# UltraBaseSystems®
# Quick Start Guide to Geotextile Fabrics

As previously mentioned, geotextile fabrics play an integral role in providing stability and a structural weight-bearing base in partnership with UltraBaseSystems Panels. So what kind of geo do I need for my project?

**Location** (indoor vs. outdoor), **use** (permeable vs impermeable) and **surface** (bound vs. unbound) need to be assessed before deciding. In a nutshell, which fabric to use depends on what you're trying to accomplish, and where you're trying to accomplish it.

For **indoor** applications on **bound surfaces** such as asphalt, concrete, tile, etc., a **non-woven needle-punched** geotextile can potentially be used as an acoustical barrier for un-level floors, especially when a non-infilled turf is being used. Lighter turfs may not have the ballast required to weigh the panel flush with the irregular surface, and a tapping sound from two hard surfaces coming into contact with each other could occur.

While less common, **indoor** applications on **unbound surfaces** such as crushed aggregate require a more structural geotextile, typically **woven**. For example, a new metal building utilizing the proper fabric and subgrade preparation techniques—in conjunction with UBS panels—essentially creates a solid floor system.

**Outdoor** applications have the added dimension of rain, and what to do with it. There are typically two ways to address water: block it with a liner **(impermeable)**, or let it flow through the entire system to the base **(permeable)**. Consultation with a geotechnical engineer is recommended to determine which solution is appropriate for each project.

**Expansive soils** typically do not serve well as a solid foundation unless treated with stabilizers. Keeping water out of those bases with the use of an impermeable liner, therefore, increases their effectiveness. This can be supplemented with a non-woven fabric for additional support if necessary. One caveat with **impermeable** liners, however, is the water runoff is concentrated and needs to be addressed, typically with a system of perimeter or inline drains.

**Compacted aggregate** bases for **athletic fields** and **high-use commercial areas** typically require a heavy-duty **woven** fabric. **Landscape** and/or areas utilizing **existing compacted soils** also require a **woven** geo-textile, but can utilize a lesser-weight option.

There are a few special areas to consider, including pet areas, rooftops and athletic courts. **Pet areas**, whether indoors or out, require a high-flow woven polypropylene fabric. For **rooftops**, we recommend the 20mil impermeable liner: not for waterproofing, but to provide an additional layer of protection against any wearing the roof membrane may incur when in contact with the panel. **Athletic courts** require an additional non-woven needle punched geotextile between our panels and the court tiles, which adds friction and prevents the court tiles from slipping underfoot.

We always refer to the use of a geosynthetic fabric and the UltraBaseSystems panels as replacing "Mass with Science." When paired together over a properly prepared sub base the benefits of this two-part system is an intelligent and effective way to deal with excessive stone usage.

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# UltraBaseSystems® Geosynthetic Fabric

Our goal is to provide you with recommendations for geosynthetic fabrics to ensure a successful installation. The chart below outlines the geosynthetic stabilization fabric options by type of installation. By coupling the proper geosynthetic fabric and the UltraBaseSystems panels with current soils and site conditions, obtaining proper soil stabilization properties and drainage requirements is easier than ever.

The mission is simple--**replace Mass with Science**—eliminate bulk material and replace it with technologically advanced systems.

## Suggested Geosynthetic Stabiliation Fabrics

| | Permeable | | | | | | Impermeable | | | Accoustial | Permeable Combined System with 180N | | | Impermeable Combined System with 12mm | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installation Type | SF65 | HP270 | FW402 | HP570 | RS280i | RS380i | 20mm | 24mm | 30mm | 180N | HP270 | HP570 | RS380i | HP270 | HP570 | RS280i |
| Athletic Courts | | | | | | | | | | ● | ● | ●● | ●●● | | | |
| Athletic Fields | ● | ● | | ●● | ●● | ●●● | ● | ●● | ●●● | | | | | ● | ●● | ●●● |
| Athletic Training Facilities | ● | ● | | ●● | ●● | ●●● | ● | ●● | ●●● | | | | | ● | ●● | ●●● |
| General Purpose | ● | ● | | ●● | ●● | ●●● | ● | ●● | ●●● | | | | | ● | ●● | ●●● |
| Golf | ● | ● | | ●● | ●● | | ● | ●● | | ● | | | | | | |
| Landscaping | | ● | | ●● | ●●● | | | | | | | | | | | |
| Playgrounds | | ● | | ●● | ●●● | | ● | ●● | ●●● | | | | | | | |
| Pavers & Bricks | | | | | | | ● | ●● | ●●● | ● | ● | ●● | ●●● | ● | ●● | ●●● |
| Pet Areas | | | ● | | ●● | ●●● | | | | | | | | | | |
| Poured-in-Place | ● | ● | | ●● | ●● | ●●● | ● | ●● | ●●● | | ● | ●● | ●●● | ● | ●● | ●●● |
| Rooftop | | ● | | ●● | ●●● | | | | | | | | | | | |

●Good ●● Better ●●●Best

| Roll Descriptions | | | |
|---|---|---|---|
| Name | Description | Flow Rate (gal/min/ft2) | Tensile Strength (lbs/ft) |
| SF65 Spun Bond-Roll | Permeable Non-woven Polypropylene 15' X 300' 4500SF | 20 | 250 |
| HP270-Roll | Permeable Woven Polypropylene 15' X 300" 4500SF | 50 | 2640 |
| HP570-Roll | Permeable Woven Polypropylene 15' X 300' 4500SF | 30 | 4800 |
| RS280i-Roll | Permable Woven Polypropylene 15' X 300' 4500SF | 85 | 3600 |
| RS380i-Roll | Permeable Woven Polypropylene 15' X 300' 4500SF | 85 | 4500 |
| FW402-Roll | Permeable Woven Polypropylene 12.5' x 300' 3750SF | 145 | 365 |
| 180N-Roll | Permeable Non-woven Needlepunched--15' x 300' 4500 SF | 95 | 205 |
| LSG-3 Cell Tek | Load Support Grid | NA | NA |

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