

# *Technical Specification*

## HoofGrid and HoofGrid HD soil stabilizing grid system

### **SECTION 313219 of the CSI Master Format 2004**

**-HoofGrid/HoofGrid HD** when used for Geogrid layer separation

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

##### 1.01 General Provisions

A. The Conditions of the Contract and all Sections of Division 00 through 01 are hereby made a part of this Section.

##### 1.02 Description of Work

###### A. Work Included:

1. Provide and install a suitable, stable sub-base as per Geotechnical Engineer's recommendations and/or as shown on drawings, to provide adequate support for project designs loads.
2. Provide **HoofGrid/HoofGrid HD** products and installation per the manufacturer's instructions furnished under this section.
3. Provide and install clean gravel fill of the **HoofGrid/HoofGrid HD** grid units.
4. Provide and install clean sand overfill of the grid system.

###### B. Related Work:

1. Sub grade preparation under Division 310000 – Earthwork, and all related sections and sub-sections.
  - A. Specifically note that any backfill of the proposed grid unit area must be hard, clean, angular rock, minimum 2" and maximum 3" size, and of a type that will not degrade or decompose over time.
  - B. It is recommended the base of the sub grade should be native, undisturbed soil, with all contaminants and overfills removed.

##### 1.03 Quality Assurance

- A. Follow Section 014300 requirements.
- B. Installation: Performed only by skilled work people with satisfactory record of performance on Geogrid applications. A Certification for installation of **HoofGrid/HoofGrid HD** is available upon request, but is not required.

##### 1.04 Submittals

- A. Submit manufacturer's product data and installation instructions.
- B. Submit 1 tile section of **HoofGrid/HoofGrid HD** product for review. Reviewed and accepted samples need not be returned to the Contractor.
- C. Verify sand fill type/requirements with designer, client, or engineer. Submit material certificates and samples for base course and sand fill materials prior to installation.

##### 1.05 Delivery, Storage, and Handling

A. Protect **HoofGrid/HoofGrid HD** material units from damage during delivery and storage. Allow product to be delivered and "exposed", or be acclimated to the current elements for at least one day prior to installation. Allow individual, pre-assembled grid layers to lie in installation area, for at least 2 minutes prior to connecting together.

##### 1.06 Project Conditions

- A. Review installation procedures and coordinate **HoofGrid/HoofGrid HD** work with other work affected.
- B. All hard surface paving adjacent to **HoofGrid/HoofGrid HD** areas, including concrete walks and asphalt paving, must be completed prior to installation of **HoofGrid/HoofGrid HD**.
- 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 sub grade.
- D. Protect partially completed Installation against damage from other construction traffic when work is in progress.
- E. Protect adjacent work from damage during **HoofGrid/HoofGrid HD** installation.

#### **PART 2 - PRODUCTS**

##### 2.01 Availability

- A. Distributor: Eco-Terr Distributing Inc., 3020 Iss-Pn Lk Rd PMB 202, Sammamish, WA 98075. Call from USA (425) 864-1701; Fax (425) 391-4890.
- B. Supplier: Please Check website at [www.hoofgrid.com](http://www.hoofgrid.com) for closest supplier or call (425) 864-1701.

## 2.02 Materials

### A. Leveling Layer: 5/8" (-) Gravel material from local sources.

1. Sources of the material can include only clean, screened angular rock that will not break down over time.
2. Alternative materials are not recommended.

**B. HoofGrid/HoofGrid HD Units:** Lightweight injection molded, 100% post-consumer recycled plastic LDPE tile units 33x33x3 cm (13.1233"x13.1233"x 1.1811" high,) with hollow cells. Units will be shipped in pre-assembled layers of 3 tiles x 4 tiles equaling 14.3519 square feet. Load bearing capability is equal to 25.602 tons/ft<sup>2</sup> for **HoofGrid**, and 35.843 tons/ft<sup>2</sup> for **HoofGrid HD** when filled with gravel, over appropriate depth of leveling layer and stable sub base. Standard colors are black, with custom colors available for special orders. Minimum order required.

**C. Gravel Fill:** Obtain clean, screened gravel, free of all fines or shavings that will not break down over time, to fill the grid cells to "level full"

**D. Anchors:** Anchors are not required for flat or minor sloped areas.

Typical anchors for medium to heavy slopes shall be 8" minimum long "j-hook" type pins, all galvanized metal or similar corrosion resistant coating. Anchors may vary in size and type based on source and availability. Spacing as required to limit downward movement, typically approx. 12 feet apart in all directions.

## PART 3 - EXECUTION

### 3.01 Inspection

A. Examine sub grade and base course installed conditions. Do not start **HoofGrid/HoofGrid HD** 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

A. Place the Leveling Layer material over prepared sub base to grades shown on plans, in lifts not to exceed 1"(if using a sod roller), or 2" (if using a plate compactor or large rolling machine), compacting each lift separately enough to provide a stable, flat, non-shifting surface. **Do not "over compact"**.

For intended or specified **flat** surfaces below grade (sloped or not), grading should be "straight" to within 1/2" for every three feet in length, and not create a "point" in the grade. Use a straight edge or laser level to assist and verify. For slope stabilization, surface must be "straight" to within 1" per every three feet in length, and not create a "point" in the grade. Rolling contours within these tolerances will not affect the grid unit performance.

### 3.03 Installation of **HoofGrid/HoofGrid HD**

A. Establish a layout line (using string and stakes) from one corner, heading 2 directions to form a 90 degree guide point. For radius applications, use a center layout line approach to keep the grid units straight in the radius area. Install the **HoofGrid/HoofGrid HD** units by starting in one corner, with one layer unit, with the "tabs" (not the slots) facing the directions of installation.

Allow individual, pre-assembled grid layers to "lie" in the installation area for at least 2 minutes, but no more than 5 minutes, prior to connecting together. Do this by "staging" the next row before actually connecting it to the next grid section.

Then proceed to connect additional units perpetually until the entire surface has been covered. Slightly "stretch" each unit apart after connecting to the previously installed unit. **Do not install the units from the outside edges to the center!** Cutting can be performed with hand saws, or a portable power saw. When anchors are required (for sloped areas only) install as described above before filling the grid cells.

B. Deliver gravel to the grid area by using a tractor or other spreading apparatuses. Dump trucks and tractors may drive on the grid as long as they do not exceed the load-bearing capacity of the grid and sub base engineering. Sharp turning of heavy construction vehicles on empty grid units must be minimized. **The gravel should be first delivered to the center of the area.**

The gravel is then spread laterally out from the center to the edges, equally from all sides of the pile, using power brooms, blades, flat bottomed shovels and/or wide "asphalt rakes" to fill the cells. A stiff bristled broom may be used for final "finishing". The gravel should be "lightly compacted" using a vibrating plate or sod roller, with the finished fill equal to the top of cells.

### 3.04 Finished Surface

A. no overfill is required for the grid to perform as a separation/stabilization layer.

B. For horse training areas, Install a minimum of 4" and a maximum of 6" of clean washed sand (no humus) over the now filled grid system. Surface should be "dragged" flat and smooth (not compacted) to within the tolerances specified by the designer, client, or engineer. Submit samples and confirm actual overfill height with designer, client, or engineer before installing.

3.05 Cleaning

- A. Remove and replace tile segments of **HoofGrid/HoofGrid HD** units where 2 or more “tabs” or cell walls 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