

GEO FLO[®] +

SHOCK PAD





TABLE OF CONTENTS

PART A.....TECHNICAL DATA

PART B.....WARRANTY

PART C.....INSTALLATION INSTRUCTIONS

PART A
TECHNICAL DATA SHEETS



MADE IN USA

PATENTED

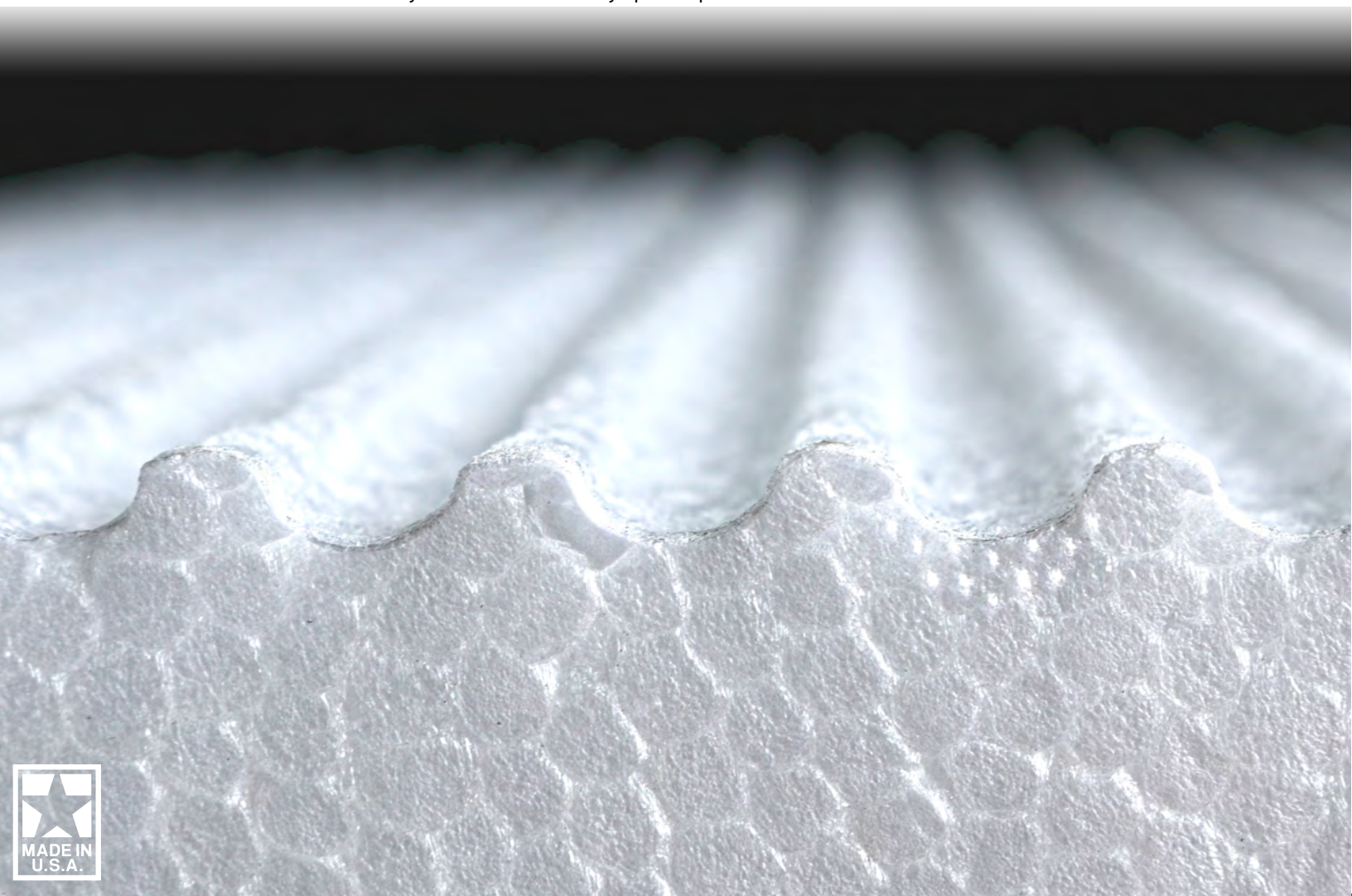
15mm/20mm/25mm



DYNAMIC SHOCK PAD & DRAINAGE BLANKET

GeoFlo®+ is a patented moisture conducting, non-absorbent, geo-composite shock pad made from polyolefin materials. GeoFlo+, available in both solid core and perforated core, is a pre-fabricated system that consists of a formed expanded polypropylene core. It is a highly resilient closed-cell expanded bead product, and is an ideal energy absorbing material for sport surfaces that requires impact protection and shock absorption. The use of GeoFlo+ greatly reduces risk factors associated with poor subsurface soils.

Installation provides an uninterrupted vertical-to-horizontal flow path for superior rainfall evacuation and enhanced G-MAX performance without changing the ball-action or feel under-foot. The integrity of the systems expansion and contraction capabilities is maintained by the use of the GeoClip™ system which holds the GeoFlo+ in place during the installation of the turf system. The GeoClip also decreases the risk of wind negatively impacting the installation process. The GeoClip allows each individual pad to naturally react to changing temperature and humidity conditions while assuring the turf installation team is able to perform on a secure monolithic work surface. The proper installation of the GeoFlo+ system reduces G-MAX by up to 50 points.



PHYSICAL PROPERTIES	TEST METHOD	SAE	DATA
Tensile Strength	ASTM-D3575	psi	55.5
Tensile Elongation	ASTM-D3575	%	18
Tear Strength	ASTM-D3575	lbs/ft	13
Thermal Conductivity (K)	ASTM-C177	BTU-in/ft ² -hr-°F	0.25
Thermal Resistance (R)	ASTM-C177	@70°F	3.9
Coeff. of Lin. Therman Expansion	ASTM-D696	in/in/°F x 10 ⁻⁵	5.7
Service Temperature	ASTM-D3575	°F (Max)	212
Water Absorption	ASTM-D3575/C272	%	<5.0
Compressive Creep	ASTM-D3575	% (psi)	1.2(2.0)
Flammability	FMVSS-302	<4.0in/min	Pass



PLEASE NOTE: For standard GeoSurfaces Products. Values shown are typical of the product and should not be construed as specification limits.

PROPERTIES

GeoFlo+ is multi-directional (isotropic) in nature, so unlike traditional extruded products, which yield different properties along the extrusion, vertical and horizontal axis, the properties of the GeoFlo+ products are the same for a given density along all 3 axis, regardless of orientation.

RESILIENT POLYPROPYLENE SHOCK PAD

Nominal Size: 4' x 6' / Thickness Options: 15 mm, 20 mm, 25 mm
Horizontal Drainage: 50" per Hour Minimum
Vertical Drainage: 100" per Hour Minimum (On Perforated Core)
Maximum Initial G-MAX Less than 135

SAFETY FEATURES

Guaranteed Maximum G-Max of field of 135 during 8-year warranty period of turf (ASTM F355 or ASTM 1936) as a system test with infill.

Guaranteed 1.3 HIC rating during 8-year warranty period of turf (ASTM F355-16e1) as a system test with infill.

RESISTANCE

Flammability Resistance TEST FMVSS-302: Pass
Fuel Immersion Test Coast Guard (Fuel B): Pass
Chemical Resistance (1 Hour Exposure to Solvents): Pass

GEO
SURFACES



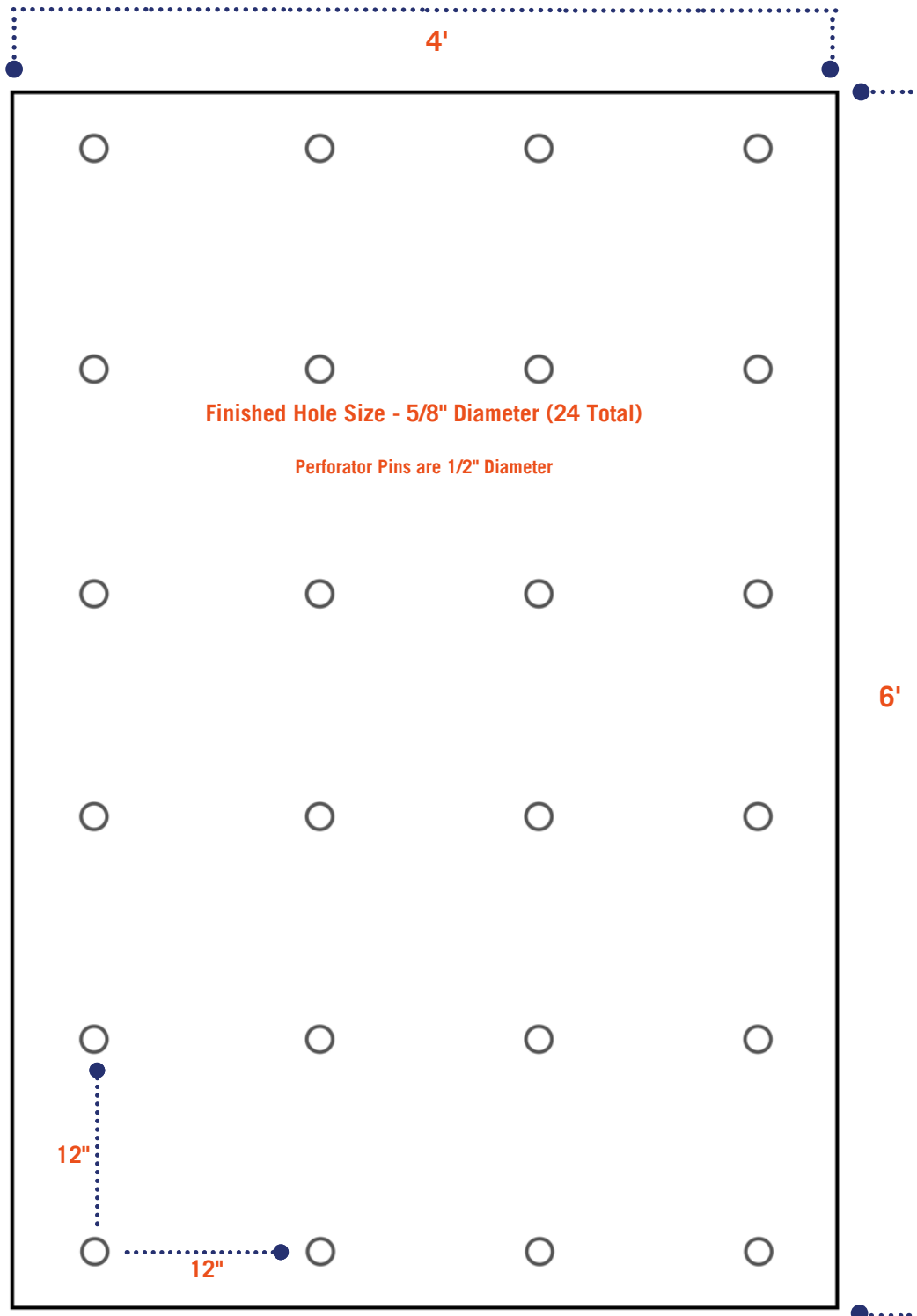
A TENCATE COMPANY

"TURN KEY" SPORTS SURFACING

GeoSurfaces is one of the few companies in the USA that offers in-house "turn key" sports lighting and sports surfacing. We are a licensed Professional Construction Firm, Electrical Firm, and Construction Manager that can offer complete construction and installation of World Athletics, FIH and ITF Approved Surfaces



Perforation Pattern



PART B

WARRANTY



GEOFLO+ 25-YEAR PRODUCT WARRANTY TERMS AND CONDITIONS

1. LIMITED WARRANTIES: The terms and conditions of this Limited Warranty are as follows. GeoSurfaces, Inc. ("GeoSurfaces") warrants to the Owner of the playing field(s) ("Owner") at which the GeoFlo+ Pad ("Pad") has been installed that for a period of twenty-five (25) years from date of purchase (the "Warranty Period"), the Pad will remain free of defects in materials and workmanship. The Pad will not degrade under normal use as a shock pad or drainage blanket for artificial turf sport surfaces and that as a system (Pad with infill turf) will not exceed a field average G-Max of 135 G's as tested according to the ASTM 1936 using the F-355-A Missile when field test conditions do not fall below 40° F. Field must be free from any frost or contaminants, provided the initially installed turf remains over the Pad and has never been replaced (the "G-Max Guarantee"). The Pad will be part of an artificial turf surface system that will not exceed a field average Head Injury Criterion (HIC) result of 1000 from a 1.3 meter drop height as tested according to the ASTM F355-16 standard missile E. The field average is defined as the overall average of the field test locations according to the testing specification. Test conditions above 40° F with field free of any frost or contaminants, provided the original turf initially installed over the Pad has never been replaced (The "HIC Guarantee"); (collectively, the "Limited Warranties").

2. PROCEDURE FOR WARRANTY CLAIM: In the event the Pad fails to comply with these Limited Warranties during the Warranty Period, Owner shall provide GeoSurfaces' written notice within thirty (30) days after its first discovery of non-compliance and allow GeoSurfaces an opportunity to inspect the Pad (in place as originally installed) before modification or alteration of the Pad in any way.

3. EXCLUSIONS: Notwithstanding any provision herein, GeoSurfaces does not warrant and shall not be responsible for, the Limited Warranties shall not cover, and Owner shall not be entitled to recover, (for breach of contract, tort, strict liability, or otherwise), any loss, liability, claim, damage, cost, expense, or defect (collectively, a "Claim") caused by, in whole or in part, or arising from any party's failure to install, use, and maintain the Pad strictly in accordance with GeoSurfaces' Installation and Manufacturer's Standards. Any party's improper handling, use or protection of the Pad, including, but not limited to excessive static loads (in excess of 35 PSI for a period greater than 35 minutes) or dynamic loads (impact in excess of 110 PSI) or breaking, tearing or improper cutting of the Pad. Any party's improper or inadequate site preparation, including, without limitation, improper base material, grading, compaction, or material usage in perimeter drain collectors and other drain collectors. Any improper or inadequate site drainage, including without limitation, lack of adequate drainage systems,

gutters, collectors, channels, and water diversion mechanisms or the failure of the downstream drainage system to adequately convey the flow of water. Any permanent depression of the surface of the Pad that is less than 5 mm in depth, any cause or event that is not reasonably foreseeable by GeoSurfaces, including acts of God, extreme weather events, fires, floods, lightning, earthquakes, landslides, explosions, riots, wars, hurricane, sabotage, terrorism, vandalism, accident, restraint of government, governmental acts, and injunctions or any condition related to the soil, base, earth, or subsurface upon which the Pad may be installed, including without limitation, soil expansion, shifting, contraction, subsidence, compression, or erosion, improper or inadequate selection, use, installation, maintenance, repair, or replacement of the field's artificial turf system, including any infill. Any cumulative exposure of the Pad to sunlight or any other source of Ultraviolet light for more than ten (10) calendar days. Any contamination of the infill with sand, dirt, or other substances.

G-MAX & HIC GUARANTEE: The failure to install and maintain the Pad with a minimum depth of 17mm (5/8") of infill in the turf system will void the G-Max portion of the Warranty. The failure to install and maintain a minimum infill depth of 25 mm (1") of infill will void the HIC portion of the Warranty. As to the G-Max and HIC Guarantees, any Claim occurring after the original turf that was initially installed after the Pad has been replaced, except that prior to each turf/infill replacement during the warranty period, if the Owner requests prior to turf/infill replacement in writing and allows for GeoSurfaces to inspect the Pad and approve the replacement turf/infill system, GeoSurfaces may, at GeoSurfaces' sole discretion, agree in writing to extend the G-Max and HIC guarantees for the replacement turf/infill life cycle but in any case no longer than the original warranty term; (collectively, the "Exclusions").

4. REMEDY: As Owner's sole and exclusive remedy for any Claim relating to or arising from the Limited Warranties or Pads, and provided the Claim was not caused by or arising from any Exclusion, GeoSurfaces will deliver to the Owner and install new Pad to replace the non-conforming Pad. The installation shall include the temporary removal and repair or replacement of the artificial turf and infill over the affected area. GeoSurfaces shall have discretion as to whether to repair or make replacement of the artificial turf and infill. If Owner decides to replace the entire surface for reasons other than a breach of GeoSurfaces Warranty, Owner shall give GeoSurfaces reasonable advance notice of replacement of the surface so that a GeoSurfaces representative can be present at the time of the turf replacement to inspect the GeoSurfaces Pad.

5. LIMITATION OF LIABILITY: OWNER'S SOLE AND EXCLUSIVE REMEDY FOR ANY AND ALL CLAIMS ARISING OUT OF OR RELATING TO THE PURCHASE, USE, OR CONDITION OF ANY PAD OR THIS LIMITED WARRANTY UNDER ANY LEGAL THEORY, INCLUDING WITHOUT LIMITATION, BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE (INCLUDING NEGLIGENT MISREPRESENTATION), OR STRICT LIABILITY, SHALL BE LIMITED TO THE REMEDIES PROVIDED IN SECTION 4 (REMEDY) OF THIS LIMITED WARRANTY. IN NO EVENT SHALL GEOSURFACES BE LIABLE FOR, AND OWNER HEREBY WAIVES ANY RIGHT TO RECOVER, ANY PUNITIVE, SPECIAL, CONSEQUENTIAL, OR INDIRECT LOSSES OR DAMAGES, ALL OF WHICH OWNER EXPRESSLY DISCLAIMS. GEOSURFACES' TOTAL AGGREGATE LIABILITY TO OWNER FOR ANY AND ALL CLAIMS UNDER ANY LEGAL THEORY ARISING FROM OR RELATING TO THE PAD, ANY ACTION OR INACTION OF GEOSURFACES, OR THIS LIMITED WARRANTY, SHALL NOT EXCEED THE TOTAL CONSIDERATION OWNER PAID FOR THE NON-CONFORMING PAD.

6. **DISCLAIMER OF WARRANTIES:** THIS LIMITED WARRANTY AND ITS REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL, WRITTEN, STATUTORY, EXPRESS OR IMPLIED. GEOSURFACES DISCLAIMS ALL STATUTORY AND IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS.

GENERAL TERMS: This Limited Warranty shall be governed, interpreted, and enforced solely under laws of the State of Louisiana, irrespective of conflict of laws principles. This right shall not be waived, altered, or modified except in writing signed by the Parties and shall entirely supersede and replace any previous representations or warranties made in relation to the Pad. This warranty may only be assigned by GeoSurfaces in its sole discretion. Failure to enforce any provision of this Limited Warranty shall not constitute a waiver of any other provisions.

Project Name: _____

Owner’s Name & Address: _____

Date of Purchase: _____

SIGNATURE _____ DATE ____ / ____ / ____

FOR: GeoSurfaces, Inc.

PART C

INSTALLATION INSTRUCTIONS



1. Check surface planarity using a string line in a maximum 50' wide length to assure grade tolerance is within the specifications of the project documents.

2. Check surface planarity using a string line in a maximum 50' wide length to assure grade tolerance is within the specifications of the project documents.

3. Verify that all materials necessary for the installation are on site.

4. Verify environmental conditions are adequate for the installation of the panels. Wind conditions with gust above 20 mph may make the panel installation difficult.

5. When installing on a stone base (porous or non-porous), have proper tools or equipment available to smooth out stone imperfections that may be caused by the equipment used to stage or move materials on to the stone base.

6. If carts or other wheeled platforms are used to stage material, make sure tires are air inflated and have a psi of less than 35 pounds. The wider the tire utilized on the stone base the more effective it will be at eliminating potential stone movement.





All GeoFlo+ panels (regardless of size) should be covered when not being used in the direct installation process.

These panels contain no UV stabilizers and direct sunlight will damage the panels. This type of damage cannot be repaired and panels experiencing UV degradation must be replaced at the cost of the contractor. **DO NOT LEAVE PANELS EXPOSED TO SUNLIGHT AT ANY TIME OTHER THAN DURING THE DIRECT INSTALLATION OF EACH INDIVIDUAL PALLET.** Deterioration or damage caused by direct sunlight will not be considered a warranty item.

If the panels are being installed on any type of stone base, a geotextile fabric is recommended to be installed on top of the stone and under the panels.

The geotextile fabric may be laid out end to end or side to side on the stone surface. Direction of the geotextile fabric does not alter the function or use of the panels. If the panels are being installed on concrete or asphalt, geotextile fabric under the panels is not required. A clip system may be provided to help with wind abatement and to stabilize the panels during turf panel placement. The clips are optional and are not required. **See Fig B**

It is recommended to start the installation of the panels on one end of the field and work toward the longest distance of the field. **See Fig C**

The panels have a top and bottom. For perforated systems, the drainage channels (ridges) are placed on the bottom. For non-perforated systems, the drainage channels are placed facing up. **See Fig A**

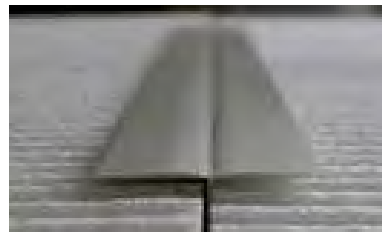
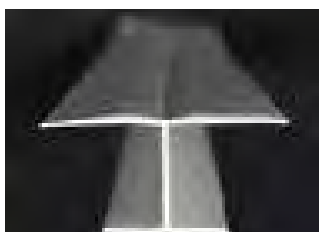
For wind abatement during installation, it is recommended to place geotextile fabric from anchor board to anchor board over each 15' section of panels installed.

After installation of the top layer of geotextile fabric, it is recommended to roll out the pre-determined turf panel over the section of panels to further assist with wind abatement or panel movement. **See Fig C**

It is allowable to staple the panel to the edge anchor board. Panels should be installed with the horizontal drainage channel openings toward the collector trenches or pointing down the slope toward the lowest elevation. Panels should be installed with a ¼" gap for expansion and contraction. If the clip system is utilized, the clips will act as the expansion and contraction spacer. Trim panels with a typical box knife or turf blade for precise fit. Cut sections may be utilized in other areas of installation if applicable.

Do NOT cover perimeter collector drainage trenches with the bottom layer of geotextile fabric unless directed by the Owner's representative to do so.

On non-perforated systems, perforated panels must be installed over the collector drainage trench sections. The top layer of geotextile fabric can be stretched from perimeter anchor board to perimeter anchor board. Make sure all geotextile fabric, bottom layer and/or top layer are porous.





Additional Recommendations

It is not recommended to drive motorized equipment directly on the panels prior to the installation of the top geotextile fabric. Once this geotextile fabric is installed, it is acceptable to drive light equipment (less than 2500 lbs) with turf tires with a psi of less than 35 pounds to roll out turf panels.

Do not install panels ahead of the turf sections that are being rolled out. Uncovered panels or unsecured panels are susceptible to movement in winds. **DO NOT LEAVE PANELS EXPOSED TO SUNLIGHT AT ANY TIME OTHER THAN DURING THE DIRECT INSTALLATION OF EACH INDIVIDUAL PALLET.**

Do not place a vehicle on the panels and turf system of more than 6000 lbs. Tire pressure must not exceed 35 psi on any vehicle placed on the panel and turf system. Static loads greater than 6000 lbs will void the product warranty. No forklifts, or construction equipment (skid steers, loaders, excavators or other) should be allowed on the panel or turf surface.

For event loading including stages or other apparatus that may be installed on top of the turf system, weight distribution panels designed for artificial turf should be utilized.

Recommendations for Infill Installation in Turf Panels

1. Infill should be placed using broadcast spreaders with turf tires with the psi on the tires never exceeding 35 pounds.
2. To avoid wrinkling, infill equipment must be driven slowly with wide, sweeping turns. If possible, turn off the turf surface and drive in only straight lines while on the turf surface.
3. To avoid wrinkling, it may be necessary to drive the broadcast spreader in reverse for the initial passes of infill material installation.
4. It may be necessary to use partial loads of infill to lessen the weight until the turf system has enough infill weight installed to stabilize the turf backing.

For additional information, comments, or questions, please call your dealer or email us at sports@tencategrass.com

INSTALLATION YOUTUBE VIDEO - <https://youtu.be/ToY1uwlXiV8?feature=shared>

PANELS SHOULD BE INSTALLED WITH THE HORIZONTAL DRAINAGE CHANNEL OPENINGS TOWARD THE COLLECTOR TRENCHES OR POINTING DOWN THE SLOPE TOWARD THE LOWEST ELEVATION

