



**GEOHEX™**

# Product Information & Installation Guide

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# Why Geohex?

The GEOHEX™ Erosion Control System is a unique and innovative ground stabilization technology that is easy to use and quick to install.

GEOHEX™ is a permeable ground stabilization technology that has been engineered for use in multiple applications ranging from soil & turf stabilization for the enhancement of water saving measures, to the reinforcement of roads in and around construction sites.

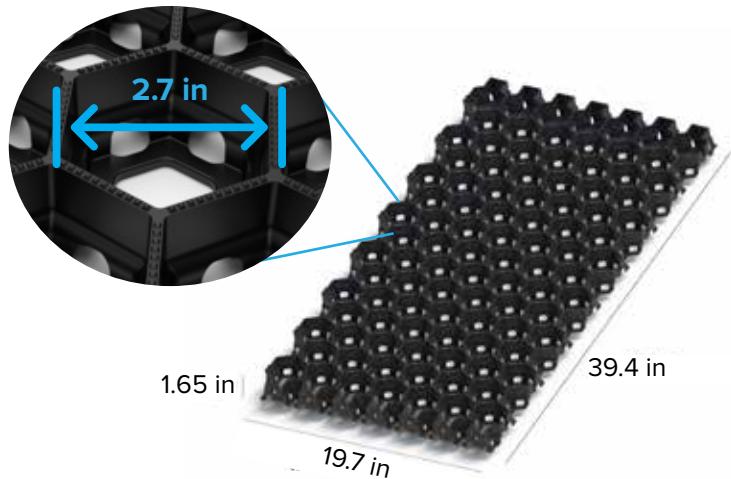
The GEOHEX™ Erosion Control System is a safe and cost effective substitute for concrete in many applications. Made from 100% recycled plastic, it is environmentally friendly and its lightweight design reduces logistic costs, while at the same time, increasing ground stability and water conservation.

This guide outlines installation requirements, US standard references, and base preparation instructions.

## Features & Benefits

- Easy to install & cost effective
- Erosion Control
- Maintains structure and integrity in the soil profile when it becomes saturated due to heavy rainfall
- Drainage & water detention capabilities
- Reduces surface water runoff and the need for grated trench drain, minimizing the size of detention tank
- Load-tested to internationally recognised standards, with ASTM / AASHTO equivalent performance classifications
- Eco-friendly – Made from post-consumer recycled polypropylene making it light weight and durable
- Versatile applications
- 25-year design life – as per manufacturer's installation detail

# Technical Specifications



Material	Recycled Polypropylene
Dimensions	W 19.7 in x L 39.4 in x H 1.65 in
Maximum Load Bearing Capacity	Load capacity aligned with ASTM / AASHTO equivalent classifications.
Weight	5.95 lbs per panel
Temperature Tolerance	Project-specific (dependent on application and infill material)
Water Permeability	99.7%
Infiltration Rate	Infill dependent
Sustainability	100% Recyclable
Infill Requirements	3/8 in – 5/8 in aggregate
Warranty	12-month limited warranty
Connection Method	Clip lock system

# Geohex Applications

Parking Areas / Hardstands

Golf Courses

Municipal Parks

Driveways

Aggregate Paths & Roads

Caravan Parks under turf

Feedlots & Troughs

Dairy Lanes

Landscaped Areas

Equine, Cattle, Sheep Yards / Agistments

Under Large Water Tanks

Sportsgrounds

## Load Class Definitions (ASTM / AASHTO Equivalent)

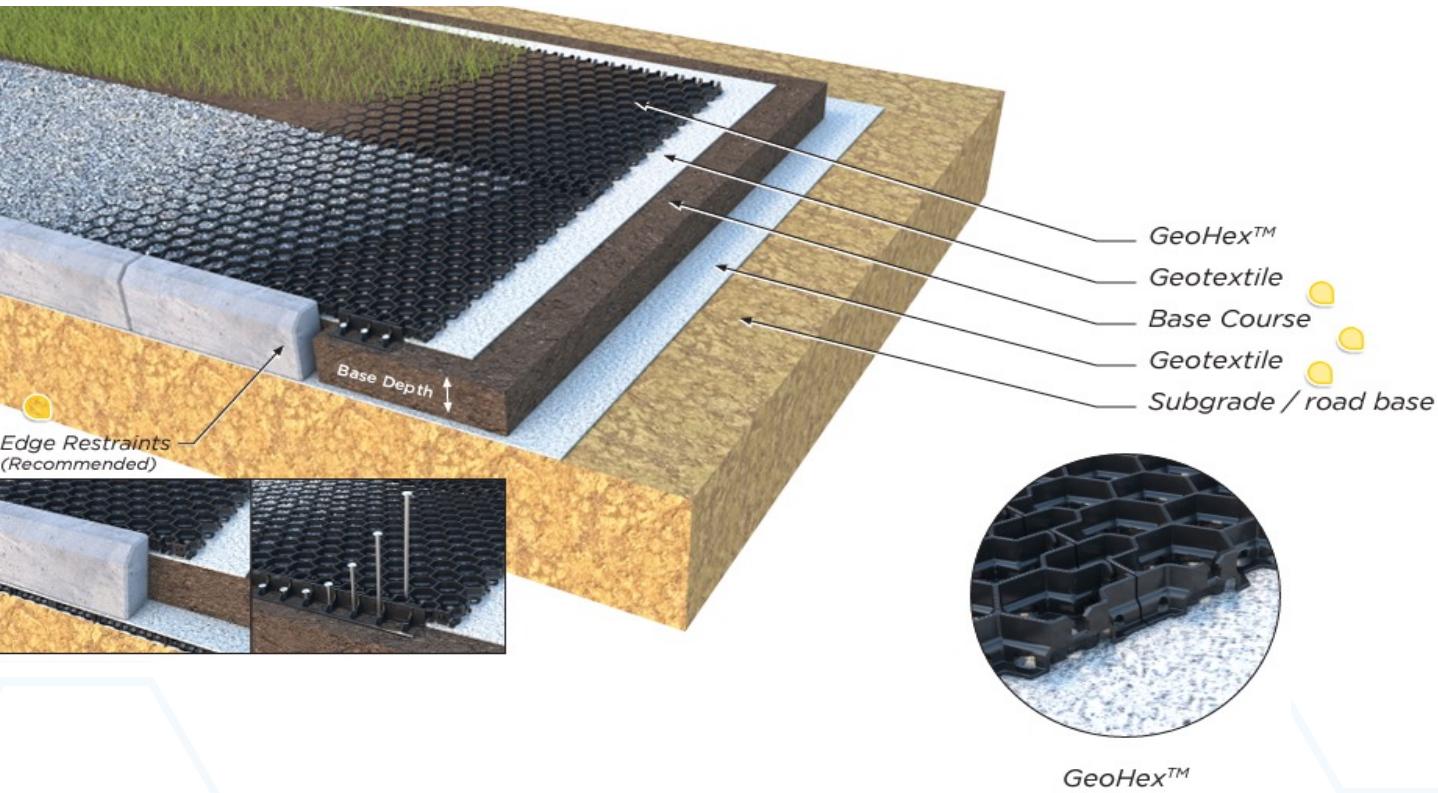
Type	Class	Typical Use	Equivalent single wheel load	Service-level design load	Ultimate design load
	<b>A</b>	Areas accessible strictly by pedestrians. Not suited to vehicles. Purpose - residential backyards. Walkways not accessible by vehicles.	727 lb	1.5 kips	2.3 kips
	<b>B</b>	Private and shared residential property. Suitable for vehicles accessing driveways and footways. Low speed only. Purpose - residential driveways, unit sites, parklands and residential car parks.	5,886 lb	12 kips	18 kips
	<b>C</b>	Residential roads and car parks trafficable to vehicles. Purpose - areas with slow moving traffic and minor roads.	11,023 lb	23 kips	34 kips
	<b>D</b>	Major roads including freeway and motorway shoulders. Warehouses and loading docks. Purpose - major roads.	17,636 lb	36 kips	54 kips
	<b>E</b>	Freeway and motorway carriageways. Suitable for all heavy vehicles. Purpose - freeways and motorways.	30,203 lb	60 kips	90 kips
	<b>F</b>	Docks, wharfs and airport service and taxiways. Purpose - heavy and high traffic volumes.	44,092 lb	90 kips	135 kips
	<b>G</b>	Docks, wharfs and airway runways. Purpose - heavy and high traffic volumes.	66,138 lb	135 kips	200 kips

# Rural & Landscaping Installation Guide



## Base Depth

0-2 in	Foot traffic only	
2-4 in	Turf stabilization	Golf Cart Paths



This graph is based on non-reactive soils only. For advice on reactive soils please contact the GEOHEX team.

Base material: Dense graded aggregate base, compacted to 98% Standard Proctor.

# Rural & Landscaping Applications

Farming



Agistment



Landscaping



# Class B Installation Guide

## Light Vehicle Loads



### Use case

Areas (including footways & light tractor paths) accessible only to vehicles (excluding commercial vehicles) or livestock (light duty), rural/farm golf course.

### Ultimate design load

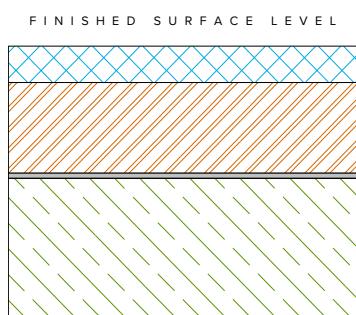
18 kips

### Service-level design load

12 kips

### Equivalent single wheel load

5,890 lb

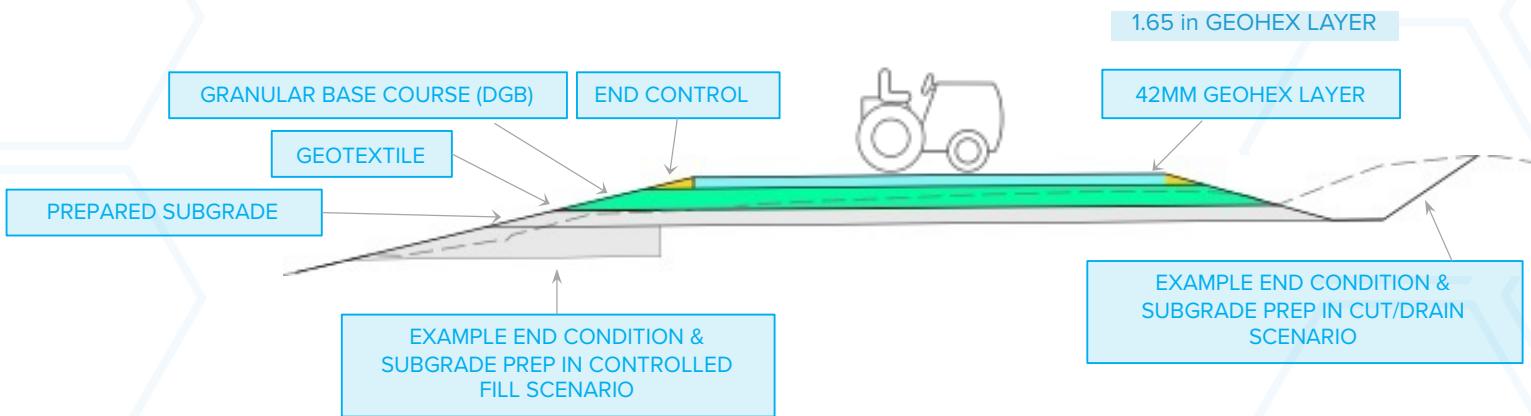


Geohex with crushed rock infill (1.65 in thick)

5.9 in thick compacted base layer

0.55 in Geotextile Layer

Nominal thickness re-compacted subgrade CBR > 5%



# Class D Installation Guide

## Commercial Vehicle Loads



### Use Case

Carriageways of unclassified roads, areas open to commercial vehicles, light trucks including loading docks, laydown yards.

### Ultimate Design Load

54 kips

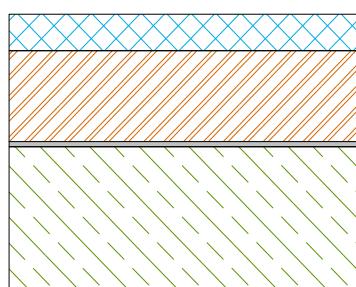
### Service-level Design Load

36 kips

### Equivalent Single Wheel Load

17,640 lb

FINISHED SURFACE LEVEL

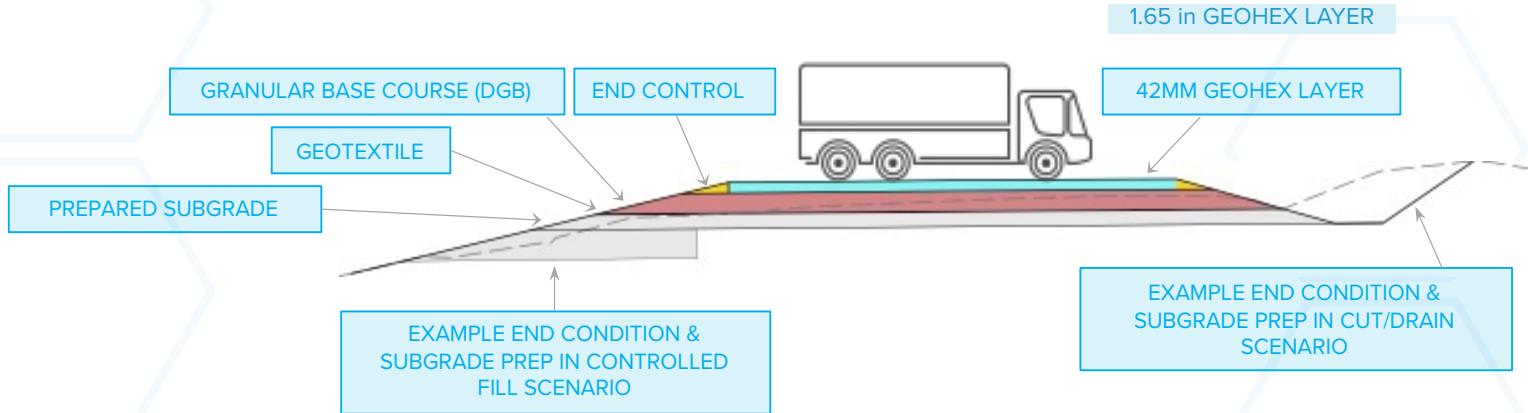


Geohex with crushed rock infill (1.65 in thick)

7.9 in thick compacted base layer (place in two 4 in lifts)

0.55 in Geotextile Layer

Nominal thickness re-compact subgrade CBR > 5%



# Class B & D Applications

## Class B Applications

Golf Courses



Beach Access



Driveways



## Class D Applications

Hardstands



Roadways



Civil



# Installing GEOHEX™ on sloped surfaces

When installing GEOHEX™ on any slope, it is best practice to secure the pavers with 6 - 12 in landscaping screws with bugle head screws (minimum head diameter  $\approx 5/8$ – $3/4$  in). The number of screws per needed per panel is relative to the angle of the sloped surface the product is being installed on.

Please note when laying GEOHEX™ on a slope, it is important not to overfill the GEOHEX™ paver. Overfilling may result in aggregate being lifted from within the honeycomb cell. We recommend using an aggregate of  $3/8$ – $5/8$  in in diameter to allow for ample drainage.

For adjoining areas on sloped installations, divert high levels of runoff water away from the GEOHEX™ installation site to prevent erosion forming under the product.

For subterranean installations, 4 in x 8 in plinths may be used at a depth of 8 in to stabilize ground movement beneath GEOHEX™. Refer to your current state building codes for more detailed reference information.

**Important note** – For best results, slopes over 15 degrees we recommend a certified engineering evaluation and site report prior to installation.

For all sloped installations or more detailed advice on your specific GEOHEX™ installation.



# Geohex Fill Materials

Fill Material	Procedure	Tips
Lime (crushed/granular)	Use at a diameter of up to $\frac{5}{8}$ in and ensure medium to high levels of compaction.	Avoid lime with a high clay content as the surface will become excessively slippery.
Pumice	Great for drainage and soft surface requirements.	Ensure good compaction and low sand content.
Crushed stone (granite or basalt) and recycled crusher fines / stone dust	Very good compacter and useful for exits and entry roads	Needs thorough and uniform compaction.
Rotten stone (also known as riverstone)	Good for bovine hooves and is also preferable for many other livestock.	Must be no bigger than $\frac{5}{8}$ in, in diameter. Can get slippery when wet. Must be soft enough to avoid damaging the GEOHEX™ Erosion Control System.
Soil	Only use where extremely soft surfaces are required. Ensure a very high level of compaction. Also good for areas where the promotion of turf growth is required.	Ensure the soil is clean and free of contaminants such as large rocks, metal or glass. Can be mixed with 10% to 15% washed sand.
Other	Fine, rock or soil like material that is less than $\frac{5}{8}$ in diameter.	Avoid fillings that have high stone content or sharp edges.

# Aggregate Base Recommendations

**Driveways** Any aggregate choice will suit, provided the aggregate is no larger than  $\frac{3}{8}$ – $\frac{5}{8}$  in diameter. For sloped driveways, please see Slopes for more information.

**Horse Stables** Any aggregate choice will suit, provided the aggregate is no larger than  $\frac{3}{8}$ – $\frac{5}{8}$  in diameter.

**Cattle Yards** Any aggregate choice will suit, provided the aggregate is no larger than  $\frac{3}{8}$ – $\frac{5}{8}$  in.

**Lawns** Compact soil to the top of the GEOHEX™ pavers before watering and filling in any spots that are uneven. Turf can then be laid over the top of the GEOHEX™ pavers. Alternatively, seed or spray grass can be used.



Pictured Cattle Yard

# Frequently Asked Questions

**Q: Can the GEOHEX™ Erosion Control System be used anywhere?**

**A:** Yes, the GEOHEX™ Erosion Control System can be used in any type of soil or geological configuration.

**Q: How big are the GEOHEX™ pavers?**

**A:** The GEOHEX™ pavers come in a standard size of 5.4 sq ft, however, panels can be cut to size to suit your specific installation if required.

**Q: How does the GEOHEX™ Erosion Control System promote safety?**

**A:** The GEOHEX™ Erosion Control System stabilizes turf and ground areas, meaning there is a lot less potential for accidents to occur. It also minimizes the risk of machinery or livestock getting bogged in muddy areas. By using the GEOHEX™ Erosion Control System in landscape applications, embankment subsidence and large movements of soil and rock can be easily prevented.

**Q: How does the GEOHEX™ Erosion Control System promote water conservation?**

**A:** The unique, hexagonal and porous design of the GEOHEX™ Erosion Control System means that water is captured in the soil which can then be diverted into storage and detention tanks. This lowers the amount of surface water runoff, meaning less soil erosion and allows rainwater to be used for secondary purposes.

**Q: How heavy are the GEOHEX™ pavers?**

**A:** Each GEOHEX™ standard 5.4 sq ft pavers weigh 6 lb (unfilled).

**Q: Is the GEOHEX™ Erosion Control System strong?**

**A:** Yes, the GEOHEX™ Erosion Control System is load-tested to heavy-duty applications equivalent to ASTM / AASHTO high-load classifications, ensuring superior strength and reliability for demanding applications, including erosion control, subgrade stabilization, and vehicular access.

**Q: Is the GEOHEX™ Erosion Control System safe to use in the ground?**

**A:** The GEOHEX™ Erosion Control System is non-toxic to humans, animals and plants and also non-reactive to solvents, oils, chemicals and water.

# Frequently Asked Questions

**Q: How far down do I need to excavate to lay the GEOHEX™ pavers?**

**A:** We recommend excavating down to a minimum of 8 in however, final excavation will need to be determined by the existing material in the installation area. For example, water soaked mud and very sandy soils will require a thicker base than solid clay or rock bases. We also recommend laying a 6 in compacted road base sub-layer prior to installing the GEOHEX™ pavers.

**Q: What is the best way to lay the GEOHEX™ pavers once the base has been prepared?**

**A:** We recommend laying the GEOHEX™ pavers starting in one corner with the male lugs facing outward and female lugs facing the next paver to be laid on both sides. Once you've determined the start point, lay the pavers in a staggered pattern for strength and durability, and simply click into place.

**Q: Can I adjust or move the GEOHEX™ pavers once installed?**

**A:** There is a small amount of flexibility in the GEOHEX™ pavers to allow for movement if you need to make minor adjustments or follow any ground contours.

**Q: Can the GEOHEX™ Erosion Control System be used on sloped ground?**

**A:** Yes, the GEOHEX™ Erosion Control System can be used on sloped ground. For best results we recommend laying on inclines of  $\frac{3}{8}$  in or less but for inclines greater than  $\frac{3}{8}$  in we recommend the use of ground pins to secure the paver. Type Bugle head screws (minimum head diameter  $\frac{5}{8}$ – $\frac{3}{4}$  in), galvanized and a minimum of 12 in long can be screwed into the sub-grade without the need for hammering through the cell material.

**Q: What infill material can I use with the GEOHEX™ Erosion Control System?**

**A:** While excess material from the excavation is acceptable for infill, a granulate material made up of a mix of size and grade that packs down into the matrix will deliver the best result. For roads, we recommend cracker dust, road base or limestone. Please note that aggregate larger than  $\frac{5}{8}$  in will not settle well into the void.

**Q: How much infill is required to fill a GEOHEX™ paver?**

**A:** 1.3 cubic yards of aggregate will cover approximately 215 sq ft of Geohex.



Disclaimer: The information provided herein is for reference purposes only. It is intended as a guide and will not apply to every circumstance as both site conditions and intended use varies.

Determination of the suitability of use of the product given the site conditions and intended function is the sole responsibility of the user. We recommend the user seek the advice of a civil engineer to assess site conditions and recommend a suitable site preparation procedure using locally available materials and machinery to ensure a successful installation. All installations must comply with applicable state and local codes. We accept no responsibility for failure to seek appropriate installation advice prior to the installation of GEOHEX™.



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