

Royal Grid



KPNE Products Ltd.

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ROYAL GRID PRODUCT SPECIFICATION

UNI-AXIAL PET GEOGRID

RG 45/30

Royal Grid (PET) geogrid is manufactured using high tenacity polyester yarns thru a knitting process and coated with PVC. The unique knitting process interconnect all the yarns within the MD rib, and mechanically bind MD and XD rib together at junctions to form a stable grid structure. The PVC coating further stabilize the grid structure, and shield polyester yarns from damage in harsh construction environment. Royal Grid geogrids are ideal soil reinforcement products for reinforcing retaining walls, slopes, and embankments.

Product Properties	Test Method	Units	Values
Geometric⁽¹⁾			
Aperture Size	Caliber	mm	20 x 20
Percent of Open Area	CW-02215	%	60
Tensile Properties⁽²⁾			
Ultimate Tensile Strength in MD (T_{ult})	ASTM D6637	kN/m	50.0
Ultimate Tensile Strength in CMD	ASTM D6637	kN/m	29.2
Strength Reduction Factors⁽²⁾			
Reduction Factor for Creep for 114 years Design Life (RF_{CR})	ASTM D 5262		1.54
Creep Limited Strength (T_{ULT}/RF_{CR})	ASTM D 6992	kN/m	32.5
Reduction Factor for Durability for $5 < pH < 8$ (RF_D)			1.1
Carboxyl End Group Molecular Weight	ASTM D 7409 ASTM D 4603	mMol/Kg g/mol	< 30 > 25,000
Reduction Factor for Installation Damage (RF_{ID})	ASTM D 5818		
Sand, Silty Sand, and clay	ASTM D 6637		1.05
Sandy Gravel (19 mm minus)			1.10
Coarse Gravel			1.25
Longterm Design Strength for 114 Years Design Life (LTDS)			
Sand, Silt, and Clay	$LTDS = \frac{T_{ULT}}{RF_{CR} \times RF_D \times RF_{ID}}$	kN/m	28.1
Sandy Gravel (19 mm minus)			26.8
Gravel			23.6
Soil-Geogrid Interaction Properties			
Coefficient of Soil/Geogrid Interaction	ASTM D 6706		
Sand, Silty Sand, and clay			0.85
Sandy Gravel (19 mm minus)			0.85
Coarse Gravel			0.85
Coefficient of Soil/Geogrid Direct Sliding	ASTM D 5321		
Sand, Silty Sand, and clay			0.85
Sandy Gravel (19 mm minus)			0.85
Coarse Gravel			0.85
Typical Roll Dimensions			
Roll Width ⁽³⁾		m (ft)	2.5 (8.2)
Roll Length ⁽³⁾		m (ft)	50 (164.04)

NOTES:

- Nominal dimensions.
- Unless indicated otherwise, values shown are minimum average roll values (MARV) in accordance with ASTM D4759-02.
- Typical standard roll dimensions are shown, the product may be fabricated to custom lengths to suit the contractor's requirements.

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