



# PROPEX Pyramattress

**PROPEX® Pyramattress®** Engineered Mattress System is an erosion control solution designed to resist potential scour and erosion caused by the constant flow of water or high hydraulic stresses. The expected design life of Pyramattress is up to 75 years because it does not corrode and it has superior UV resistance, strength, and durability in the most demanding environments. Pyramattress consists of four components: **PROPEX Pyramat® 75** High Performance Turf Reinforcement Mat (HPTRM), Fiber-composite internal bracing, UV Stabilized Synthetic Stakes and **MIRAFI®** nonwoven geotextile. The system utilizes the durability and erosion resistance of our Pyramat 75 HPTRM and constructs a geosynthetic/soil/rock composite for protection of channels, slopes, and spillways. Pyramattress components are corrosion resistant and promote vegetation, allowing for an increased design life that is environmentally friendly.

The Pyramat 75 HPTRM component is engineered to mitigate fire risk and increase the resilience of wildfire prone areas using non-halogen fire retardant technology. Pyramat 75 is available in green or tan. Pyramat 75 conforms to the property values listed below<sup>1</sup> and is manufactured at a Solmax facility with ISO 9001:2015 and ISO 14001:2015 certifications. Solmax performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

The internal braces are designed to integrate with Pyramat 75 HPTRM and provide internal structure during construction to facilitate placing and filling of Pyramattress. The bracing members are designed to interlace through Pyramat 75 HPTRM resulting in superior material connection and system performance throughout the project’s design life.

### PROPEX Pyramat 75 HPTRM Properties

Properties	Test Method	English	Metric
<b>Origin of material</b>			
% U.S. Manufactured		100%	100%
<b>Environmental Impact</b>			
Carbon Footprint	GHG Protocol ISO 14064:2006 PAS2050:2011	2.7 kg CO <sub>2</sub> e/m <sup>2</sup>	
<b>Physical Properties</b>			
Mass/Unit Area <sup>4</sup>	ASTM D6566	14.0 oz/sy	475 g/m <sup>2</sup>
Thickness <sup>2</sup>	ASTM D6526	0.40 in	10.2 mm
Light Penetration (% Passing) <sup>3</sup>	ASTM D6567	10%	
Color	Visual	Green or Tan	
<b>Mechanical Properties</b>			
Tensile Strength <sup>2</sup>	ASTM D6818	4,000 x 3,000 lb/ft	58.4 x 43.8 kN/m
Elongation <sup>2</sup>	ASTM D6818	40 x 35%	
Resiliency <sup>2</sup>	ASTM D6524	80%	
Flexibility <sup>4</sup>	ASTM D6575	0.534 in-lb	616,154 mg-cm
<b>Endurance</b>			
UV Resistance % Retained at 3,000 hrs <sup>4</sup>	ASTM D4355	90%	
UV Resistance % Retained at 6,000 hrs <sup>4</sup>	ASTM D4355	90%	
<b>Fire Resistance</b>			
Burn Rate	FMVSS 302	< 1 ft/min.	
Time to Extinguish	FMVSS 302	< 1 sec.	
<b>Roll Sizes</b>		8.5 ft x 120 ft	2.6 m x 36.6 m
		15.0 ft x 120 ft	4.6 m x 36.6 m

**NOTES:**

- <sup>(1)</sup> The property values listed above are effective 05/01/2023 and are subject to change without notice. Values represent testing at time of manufacture.
- <sup>(2)</sup> Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
- <sup>(3)</sup> Maximum Average Roll Value (MaxARV), calculated as the typical plus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any sample taken during quality assurance testing will meet to the value reported.
- <sup>(4)</sup> Typical average values shown.

Solmax is not a design or engineering professional and has not performed any such design services to determine if Solmax’s goods comply with any project plans or specifications, or with the application or use of Solmax’s goods to any particular system, project, purpose, installation, or specification.



## PROPEX Pyramat 75 HPTRM Properties

Properties	Test Method	English	Metric
<b>Performance</b>			
Velocity (Vegetated) <sup>4,5</sup>	Large Scale	25 ft/s	7.6 m/s
Shear Stress (Vegetated) <sup>4,5</sup>	Large Scale	16 lb/ft <sup>2</sup>	766 Pa
Manning's n (Unvegetated) <sup>4,6</sup>	Calculated	0.028	
USACE / CSU Wave Overtopping	Large Scale	USACE Approved	
Seedling Emergence <sup>4</sup>	ASTM D7322	619%	

### NOTES:

<sup>(4)</sup> Typical average values shown.

<sup>(5)</sup> Maximum permissible velocity and shear stress has been obtained through vegetated testing programs featuring specific soil types, vegetation classes, flow conditions, and failure criteria. These conditions may not be relevant to every project nor are they replicated by other manufacturers. Please contact Solmax for further information.

<sup>(6)</sup> Calculated as typical values from large-scale flexible channel lining test programs with a flow depth of 6 to 12 inches.