

# Syntec Uniaxial Geogrid UX18-S

Syntec UX18-S is an integrally formed uniaxial geogrid made from the highest quality HDPE resins that resist chemical degradation and elongation (creep) when subjected to high loads for long periods of time. Syntec UX-S Series Geogrids are used for high-strength soil reinforcement in steepened slope applications and some MSE walls. Syntec UX-S Series Geogrids are designed to install quickly in stand-alone applications, as well as in conjunction with various soil stabilization systems.

## Product Specifications

Index Property	Units	Values <sup>(1)</sup>
Tensile Strength at 5% Strain <sup>(2)</sup>	kN/m (lb/ft)	95 (6,510)
Ultimate Tensile Strength <sup>(2)</sup>	kN/m (lb/ft)	210 (14,390)
Junction Strength <sup>(3)</sup>	kN/m (lb/ft)	180 (12,340)
Flexural Stiffness <sup>(4)</sup>	mg-cm	9,500,000
Durability		
Resistance to Long-Term Degradation <sup>(5)</sup>	%	100
Resistance to UV Degradation <sup>(6)</sup>	%	95
Load Capacity		
Maximum Allowable (Design) Strength for 120-year Design Life <sup>(7)</sup>	kN/m (lb/ft)	74.1 (5,080)
Recommended Allowable Strength Reduction Factors <sup>(7)</sup>		
Minimum Reduction Factor for Installation Damage (RF <sub>ID</sub> ) <sup>(8)</sup>		1.05
Reduction Factor for Creep for 120-year Design Life (RF <sub>CR</sub> ) <sup>(9)</sup>		2.70
Minimum Reduction Factor for Durability (RF <sub>D</sub> )		1.0
Roll Dimensions and Delivery		
The uniaxial geogrid shall be delivered to the job site in roll form with each roll individually identified and nominally measuring 1.33 m (4.36 ft) wide x 61.0 m (200 ft) long. A typical truckload quantity is 144 rolls.		

NOTES:

- <sup>(1)</sup> Unless indicated otherwise, values shown are minimum average roll values determined in accordance with ASTM D4759-02. Brief descriptions of test procedures are given in the following notes.
- <sup>(2)</sup> True resistance to elongation when initially subjected to a load measured via ASTM D6637-01 without deforming test materials under load before measuring such resistance or employing "secant" or "offset" tangent methods of measurement so as to overstate tensile properties.
- <sup>(3)</sup> Load transfer capability determined in accordance with GRI-GG2-05.
- <sup>(4)</sup> Resistance to bending force determined in accordance with ASTM D5732-01, using specimen dimensions of 864 mm in length by one aperture in width.
- <sup>(5)</sup> Resistance to loss of load capacity or structural integrity when subjected to chemically aggressive environments in accordance with EPA 9090 testing.
- <sup>(6)</sup> Resistance to loss of load capacity or structural integrity when subjected to 500 hours of ultraviolet light and aggressive weathering in accordance with ASTM D4355-05.
- <sup>(7)</sup> Reduction factors are used to calculate the geogrid strength available for resisting force in long-term load bearing applications. Allowable strength (Tallow) is determined by reducing the ultimate tensile strength (Tult) by reduction factors for installation damage (RFID), creep (RFCR) and chemical/biological durability (RFD=RFCD x RFB) per GRI-GG4-05 [Tallow = Tult/(RFID x RFCR x RFD)]. Recommended minimum reduction factors are based on product-specific testing. Project specifications, standard public agency specifications and/or design code requirements may require higher reduction factors. Design of the structure in which the geogrid is used, including the selection of appropriate reduction factors and design life, is the responsibility of the outside licensed professional engineer providing the sealed drawings for the project.
- <sup>(8)</sup> Minimum value is based on Installation Damage Testing in sand, silt, and clay soils. Coarser soils require increased RFID values.
- <sup>(9)</sup> Reduction Factor for Creep determined for 120-year design life and in-soil temperature of 20°C using standard extrapolation techniques to creep rupture data obtained following the test procedure in ASTM D5262-04. Actual design life of the completed structure may differ.



**AT THE CORE:**  
A uniaxial geogrid engineered for high strength soil reinforcement and to carry high tensile loads applied in one direction.

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.



**[ DURABILITY RUNS DEEP ]** For more information on this product and others, please visit us at [GSEworld.com](http://GSEworld.com), call 800.435.2008 or contact your local sales office.