATION

- A. Subgrade Preparation:
  - 1. Excavate area allowing for the specified base material and 1.25" (31.75 mm).
  - 2. Prepare subgrade for proper support of flexible paver surface, preventing issues like settling or material migration. Clear the base of objects such as rocks, wood, etc.
- B. Base Material:
  - 1. Install base material in accordance with prepared plans and manufacturer's installation guidelines.
    - a. If required, place a separation layer of geotextile before placing the base material.
    - b. In low permeability soils, provide adequate drainage to prevent pooling of water in the base material or flexible paver units.
    - c. Place base materials in lifts not to exceed 6.00" [152.40 mm], compacting each lift separately to 95% Modified Proctor.
    - d. Base materials shall be two-parts aggregate to one-part topsoil and maintain a void ratio of 30%.
  - 2. Leave 1.25" [31.75 mm] of depth below final grade for unit and fill/vegetation.

### 3.4 FLEXIBLE PAVER INSTALLATION

- A. Refer to the Manufacturer's requirements and information as shown on the engineer's plans.
- B. Begin by placing the pavers face up and connecting pavers via the male/female connectors between units.
  - 1. Be sure to leave a minimum 1.00" [25.4 mm] perimeter gap between the pavers and any objects or finished surfaces.
  - 2. Be sure to anchor units as necessary to prevent slip or curling during materials placement
- C. Place fill into paver cells in sections, ensuring no access on unfilled sections.
  - 1. Dump material from buckets into paver cells, only accessing with tired vehicles once the pavers are full of material. Spread the material with the smooth side of a landscape rake and finish by sweeping the loose material from the cells.
  - 2. In sod installation, vigorously sweep the cells after dumping the loose material to push it into the cells and remove loose material. This will make space in the cells for the soil backing of the sod.

3. In seed installation, the material should be compacted by using water. Once compacted, place an additional layer of material into the cells and finish by sweeping the loose material off.

### 3.5 GRASS INSTALLATION

- A. Stabilization should occur immediate after filling the units with the soil mixture. If exposed to weather conditions, the installation shall be inspected, and further remediation may be necessary until an adequate stand of vegetation is achieved.
  1. Preferred method: Sod - Install sod directly over units, ensuring the sod is placed with tight joints. Sodded areas should then be rolled to push the soil backing into the paver cells and ensure root protection. Areas shall be maintained with adequate water till established, typically two mowing cycles. DO NOT DRIVE, except for emergency access, on the installation until the sod root structure has had adequate time to establish with the fill mixture, typically 3-4 weeks.
  2. Hydroseeding - Spray the seed mixture at rates shown on plans and per hydroseeding manufacturer's recommendations. Coverage must be uniform, complete and cover with a hydro-mulch or straw. Areas shall be maintained and kept moist until established vegetation is achieved. Seed does not provide a full germination rate, so bare areas must be reseeded immediately. DO NOT DRIVE, except for emergency access, on the installation until the sod root structure has had adequate time to establish with the fill mixture, typically 4-8 weeks.

### 3.6 MAINTENANCE

- A. Normal lawn care should be undertaken. Dethatching is possible, but equipment should be setup to prevent damage to the product by penetrating too deeply. DO NOT aerate, as it could damage the product and is not necessary given proper vegetation establishment.
- B. Snow removal is possible, though the blade should be kept a minimum of 1" [25.40 mm] off the units by using skids on the corners of the blade or by raising the blade. A flexible rubber blade edge is another alternative.

— END OF SECTION —