

## ***Specification Sheet***

### **Gravel Paver**

**Technical Specification - Gravel Filled/Covered Flexible Porous Paver with Integrated Geotextile Fabric and Anchors  
CSI Master Format 32 12 43 Flexible Porous Pavement  
(1997 Section 02795 Porous Pavement)**

#### **PART 1 - GENERAL**

##### **1.01 General Provisions**

A. The Conditions of the Contract and all Sections of Division 1 are hereby made a part of this Section.

##### **1.02 Description of Work**

A. Work Included:

1. Provide and install sandy gravel roadbase as per Geotechnical Engineer's recommendations and/or as shown on drawings, to provide adequate support for project designs loads. See 2.02 Materials.
2. Provide Gravel Filled/Covered Flexible Porous Paver Paving products including Gravel Filled/Covered Flexible Porous Paver units, anchors and installation per the manufacturer's instructions furnished under this section.
3. Provide and install fine decorative gravel to fill the Gravel Filled/Covered Flexible Porous Paver units.

B. Related Work:

1. Subgrade preparation under Section 02200 - Earthwork.
2. Subsurface drainage materials - Section 02710 - Subsurface Drainage, when needed.

##### **1.03 Quality Assurance**

A. Follow Section 01340 requirements.

B. Installation: Performed only by skilled work people with satisfactory record of performance on landscaping or paving projects of comparable size and quality.

##### **1.04 Submittals**

A. Submit manufacturer's product data and installation instructions.

B. Submit a 10" x 10" section of Gravel Filled/Covered Flexible Porous Paver product for review. Reviewed and accepted samples will be returned to the Contractor.

C. Submit material certificates for base course and sand fill materials.

1.05 Delivery, Storage, and Handling

A. Protect Gravel Filled/Covered Flexible Porous Paver material units from damage during delivery and store under tarp when time from delivery to installation exceeds one week.

1.06 Project Conditions

A. Review installation procedures and coordinate Gravel Filled/Covered Flexible Porous Paver work with other work affected.

B. All hard surface paving adjacent to Gravel Filled/Covered Flexible Porous Paver areas, including concrete walks and asphalt paving, must be completed prior to installation of Gravel Filled/Covered Flexible Porous Paver.

C. Cold weather:

1. Do not use frozen materials or materials mixed or coated with ice or frost.
2. Do not build on frozen work or wet, saturated or muddy subgrade.

D. Protect partially completed paving against damage from other construction traffic when work is in progress.

E. Protect adjacent work from damage during Gravel Filled/Covered Flexible Porous Paver installation.

**PART 2 – PRODUCTS**

2.02 Materials

A. Base Course:

Sandy Gravel material from local sources commonly used for roadbase construction, passing the following sieve analysis.

% Passing	Sieve Size
100	3/4"
85	3/8"
60	#4
30	#40
<3	#200

1. Sources of the material can include either "pit run" or "crusher run". Crusher run material will generally require sharp sand to be added to mixture (25 to 35% by volume) to ensure long term porosity.

2. Alternative materials such as crushed shell, limerock, and/or crushed lava may be considered for base course use, provided they are mixed with sharp sand (25 - 35%) to ensure long term porosity, and are brought to proper compaction.

(Crushed shell and limerock alone can set up like concrete unless sand is added.)

B. Gravel Filled/Covered Flexible Porous Paver Paving Units: Lightweight injection molded plastic units 0.5x0.5x0.025 m (20"x20"x1" high, 2.7 ft<sup>2</sup> each) with hollow rings rising from a strong open grid with a geotextile fabric heat fused to the bottom of the grid. Units will be shipped in pre-assembled rolls of various dimensions. Loading capability is equal to 5700 psi when filled with sand, over appropriate depth of roadbase. Standard colors are black, gray, terra cotta, and tan, with custom colors available. Unit weight = 535 gr (19 oz.), volume = 8% solid.

C. Gravel Fill: Obtain clean, washed, fine decorative gravel, must be sharp and angular (not rounded) stone, granite hardness, to fill the 25 mm (1") high rings and spaces between the rings, not to be overfilled more than 1/4" (6 mm). Maximum Size of stone should be: 3/16" to 3/8" (5 mm to 10 mm) and uniform in size - not graded.

D. Anchors: Typical anchors shall be 8" long nails with "fender" type washers 7 x 30 mm od (5/16" id x 1.25" ) od, all galvanized metal or similar corrosion resistant coating. Supplied anchors may vary in size and type based on source and availability.

## **PART 3 – EXECUTION**

### 3.01 Inspection

A. Examine subgrade and base course installed conditions. Do not start Gravel Filled/Covered Flexible Porous Paver installation until unsatisfactory conditions are corrected. Check for poor drainage, improperly compacted trenches, debris, and improper gradients.

B. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance. If existing conditions are found unsatisfactory, contact Project Manager for resolution.

### 3.02 Preparation

*(Ensure that subbase materials are structurally adequate to receive designed basecourse, wearing course, and designed loads. Ensure that grading and soil porosity of the subbase will provide adequate subsurface drainage.)*

A. Place base course material over prepared subbase to grades shown on plans, in lifts not to exceed 150 mm (6"), compacting each lift separately to 95% Modified Proctor. Leave 25 mm (1.0") for Gravel Filled/Covered Flexible Porous Paver unit and gravel fill to Final Grade.

### 3.03 Installation of Gravel Filled/Covered Flexible Porous Paver Units

A. Install the Gravel Filled/Covered Flexible Porous Paver units by placing units with rings facing up, and using small male/female connectors provided along each edge to maintain proper spacing and interlock the units. Cutting can be performed with pruning shears and knife, or portable power saw. Units shall be anchored to the base course, using anchors described above, as required to secure units in place from movement by traffic, at an average rate of 6 pins per square meter (high speed, heavy vehicles, fast

turning movement will require additional anchors). Tops of rings shall be flush with the surface of adjacent hard surfaced pavements.

B. Install gravel into rings after the units are anchored by "backdumping" directly from a dump truck, or from buckets mounted on tractors, with a minimum depth of 6", then exit the site by driving forward over rings already filled. Sharp turning of vehicles on bare rings must be avoided. The gravel is then spread laterally from the pile using power brooms, blades, flat bottomed shovels and/or wide "asphalt rakes" to fill the rings. A stiff bristled broom should be used for final "finishing". The gravel should be "compacted", if necessary, by using a vibrating plate or small roller, with the finish grade no less than the top of rings and no more than 6 mm (0.25") above top of rings.

C. If a binder for fill stone is desired (due to traffic speed, concentrated water flow, or other reason), use Portland cement, mixed dry at 10% by weight with fill stone,. Place into rings after thoroughly wetting the base, then lightly mist the surface after fill and compaction. Then, cover with a water resistant tarp, or plastic sheeting material for a minimum period of 3 days, or until the mixture has bonded.

### 3.06 Cleaning

A. Remove and replace segments of Gravel Filled/Covered Flexible Porous Paver units where three or more adjacent rings are broken or damaged, reinstalling as specified, with no evidence of replacement.

B. Perform cleaning during the installation of work and upon completion of the work. Remove all excess materials, debris, and equipment from site. Repair any damage to adjacent materials and surfaces resulting from installation of this work.

END OF SECTION

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