

UltraBaseSystems®

# CHAMPION PANEL

The industry spoke, we listened and created a new panel with all the engineering accomplishments of the Professional panel but at a new, lower price point. Designed at just  $\frac{3}{4}$  of an inch high, the Champion panel delivers amazing strength underfoot while providing the safety and performance athletes and their moms demand.

Product Number: UBSCHAMP

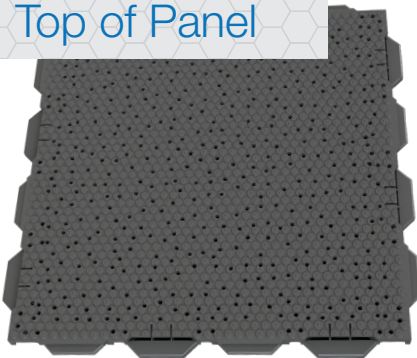
**PANEL DIMENSIONS:** Actual panel dimension 30" x 30" x .75" / 762mm x 762mm x 19.05 mm

**Square footage area once installed:** 28" x 28" x .75" / 711.2mm x 711.2mm x 19.05 mm = 5.44 ft<sup>2</sup> / .505 M<sup>2</sup>

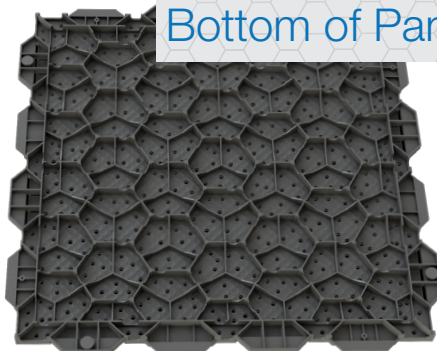
**PANEL WEIGHT:** Average panel weight: 1.46 pounds sq ft/.66 kg per sq m - 6.2 lbs per panel /2.81 kg

US Patent # 7,516,587 | US Patent # 7,930,865 | CA Patent #2,663,050 | RA Patent #2410508 | Additional US and Foreign Patents Pend

Isometric View,  
Top of Panel



Isometric View,  
Bottom of Panel



The structural superiority of the panel is designed to dramatically reduce the need for extensive site preparation both indoors and outdoors, creating a base structure capable of supporting enormous loads while providing greatly improved GMAX and HIC impact numbers resulting in SAFER and more predictable playing surfaces. Large water flow volumes both vertically and horizontally are achieved with UBS Champion creating a base system capable of rapidly directing rainwater away from the turf and the players. Perfect planarity and the UBS patented non-slip turf barbs all help to create a base unlike anything the market has ever seen.

## PALLET AND BOX DIMENSIONS AND VOLUMES:

Box of 14: 32"x31"x12" - 85 lbs 81cm x 78 cm x 30 cm - 36 kg

Pallet of 62: 60"x30"x29" - 430 lbs 152 cm x 76 cm x 73 cm - 195 kg

Pallet of 116: 60"x30"x48" - 748 lbs 152 cm x 76 cm x 121 cm - 339 kg

## TRUCK & CONTAINER VOLUMES:

20 ft. container: 2,552 panels = 13,883 sq. ft. / 1,290sq. m.

40 ft. high cube: 4,640 panels = 25,242 sq. ft. / 2,545 sq. m.

53 ft. truck: 6,728 panels = 41,648 sq. ft. / 3,868sq. m. per truck

\*All Measurements are per truck



ULTRABASESYSTEMS®

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SAFETY



DRAINAGE



LIFE-CYCLE COST



COST SAVING



CONSISTENT  
PERFORMANCE



INSTALLATION



LOAD BEARING



SUSTAINABILITY



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# UltraBaseSystems® **CHAMPION** PANEL

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## at a Glance

### **GMAX**

When installed on a compacted stone base without turf, UltraBaseSystems Champion Panel achieves a GMAX rating of 119.

### **ASTM AND FIFA STANDARDS**

When paired with an approved turf/infill system, UltraBaseSystems Champion Panel meets or exceeds ASTM, FIFA\* and FIFA\*\* standards for GMAX, Vertical Deformation, Force Reduction, Energy Restitution and Rotational Resistance.

*Independent test results are available at: [www.UltraBaseSystems.com/panel-technology/test-results](http://www.UltraBaseSystems.com/panel-technology/test-results)*

### **VERTICAL DRAINAGE**

Single panel flow rate 1582 inches per hour (4018 cm/hr).

### **HORIZONTAL EVACUATION RATE**

Single panel rain fall evacuation 126 inches per hr (320 cm/hr).

### **LOAD CAPACITY**

Static load capacity for the weakest location of the panel is equivalent to 374 psi (26.3 kgf/cm<sup>2</sup>) at 70°F (21°C). Load values when placed over a full descending cellular rib 998 psi (70.17 kgf/cm<sup>2</sup>).

### **SHEAR RESISTANCE**

UBS patented turf barbs provide 3 x the grip strength for turf stability as compared to a rock base.

### **VERTICAL BALL REBOUND**

When paired with the proper synthetic turf and fill requirements, UBS Champion meets the FIFA 2\* requirements.

### **STORAGE CAPACITY**

Single panel fluid storage capacity = 1.85 gallons (7 Liters).

### **EXPANSION**

IBT patented locking feature allows adequate expansion between panels to prevent panel distortion when properly installed. Expected expansion per panel at 140F degrees (60C) is 3/32" (.24 cm).



## **MATERIAL:**

UBS panels are manufactured from a proprietary blend of recycled post industrial polymeric material. UBS panels can often include a percentage of recycled synthetic grass as part of the proprietary material blend making UBS panels a solution for preventing recycled synthetic grass from entering landfills but instead return as part of a new field construction.

## **< CELL DETAIL**

## **GMAX AND HIC SAFETY TESTING:**

Extensive testing has occurred both in laboratory settings and actual field installations showing definitively that UBS panels dramatically reduce GMAX and HIC values based on the cellular panel design. GMAX values ranging from the low 90's to 120's on compacted earth are typical with the lower end of the scale being the norm when panels are installed with a 2.25" (5.7 cm) infill turf system. GMAX values ranging from 115-140 can be expected when standard blend panels with minimal to no fill are installed over concrete. However, various blends of polymeric material can be manufactured into the panels increasing resiliency and improving GMAX while maintaining structural firmness underfoot. Our panels test at a GMAX of 121 when tested without turf on a 2" (5.08 cm) layer of compacted #7 and #81 stone with a 1" (2.54 cm) top layer of compacted stone fines. Our panels were placed on the UBS geo stabilizing fabric which covered the compacted stone test plot. Our panels tested at a GMAX of 81 when placed with the fabric over a 3" (7.62 cm) rock base. The results of these tests conclusively show that UltraBaseSystems provided superior GMAX before the turf system is installed.

HIC values have shown drop heights of up to 8' (2.44 m) are achievable when a lower durometer polymeric blend is utilized. Drop heights over 6' (1.83 m) will require, in conjunction with the UBS panels, a foam back turf, infill turf or minimal pour in place EDPM playground system.

Laboratory and field tests also show extremely consistent ball bounce, ball roll and foot rotation readings concluding UBS is the foundation of a SAFER and more predictable playing surface. Test results available upon request.

## **DISPLACEMENT:**

Independent lab results show that UBS panels, when installed over a geo synthetic fabric on 95% compacted earth and repeatedly subjected to a live load equivalent to an ambulance tire load for 2.77 hours, resulted in far less displacement than 6" (15.24 cm) of compacted 1" (2.54 cm) minus stone. The same results were also achieved on 70% compacted earth (although not recommended for real life situations). Conclusion: UBS is a more stable sub base than 6" (15.24 cm) of compacted stone and results in less displacement under load. This test also confirmed a drastic difference in "softness" of the panel as compared to compacted stone. In essence UBS is a better impact absorbing surface yet far more structurally sound than stone, a major advancement.

## **VERTICAL DRAINAGE:**

The vertical flow rate of an individual UBS panel without turf is equivalent to 1,582" per hr (4018 cm/hr).

## **HORIZONTAL DRAINAGE:**

The horizontal flow rate of rainwater exiting from under an individual UBS panel = 126" per hr (320 cm/hr).

**DRAIN SLOTS >**



## **STORAGE CAPACITY:**

Each UBS panel has the ability to store the equivalent of 1.85 gallons (7 L) of water in the underside cellular structure.

## **R FACTOR:**

The R factor value of a UBS panel when covered with a 1.5" (3.8 cm) synthetic grass filled with 1 pound (.5 kg) of sand and one of rubber is equivalent to an R value of 3.4.

## LOAD CAPACITY:

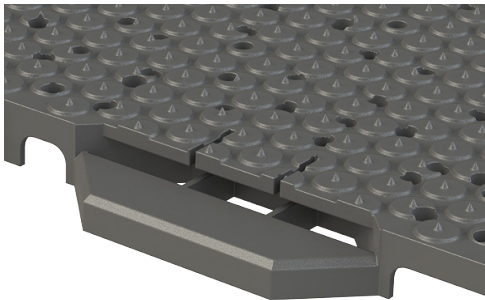
Designed first and foremost as a structural replacement for compacted rock, asphalt, or concrete, it is imperative that the load capacity of the UBS panel is extremely high. Static load capacity for the weakest location of the panel is equivalent to 374 psi (26.3 kgf/cm<sup>2</sup>) at 70°F (21°C). Load values when placed over a full descending cellular rib are 998 psi (70.17 kgf/cm<sup>2</sup>). Engineered with a 4.25" (10.8 cm) hexagonal cell structure, UBS panels are capable of accepting large static live loads including crowd and vehicle traffic such as utility trucks, gators, soft tire forklifts, and emergency vehicles with minimal deviation when installed as per manufactures specifications on a properly prepared stable sub-base.

## PLANARITY:

The UBS patented over/under locking tooth design creates perfect alignment from panel to panel resulting in a smooth transition across the entire surface of the installation. The planarity created by the design results in a perfectly smooth turf installation which achieves predictable ball roll and bounce and greatly improves the visual appeal of the installation surface. A perfectly flat or contoured surface is easily achieved depending upon base preparation.

## EXPANSION:

The standard field polymeric blend has expansion rate of 3/32" (.24 cm) over the length of the panel at 140° F (60° C). Each UBS panel is designed with a patented expansion joint system which allows all movement to occur within the confines of each panel and not disengage the connection points or affect the overall size of the installation area. In essence, all movement occurs from panel to panel and not at the perimeter. This engineering achievement prevents warping, unwanted surface deviations or panel separation from occurring.



## PANEL LOCKING SYSTEM:

The patented over/under interlocking tooth system not only ensures perfect planar alignment from panel to panel creating a flat planar top surface which is critical for sports surface applications for ball roll and footing but also ensures the panels stay locked together once a quadrant of nine panels is assembled. This patented locking feature helps prevent panel movement or disengagement due to weather conditions or vehicle traffic.

< LOCKING DETAIL

## PANEL AIRFLOW:

The void that is created on the underside of the panels is due to the cellular compartment design and water flow openings and has the capability of circulating under the panels.

## INSTALLING OVER UNEVEN TERRAIN:

UBS is designed to follow the contours of uneven terrain making installation over field crowns, uneven ground contours or undulating putting greens easy to accomplish.

## PANEL CUTTING:

UBS panels are easily cut with any traditional woodworking tools inclusive of table saws, circular saws or a jigsaw.

## INSTALLATION TIME:

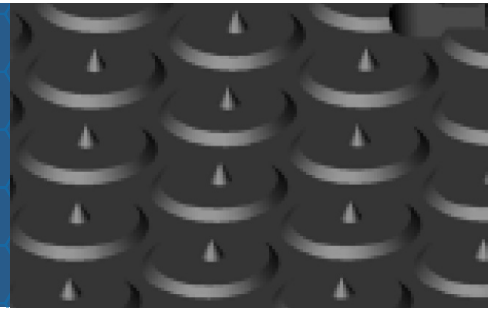
Time studies indicate that a crew of 10 laborers can install an average of 5000 ft.<sup>2</sup> (465 m<sup>2</sup>) of UBS panels per hour. These numbers can change due to the qualifications of the crew but are actual numbers that have been achieved on actual field installations.



## **NONSLIP TURF SYSTEM:**

The 3000 patented turf barbs per panel create a very high coefficient of friction which dramatically reduces turf movement issues associated with many other base replacement or stone systems. The turf barbs, when utilized with a felt backed or foam backed turf, will create a totally stationary turf system which will not move or slip on the UBS base system. This technology allows for less infill or a non-slip non filled turf system.

**SPIKE DETAIL >**



## **TURF INSTALLATION:**

Due to the structural design and polymeric selection of the UBS panel, the need for nailer boards and/or curbs are often times unnecessary given the fact the turf can be easily affixed to the panels on the perimeter edge by use of an industrial stapler. Essentially, each panel becomes its own nailer board eliminating this additional costly expenditure. The instability of the expansion and contraction coefficients of the turf and the selection of infill amounts will play a major role in the decision to add a poured curb or a buried nailer board. General consensus is minimal filled or non filled systems may require some type of turf anchoring system, other than the panels in an effort to help control the wrinkles which could occur with unstable turf. A filled turf system adds ballast to the turf and will counteract the turf movement, hence allowing the turf to be attached directly to the panels. The UBS panels are designed to allow for panel expansion within the confines of the installation area effectively eliminating outward perimeter size variations when installed using proper installation guidelines. Our panels are stable, but turf often is not and this must be taken in to consideration. Stretching the turf on the panels and rolling the turf to help lock the thousands of turf barbs into the turf back will also help reduce wrinkles in the turf by improving lateral stability.

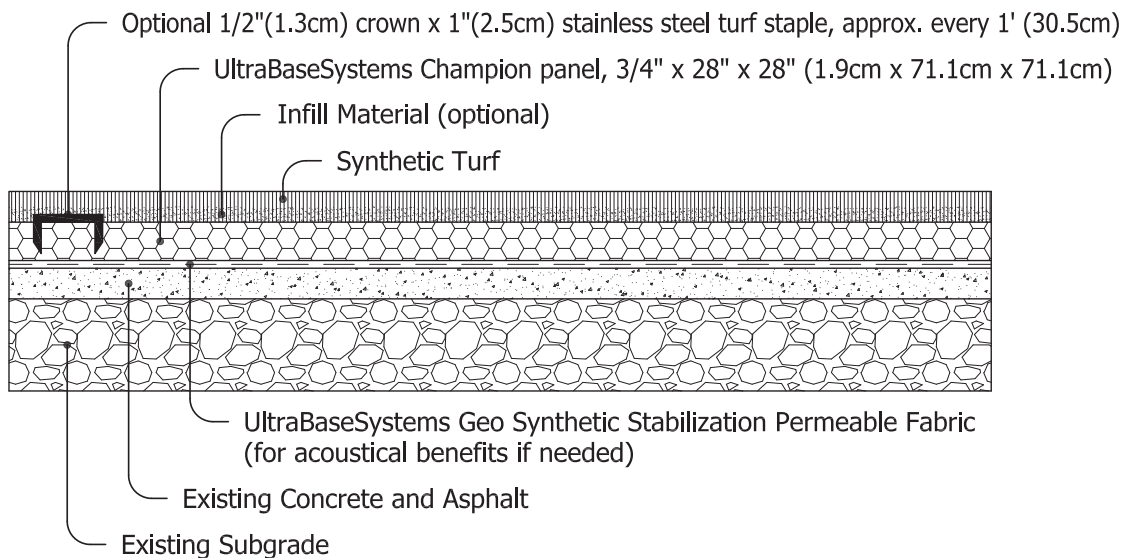
UBS panels can remain uncovered for an indefinite period of time while waiting for synthetic turf to arrive for installation. This gives the installation crew the ability to install the base and return at a later date for turf installation without fear of degrading the panels or panels moving due to weather-related elements.

## **SUB BASE PREPARATION:**

The structural integrity of the UBS panels substantially differentiates this system from other shock pad and/or drain systems currently on the market. UBS is a structural base system designed to dramatically reduce or replace the need for compacted rock base systems or concrete and asphalt sub base installations. When installed over a properly prepared earth sub base as approved by a licensed engineer, it is imperative that a proper Geo synthetic fabric or Geo system is utilized with UBS as a stabilizer. There are many geo fabrics that work well with UBS such as a high flow woven poly propylene fabric. In all situations you are looking for a low elongation/high tensile strength product. Depending upon drainage requirements, the use of an impermeable liner underneath the permeable geotextile fabric may be required in order to adequately divert rainwater to engineered storage system. Perhaps the largest problem facing base construction is water. From expansive soils to frost heave water is an issue. Many geo engineers we have consulted believe that the elimination of the water from the soil is the key to ground stability and predictability as it pertains to proper base construction using UBS. Recommendations for fabric types are available from UBS to be presented to the contractor for consideration based on individual sites scenarios.

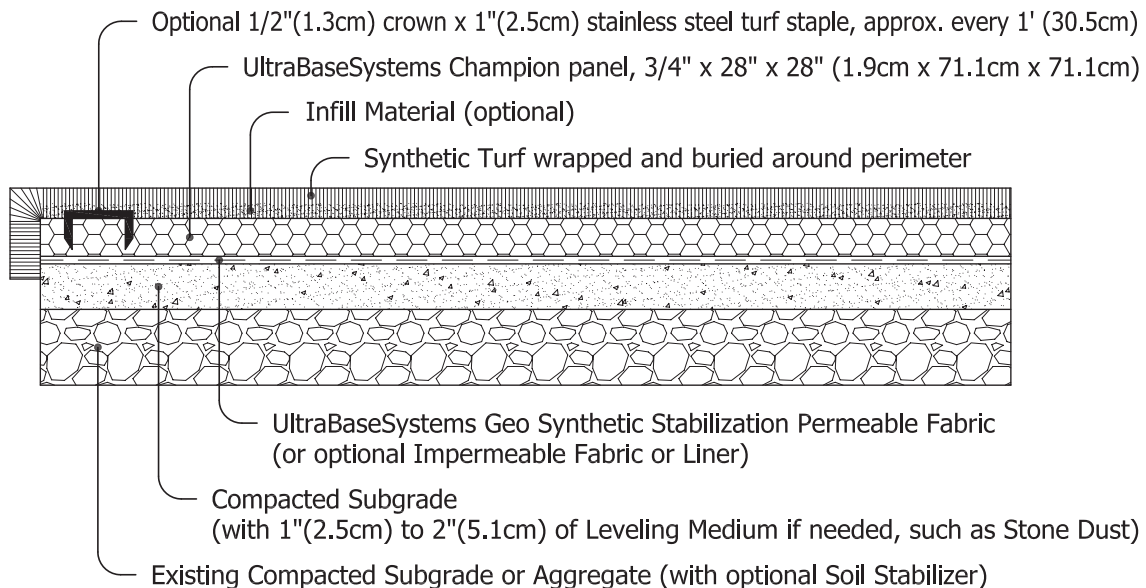
# TECHNICAL DRAWINGS

## Installation Profile on Solid Subgrade



Single application of Geo Fabric installed directly under UltraBaseSystems, yet directly over asphalt and/or concrete

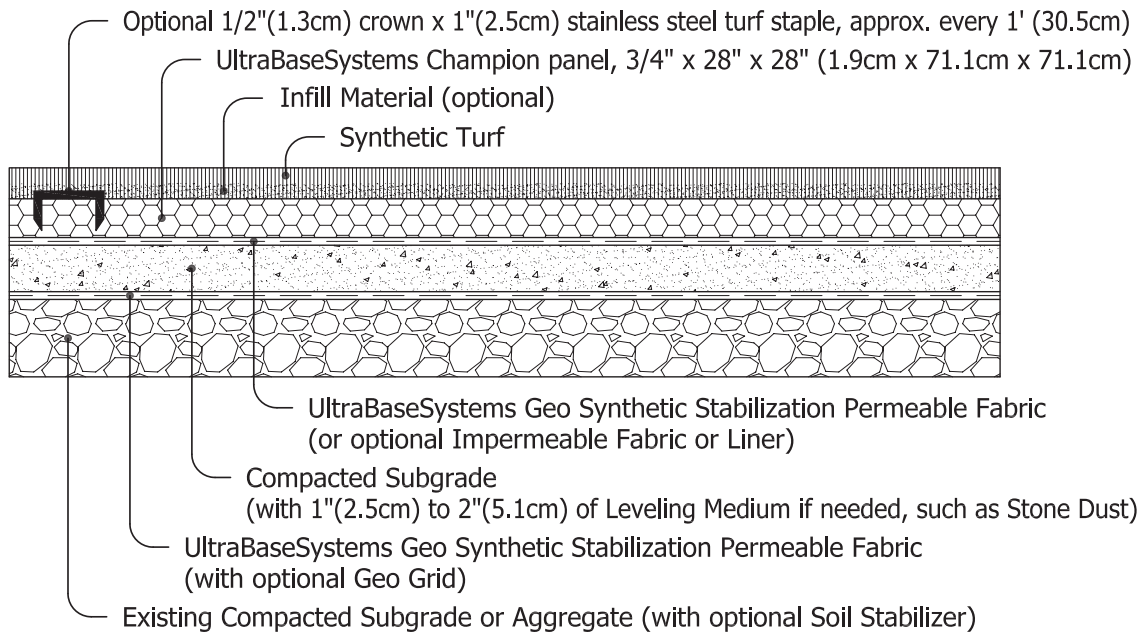
## Installation Profile on Compacted Subgrade



Single application of Geo Fabric installed directly under UltraBaseSystems, yet directly over compacted subgrade

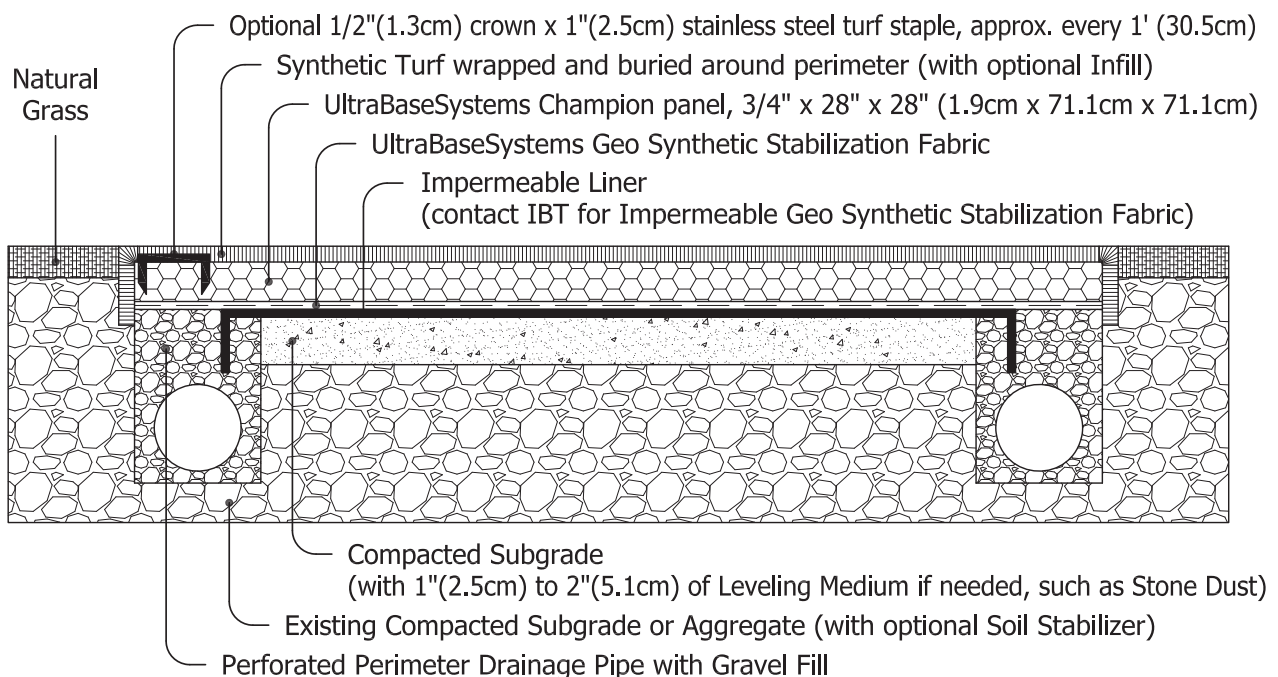
# TECHNICAL DRAWINGS

## Installation Profile on Compacted Subgrade with Additional Stone Dust and Geo Grid



Double applications of Geo Fabric with varying depths of clean compacted aggregates

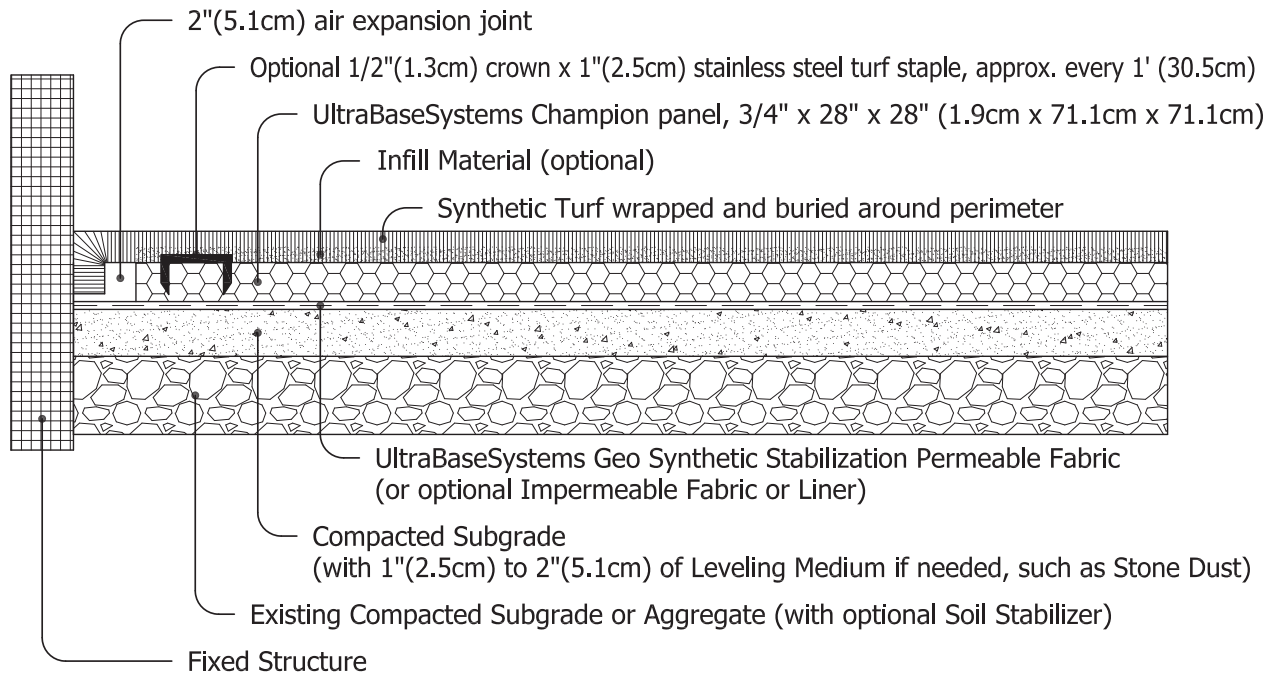
## Installation Profile with Perimeter Drainage System



Single application of Geo Fabric installed directly under UltraBaseSystems, yet directly over compacted subgrade

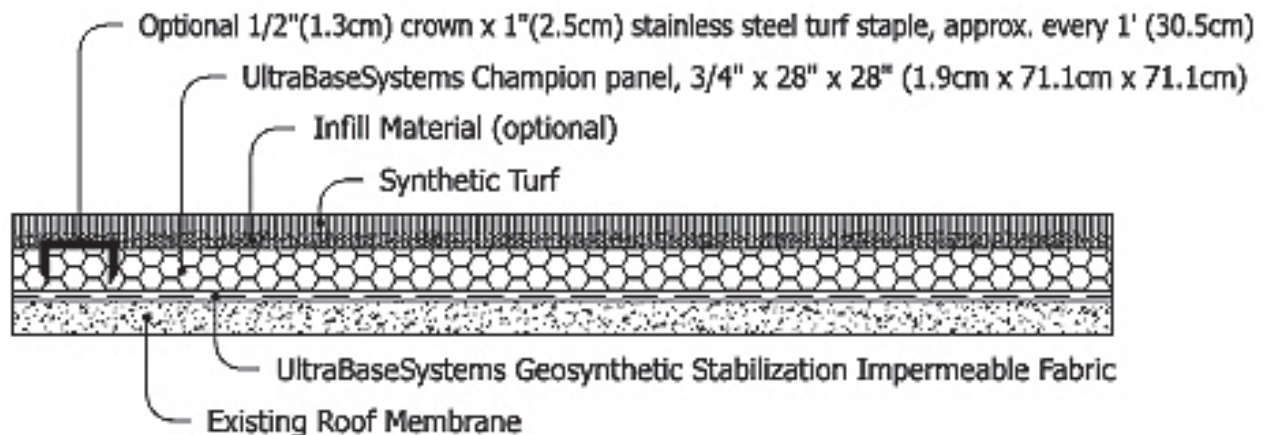
# TECHNICAL DRAWINGS

## Installation Profile on Subgrade Boarding Fixed Structure



Single application of Geo Fabric installed directly under UltraBaseSystems, yet directly over compacted subgrade

## Installation Profile for Rooftop Installations



Single application of Geo Fabric installed directly under UltraBaseSystems, yet directly over roof membrane



**TEST RESULTS PROVIDED BY:**

TSI Testing Services  
Dr. Martyn Shorten, BioMechanica LLC  
ISA Sport USA  
Innovative Base Technologies LLC  
Dison C&S LLC  
Bathurst, Clarabut Geotechnical Testing, Inc.  
European Turf Group  
The InnovaNet Group  
Dr. Louie C. Elliot University of Tennessee  
R&D Services

**All Test results available upon request from Innovative Base Technologies**



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