

GRO Synthetic Turf System



Overview

Carlisle's GRO Synthetic Turf System is a hassle-free, environmentally safe roof garden alternative for crafting a natural-looking play or leisure area on the roof. With a selection of six turf varieties, including pet-friendly and putting turf options, GRO Synthetic Turf delivers year-round beauty without the need for water, pesticides, or fertilizers typically associated with real grass.

Elevated over the membrane and bolstered by structural support grates on pedestals, GRO Synthetic Turf Systems can ensure a level surface over sloped roofs and can effectively conceal rooftop fixtures like cables and drains. Engineered with applicator convenience in mind, GRO Turf Systems are easy to install and integrate seamlessly with Carlisle's roofing systems. GRO Synthetic Turf qualifies for Carlisle's industry-leading single-source overburden warranty, extending peace of mind to building owners for up to 20 years.

Features and Benefits

- » Low-maintenance, year-round natural look
- » Mold- and fade-resistant
- » Resists stains
- » Quick-drying and impact-resistant
- » Ideal for playgrounds and pet areas
- » ADA Accessible
- » Made in the USA

Precautions: GRO Synthetic Turf Systems shall be installed with a perimeter of concrete pavers sharing the perimeter GRO Turf Pedestals. The weight of the pavers will provide ballast for the turf system, ensuring additional wind resistance. If the system butts to a vertical curb or wall, use a metal counterflashing fastened to the vertical condition that extends over the turf system a minimum of 2" (5 cm) to prevent uplift in the perimeters.



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Installation

Carlisle's GRO Synthetic Turf System is installed in an elevated fashion, allowing the system to sit above the roof membrane secured to structural grates supported on adjustable pedestals. The materials needed for installation include HP Protection Mat, GRO Adjustable Pedestals (available in different heights), GRO Structural Grate, Grate Fastening Kit, Seaming Fabric, Seaming Adhesive, Turf, and ½" to ¾" self-tapping, flat head, stainless steel screws. Below is a high-level installation overview. For detailed installation instructions, please refer to Carlisle's GRO Synthetic Turf Installation Guide.

Step 1: Loose lay Carlisle's HP Protective Mat prior to pedestal and grate installation.

Step 2: Lay out GRO Pedestals per design specifications. Place a GRO Pedestal under each corner of the GRO Structural Grate so that the pedestal can support the corners of four GRO Grates. The GRO Structural Grate should be placed so that the solid side is facing up and the waffle side is facing down. In addition to the four corner pedestals, break away the tabs on a fifth pedestal to be placed under the middle of each GRO Structural Grate for additional support.

Step 3: Continue placement of GRO Grates until the desired design layout is achieved. Once the GRO Structural Grates are positioned, use a GRO Turf Grate Fastening Kit to secure the GRO Grate corners into the pedestal top using the supplied fastener. One GRO Turf Grate Fastening Kit can be used to secure the corners of four GRO Grates over top of each of the four outside GRO Pedestals.

Step 4: Roll out the GRO Turf on top of the GRO Grates. Position and cut to fit. Note that almost all turf varieties are directional, so ensure the direction of the turf is correct. Adjacent turf pieces should be butted tightly together.

Step 5: Using ½" to ¾" flat head, self-tapping, stainless steel screws, fasten the turf to the grates around the entire perimeter of the turf system, taking care not to overdrive the screws completely through the turf while also driving deep enough to ensure the screw heads are concealed. Screws should be spaced 8" apart and 1" from the edge of the grate. In the field of the turf system, screws should be placed at the corner of each grate to prevent flutter. Note: If seaming is required, do not install screws within three feet on either side of the seam area to allow for the turf pieces to be folded back to perform the seaming process.

Note: If the turf system design features multiple pieces of turf, seaming will be required following steps 6 – 11.

Step 6: Once turf is dry fit and secured around the perimeter, seaming is required to create a permanent bond between adjacent pieces if multiple pieces of turf are used. Seams should be tightly butted prior to the seaming process. Start by folding one of the sides of turf back and center GRO Seaming Fabric so that 6" extends under the unfolded piece of turf. Note that centering the Seaming Fabric is critical to proper seaming so that proper adhesive coverage is maintained.

Step 7: After the Seaming Fabric is properly positioned, centered under the seam, apply the GRO Turf Seaming Adhesive to the Fabric centered on the GRO Seaming Fabric. Use a conservative amount at first to avoid having adhesive squeeze out of the seam and onto the turf. Using a V-notched trowel, trowel the adhesive to a minimum width of 8", with 4" under each piece of turf. Apply the desired amount of GRO Turf Seaming Adhesive, centered on the GRO Seaming Fabric. Using a V-notched trowel, trowel the adhesive to a minimum width of 8", with 4" under each piece of turf.

Step 8: Unfold the turf back into position, centered over the applied adhesive in a zipper-like fashion. See Image 5. Care must be taken to avoid getting adhesive on the exposed turf.

Step 9: Immediately following turf installation into adhesive, the seam must be rolled in a 45-degree angle with a weighted roller. Adhesive takes between 2 – 4 hours to reach initial bond strength and up to 24 hours to fully cure. In windy situations, weight can be applied to the seams to avoid movement.

Step 10: Finish the seam by using a carpet tractor to help blend the seam.

Step 11: Once seaming is complete, continue using ½" to ¾" flat head, self-tapping, stainless steel screws to finish securing the perimeter of the turf system. In the field of the turf system, screws should be placed at the corner of each grate to prevent flutter.

GRO SYNTHETIC TURF

Carlisle's GRO Synthetic Turf system is available in six turf options that can provide a variety of aesthetics and uses. The turf material is made of a durable, fade-resistant, weatherproof blend of Polypropylene (PP) with a Polyethylene (PE) thatching. GRO turf is impact-absorbing, mold- and fade-resistant, ADA accessible, and LEED® certified. It is also non-flammable, having passed the ASTM D2859 pill burn flammability testing. The chart to the right shows the available turf varieties, including their pile heights, weight, face weight, color, and thatching color.

Size, Weight, and Coverage Rate

- » Turf rolls are available in 15-foot widths and can be customized to any length up to 98 feet
- » Turf weights vary – ranging from 0.42 to 0.81 pounds per square foot

Precautions

- » Ensure turf is fastened into GRO Turf Grates to avoid wind movement
- » Turf sections that will not be fully installed and fastened in one day should be weighed down using temporary ballast such as tires, buckets, etc. to avoid wind movement

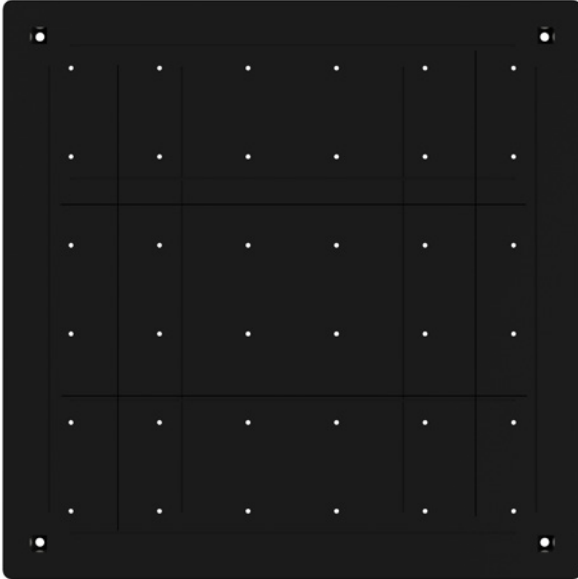
LEED® Information

- » Pre-Consumer/Post-Industrial Recycled Content: 0%
- » Post-Consumer Recycled Content: 0%
- » Manufacturing Point: Chatsworth, Georgia

	<p>PLUSH SPRING 6 colors & 2 fibers for a lush landscape</p> <p>Pile Height: 2 inches Total Weight: 106 oz./yd² Face Weight: 80 oz./yd² Color: Field, Apple, Emerald, Tan Thatching: Green, Tan</p>
	<p>ALL PLAY "U" shaped fibers for playground & heavy activity</p> <p>Pile Height: 1.125 inches Total Weight: 81 oz./yd² Face Weight: 55 oz./yd² Color: Field, Apple Thatching: Green, Tan</p> <p>* Tested in accordance with ASTM F1951 for accessibility of surface systems under and around playground equipment.</p>
	<p>PUTTING TURF Putting greens, bocce courts, & sport applications</p> <p>Pile Height: 0.625 inches Total Weight: 60 oz./yd² Face Weight: 46 oz./yd² Color: Two tone green</p>
	<p>PLUSH FALL 6 colors & 3 fibers for a realistic feel</p> <p>Pile Height: 2 inches Total Weight: 106 oz./yd² Face Weight: 80 oz./yd² Color: Field, Olive, Emerald, Tan Thatching: Green, Tan</p>
	<p>CLASSIC PRO "W" shaped fibers for a natural manicured look</p> <p>Pile Height: 1.625 inches Total Weight: 116 oz./yd² Face Weight: 90 oz./yd² Color: Field, Emerald Thatching: Green, Tan</p>
	<p>PET TURF Vibrant greenery for pets with maximum permeability</p> <p>Pile Height: 1.125 inches Total Weight: 71 oz./yd² Face Weight: 55 oz./yd² Color: Field, Apple Thatching: Green, Tan</p>

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GRO STRUCTURAL GRATE



Top down grate

Carlisle's GRO Structural Grate creates a stable and secure foundation to attach the GRO Synthetic Turf. The GRO Structural Grate is designed to be supported on and fastened to GRO Adjustable Pedestals for stability and wind uplift resistance.

Features and Benefits

- » Made of Nylon 66/6 with 30% glass reinforcement for strength and durability
- » Recessed corners specifically engineered for seamless acceptance of GRO Turf Grate Fastening Kit
- » Holes allow for water drainage

LEED Information

- » Pre-Consumer/Post-Industrial Recycled Content: 60%
- » Post-Consumer Recycled Content: 0%
- » Manufacturing Point: Williamston, SC

Typical Properties and Characteristics

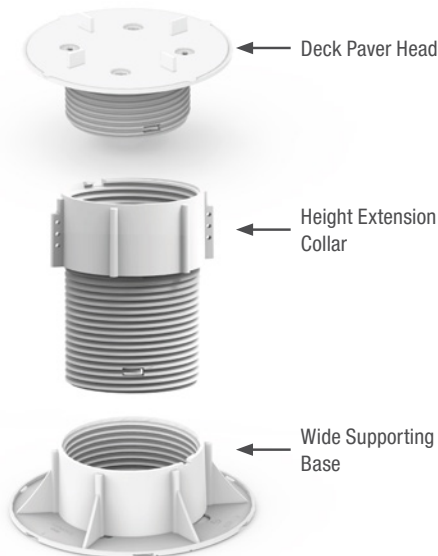
Material	Nylon 66/6 with 30% glass
Dimensions	23.5" x 23.5" x 1.15"
Weight	5.2 pounds per grate
Yield Strength	Average yield strength: >15,000 psi* Passed standards for ASCE 7 and AMCA/FGMC Grating Manual – FG01-17
Ultimate Strength	>20,000 psi* Passed standards for ASCE 7 and AMCA/FGMC Grating Manual – FG01-17

* Strength and deflection results are derived from Solidworks Simulation 2020 structural modeling software

GRO ADJUSTABLE PEDESTALS



Structural Grate supported on Pedestals



Carlisle GRO Pedestals provide rigid, elevated support for GRO Structural Grates and the GRO Synthetic Turf system to help conceal roof extrusions such as anchor points, cables, drains, etc. The pedestals feature a heavy-duty, rubber-cushioned, screw adjustable head and a wide supporting base. GRO Pedestals are designed to accept the GRO Turf Grate Fastening Kit which helps to secure the GRO Structural Grate, creating a secure, monolithic deck that is resistant to movement and wind uplift. Several pedestal heights are available allowing for heights of 1.25" to 11.125". Pedestals can extend up to a maximum height of 39" with the use of height extension collars.

Features and Benefits

- » Designed specifically to support GRO Structural Grates and GRO Turf Grate Fastening Kit
- » Wide base provides stability
- » Built-in $\frac{5}{32}$ " spacing tabs
- » Adjustability from 1.25" to 39" allows for design flexibility

Precautions

- » Pedestals must be loose laid and installed over Carlisle HP Mat, 200V, or 300HV Protection Fabric

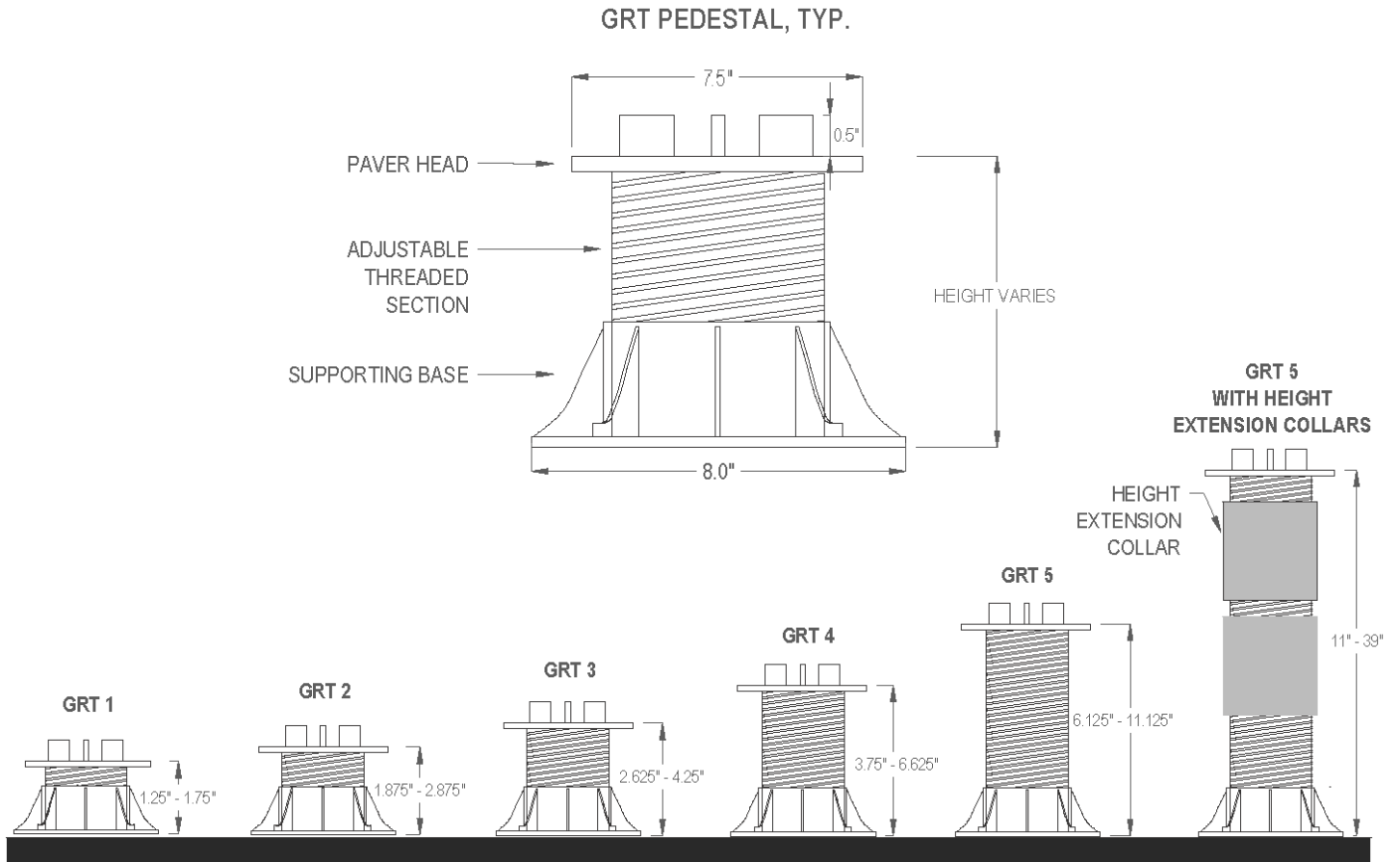
LEED Information

- » Pre-Consumer/Post-Industrial Recycled Content: 0%
- » Post-Consumer Recycled Content: 99%
- » Manufacturing Point: Padova, Italy

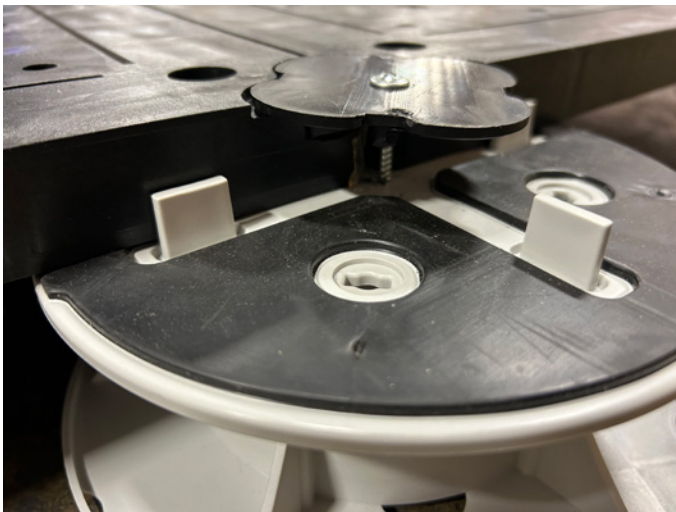
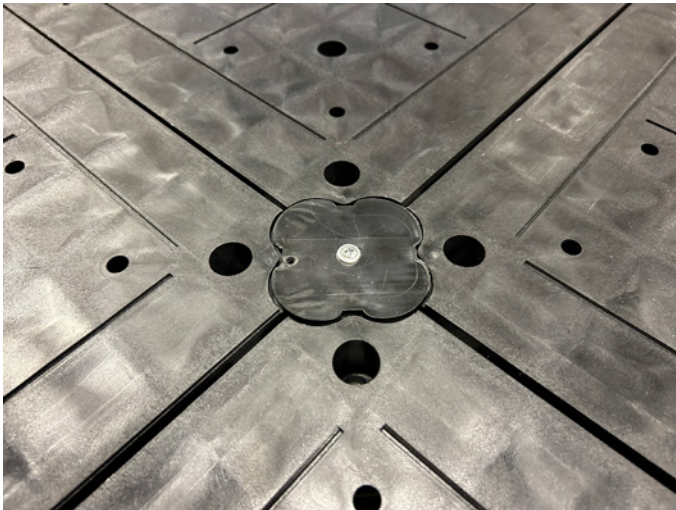
Typical Properties and Characteristics

Material	Polypropylene base and top with rubber cushion on top
Height	Min: 1.25" Max without extensions: 11.125" Max with extensions: 39"
Base Diameter	8" diameter
Base Thickness	$\frac{3}{16}$ " thickness
Base Surface Area	49 in ²
Head Diameter	7.5" diameter
Head Thickness	$\frac{1}{4}$ " (including rubber)
Tab Height	$\frac{1}{2}$ " height
Tab Thickness	$\frac{5}{32}$ " thickness
Compressive Strength	>3,000 PSF
Adjustability Range	
GRO 1 Pedestal	1.25" – 1.75"
GRO 2 Pedestal	1.875" – 2.875"
GRO 3 Pedestal	2.65" – 4.25"
GRO 4 Pedestal	3.75" – 6.625"
GRO 5 Pedestal	6.125" – 11.125"

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GRO TURF GRATE FASTENING KIT



The GRO Turf Grate Fastening Kit features a sturdy plastic 'clover' connector paired with a Philips head screw fastener. Purpose-built, this kit is designed to fit snugly into the corner recesses of the Turf Structural Grates, enabling each kit to anchor the corners of four grates onto supporting GRO pedestals. By firmly securing the structural grates, it establishes a stable elevated deck for turf installation. Additionally, it enhances the system's wind uplift resistance, providing robust performance in challenging conditions.

Features and Benefits

- » Clover shape specifically designed to fit the recessed corners of the GRO Structural Grates
- » Supplied with required fastener
- » One kit fastens the corner of four grates over the underlying pedestal support

LEED Information (Plastic Clover Only)

- » Pre-Consumer/Post-Industrial Recycled Content: 60%
- » Post-Consumer Recycled Content: 0%
- » Manufacturing Point: Williamston, SC

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GRO SEAMING FABRIC



The GRO Seaming Fabric is a 12"-wide, non-woven fabric designed as a carrier for the GRO Seaming Adhesive. GRO Seaming Fabric is used when seaming is required and is centered under the joint of the two adjoining turf pieces.

Features and Benefits

- » 12" width – allows 6" extension under each turf piece
- » Acts as a carrier for the GRO Adhesive to lock two adjoining pieces of turf

Size and Weight

- » Width: 12 inches
- » Length: 330 feet
- » Coverage: 330 ft²
- » Weight: 11 pounds per roll

GRO SEAMING ADHESIVE (XGS SYNTHETIC TURF ADHESIVE)

The GRO Turf Seaming Adhesive (supplied as XGS Synthetic Turf Adhesive) is a single-part, moisture-cure, urethane adhesive designed specifically for bonding the backing of synthetic turf when seaming is required. Turf Seaming Adhesive is non-toxic, non-hazardous, and does not require mixing. The Seaming Adhesive is supplied in 29-oz tubes that can be extruded using a standard, large caulk gun. Seaming Adhesive shall be applied to the GRO Seaming Fabric and then troweled thin prior to bonding.

Features and Benefits

- » Elasticity allows adhesive to flex without breakage
- » Eco-friendly, uses no acetone or solvents
- » Extremely durable and perfect for heavy-duty use
- » Withstands extreme weather conditions
- » Made in the USA

LEED Information

- » Pre-consumer/post-industrial recycled content: 0%
- » Post-consumer recycled content: 0%
- » Manufacturing point: Dalton, GA 30721

Typical Properties and Characteristics

Grab Time	1 – 3 hours depending on presence of moisture
Cure Time	24 hours at 77°F (25°C) and 50% relative humidity
Storage	Store indoors between 60°F and 90°F (15.6°C – 32.2°C)
Shelf Life	9 months after manufacturing date