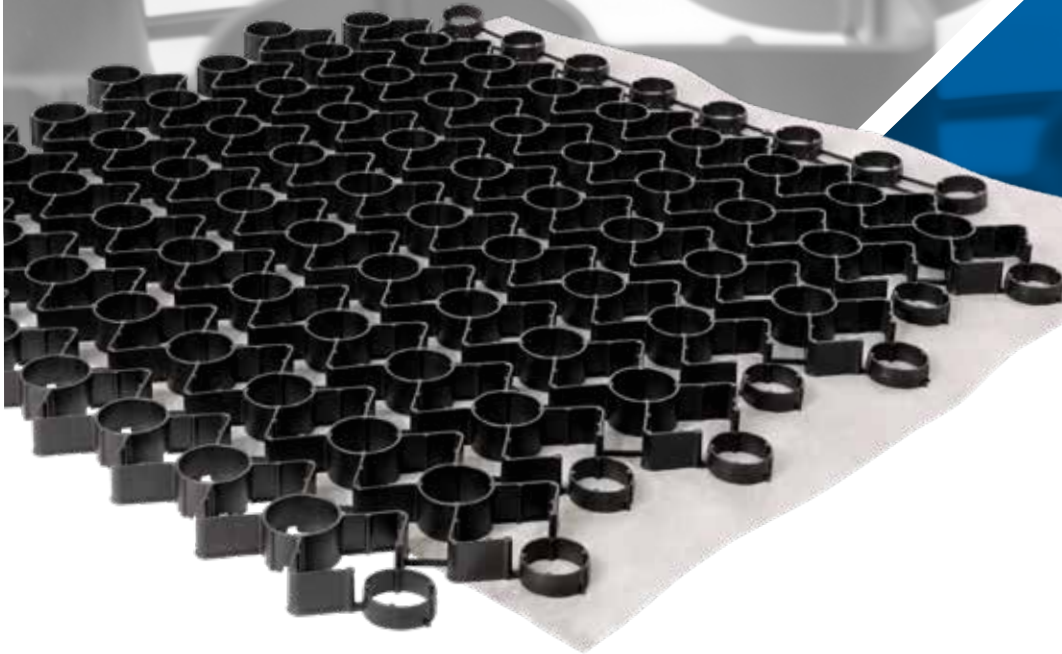


GROUNDPRO™ *GRV*

INSTALLATION GUIDE



A BRAND OF  BRENTWOOD

CONTENT

- 1.0** Precautions
- 2.0** Preparation
- 3.0** Base Material
- 4.0** Paver Placement
- 5.0** Paver Filling
- 6.0** Post-Installation Maintenance

Appendix A: Base Material

GENERAL NOTES

StormTank® GroundPro™ GRV (the product) is a flexible permeable paver system, providing ground stabilization and protection for gravel applications. In addition, the paver system provides a means to reduce runoff by eliminating impervious surfaces and promoting infiltration. With varying shapes, sizes, and configurations, no two systems are the same.

To sustain system functionality, StormTank offers the following general installation guidelines.

StormTank GroundPro GRV carries a limited warranty, which can be accessed at www.stormtank.com.

1.0 PRECAUTIONS

A. General

- Review installation procedures and coordinate paver system installation with other construction activities.
- Engineered documentation supersedes this document, as the information is based on a typical installation.
- Components shall be unloaded, handled, and stored in a manner to prevent damage and UV degradation.
- Extra care and caution should be taken when temperatures are at or below 40° F (4.4° C).
- Slope shall be limited to 10% and may require staking.

B. Installation Preparation

- Installation should occur once all nearby sprinkler system and adjacent hardscape installations are completed.
- Installations near trees should incorporate a root barrier to prevent damage to the paver system.
- Installations on fill areas shall be inspected by a geotechnical expert to ensure stability and necessary compaction to resist settlement.
- Percolation rates must be a minimum of 0.25"/hr (6.35 mm/hr) after factor of safety (recommended 2:1).
- Water table shall be a minimum of 2.0' (610 mm) below base course invert.

2.0 PREPARATION

A. Excavation

1. Excavate the installation area, accounting for base material, plus 1.25" (31.75 mm).
 - a. Additional drainage components may be required for poorly draining soils.
 - b. Installation shall not occur on frozen, muddy, or saturated soils.

B. Preparation

1. Prepare the subgrade for installation.
 - a. Remove any large or loose material including rock outcroppings.
 - b. Compact per engineer, ensuring compaction does not reduce permeability below design criteria.

3.0 BASE MATERIAL *(IF SPECIFIED)*

A. Installation

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 paver system.
 - c. Place base materials in lifts not to exceed 6" (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%.

B. Final Depth

1. Leave 1.25" (31.75mm) of depth below final grade for unit and fill/vegetation.

4.0 PAVER PLACEMENT

A. Placing Paver Panels

1. Begin by placing the first panel at the lower left corner of the installation area.
 - a. Ensure a minimum 1" (25.4 mm) separation between the product and adjacent surface.
 - b. Paver panels can be cut to fit around objects or irregular shapes.
 - c. Secure any required panels to the subgrade.
2. Place the next panel adjacent, allowing easy movement of the connection feature over the first panel.
 - a. Snap the female connector onto/over the male connector. Continue for any additional required panels.
 - b. Once all paver panels are placed, ensure the minimum 1" (25.4 mm) perimeter separation distance remains.
 - c. Secure any required panels to the subgrade.
3. If anchoring is required, place anchors in accordance with Anchor Placement Detail, being sure to include anchors along the perimeter of the installation.

5.0 PAVER FILLING

A. Filling Paver Cells

1. Slightly overfill pavers with an aggregate mixture and allow material to settle into the paver cells.
 - a. Aggregate mixture shall be either a 3/16" (4.763 mm) to 3/8" (9.525 mm) aggregate, a coarse sand, or a mixture of the two materials.
 - b. Paver system should not be directly driven on without material filling the paver cells.
2. Use a vibratory plate tamper to settle fill material.
3. Place a secondary layer of the aggregate mixture to fill the paver cells and provide a maximum 1/4" (6.35 mm) of material above the paver product.

6.0 POST-INSTALLATION MAINTENANCE

A. Aggregate Fill

1. Inspection of the fill material should occur at regular intervals. Occasionally, additional fill may be required due to slight loss or transportation of existing fill material. In these situations, onsite material may require being respread or additional material placed.

B. Snow Removal

1. While removing snow, avoid direct blade contact to prevent scraping/gouging the paver system. Adjust blade height for a minimum separation of 1" (25.4 mm) to 2" (50.8mm) above the paver system's surface.
2. Snow should not be piled over paved areas as it could cause damage, promote mold growth, or require revegetation in the spring.

APPENDIX A: BASE MATERIAL

Performance of GroundPro GRV is partly dependent on proper subgrade and base material preparation. Without proper base strength, composition, etc., performance may be limited by inability to support loads or maintain adequate stand of vegetation.

Though the product can be placed directly onto the subgrade, it is recommended a minimum 2" (50.8mm) base layer be provided for drainage and runoff storage prior to infiltration. Base material should be a mixture consisting of two-parts angular drainage aggregate (AASHTO #57) to one-part screened topsoil—maintaining a minimum 30% void space. Once placed, the mixture should be compacted to engineer specifications.

Aggregate Gradation

TABLE 703.4 STANDARD SIZES OF COARSE AGGREGATES AASHTO M 43

Amounts finer than each laboratory sieve (square openings), percentage by weight

Product Name	Nominal Size Square Openings	1.5" 37.5mm	1" 25mm	0.5" 12.5mm	No. 4 4.75mm	No. 8 2.36mm	No. 200 75 µm
#57	1" - No. 4 25 - 4.75mm	100	95 - 100	25 - 60	0 - 10	0 - 5	0 - 2

Base Depth Recommendations

LOADING CRITERIA	DESCRIPTION	EXAMPLES	DEPTH
Class 1: Pedestrian Loads Only	---	Trails Bicycle Paths Wheelchair Access	0 - 2" 0 - 51mm
Class 2: Personal Vehicular Access	Single Axle Loads of 4,000 lbs. (18 kN)	Cart Path Parking Stall Residential Driveway	2 - 4" (51 - 102mm)
Class 3: Light Duty Access (H-10)*	Single Axle Loads of 16,000 lbs. (75 kN)	Parking Lot Roadway Shoulder Overflow Parking	6 - 10" (152 - 254mm)
Class 4: Medium Duty Access (H-15)*	Single Axle Loads of 24,000 lbs. (110 kN)	Truck Wash-Down RV Access Service Vehicle Access	10 - 12" (254 - 305mm)
Class 5: Heavy Duty Access (HS-20)*	Single Axle Loads of 32,000 lbs. (145 kN)	Emergency Lane Equipment Area Trailer Overflow	12"+ (305mm+)

(* Depth may need to be increased on a case-by-case basis, because of subsoil characteristics, subsoil strength limitations, frost-heave limitations, etc. The engineer shall be responsible for the design and stability of the subgrade and base material.



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