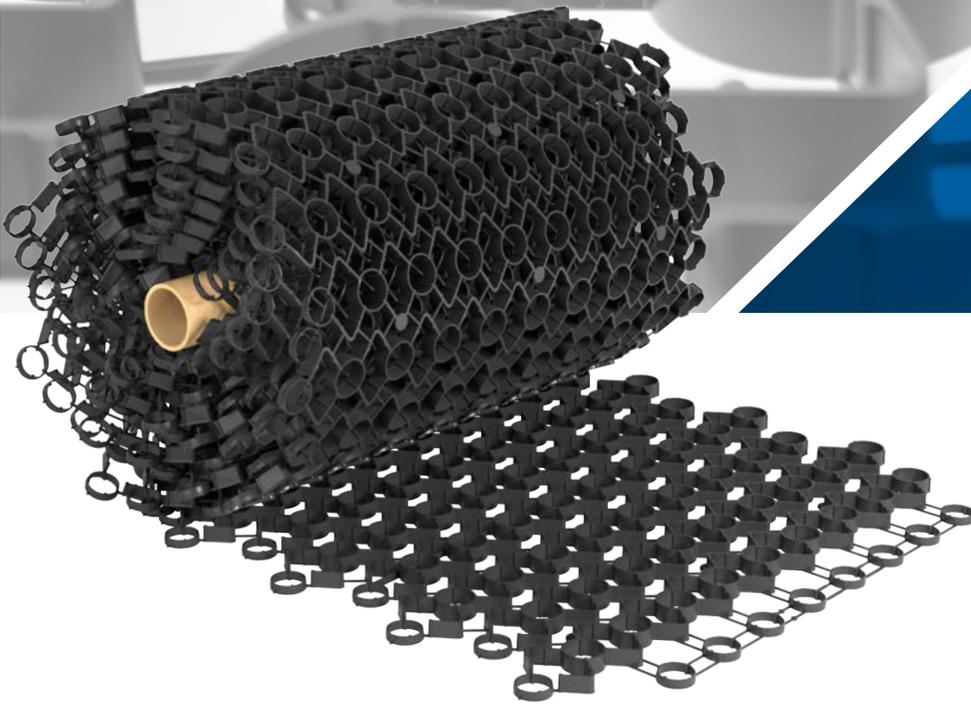


GROUNDPRO™ GRS

INSTALLATION GUIDE



A BRAND OF  BRENTWOOD

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Appendix A: Base Material

GENERAL NOTES

StormTank® GroundPro™ GRS (the product) is a flexible permeable paver system, providing ground stabilization and protection for grass 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 GRS 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 (6.35mm/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 Rolls

1. Begin by placing the first paver roll at the left side of the installation area and roll out. Paver roll should be placed in a manner to allow the product to be unrolled with its topside facing up.
 - 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 paver rolls to the subgrade.
2. Place the next paver roll adjacent, allowing easy movement of the connection feature over the first paver roll.
 - a. Once unrolled, snap the female connector onto/over the male connector. Continue for any additional required paver rolls or singular paver panels (disconnected from a larger roll).
 - b. Once all paver rolls are placed, ensure the minimum 1" (25.4 mm) perimeter separation distance remains.
 - c. Secure any required paver rolls 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. Fill pavers cells with a soil mixture.
 - a. Soil mixture per landscape architect, soil scientist, or Engineer of Record requirements. It is recommended that the mixture contain 70% sand and 30% screened topsoil.
 - b. Paver system should not be directly driven on without material filling the paver cells.
2. Use a broom or rotary sweep to clear loose material and expose a portion of the paver system. Apply vegetation.
 - a. Sod Installations — Aggressively sweep the loose soil and place the sod.
 - i. Use a weighted lawn roller to seat the sod into paver cells. Sod should not be produced with a clay soil base or exceed a base thickness of 0.5" (12.7mm).
 - ii. Place sod in a staggered pattern.
 - iii. Water and protect for 3-4 weeks to allow for root establishment.
 - b. Seed Installations — Water the soil to compact and settle material. Refill paver cells as needed to achieve required depth of soil. Hydroseed the area and provide adequate straw mulch to ensure stabilization during germination.
 - i. Select a turfgrass that is based upon native conditions and anticipated traffic levels.
 - ii. Areas should be protected for a minimum 4-8 weeks to allow for root establishment.

6.0 POST-INSTALLATION MAINTENANCE

A. Lawn Care

1. No different than other turf areas, requiring mowing, watering, and potentially fertilization. Herbicide and insecticides may be needed if problems exist. Since the product is intended to prevent compaction, this is usually the results of materials placed on or in the paver system.

6.0 POST-INSTALLATION MAINTENANCE *(CONTINUED)*

2. Bare spots can occur due to a number of variables, including poor soils placed in the paver system, poor germination of seed, lack of nutrients, shade, and high traffic volume. To repair these areas, the following steps should be utilized:
 - i. Sample the soils within the paver system to ensure proper nutrients and growing media are available.
 - ii. Topdress the paver cells with fresh topsoil/sand and place new grass seed. If recommended in soil testing, add any needed treatment method during topdressing.
 - iii. Place a layer of cellulose or straw to prevent erosion and seed loss.
 - iv. Repeat steps until all areas are fully vegetated.

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 1-2" 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 GRS 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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