TECHNICAL DATA SHEET

KUG Series

Integrally formed uniaxial HDPE geogrid for reinforced-soil walls, steepened earth structures, bridge approaches and civil infrastructure.

60-200 kN/m	6 grades	114 years	1 or 2 m
published ultimate range	KUG product range	published creep basis	standard roll widths

PRODUCT OVERVIEW

KUG geogrids are manufactured by extruding, punching, heating and longitudinally stretching HDPE sheet to form continuous ribs and integral junctions. The product provides tensile reinforcement in the primary machine direction and has an established supply history in Australian civil applications.

Typical applications include modular-block and precast-panel reinforced-soil walls, bridge approaches, steepened slopes, embankments and other structures where land take, settlement tolerance and material efficiency are important.

PUBLISHED PRODUCT FEATURES

- High-density polyethylene construction
- Integral ribs and junctions
- Resistance to biological degradation
- Chemical resistance
- Carbon-black stabilisation for UV weathering resistance
- Resistance to environmental stress cracking
- Roll widths suited to efficient reinforcement layouts

PUBLISHED INDEX PROPERTIES - MACHINE DIRECTION

Property	Test method	Unit	KUG-60	KUG-80	KUG-120	KUG-160	KUG-180	KUG-200
Tensile strength at 2% strain	ASTM D6637	kN/m	16	23	35	47	52	58
Tensile strength at 5% strain	ASTM D6637	kN/m	31	44	65	93	104	116
Ultimate tensile strength	ASTM D6637	kN/m	60	80	120	160	180	200
Strain at ultimate strength	ASTM D6637	%	11.5	11.5	11.5	11.5	11.5	11.5
Junction efficiency	GRI GG2-87	%	93	93	93	93	90	90
Flexural rigidity	ASTM D1388	mg-cm	530,000	1,100,000	6,000,000	8,500,000	9,400,000	9,600,000

Values are manufacturer-published index properties. Tensile values apply in the primary machine direction.

DURABILITY AND REDUCTION FACTORS

Published product data for long-term selection

The KUG range is supported by published durability results, creep-rupture testing and installation-damage testing. Reduction factors used in design must represent the selected grade, project fill, installation method, environment, design temperature and required design life.

Property	Test method	Unit	KUG-60	KUG-80	KUG-120	KUG-160	KUG-180	KUG-200
Polymer	-	-	HDPE	HDPE	HDPE	HDPE	HDPE	HDPE
Minimum carbon black	ASTM D4218	%	2	2	2	2	2	2
UV resistance	ASTM D4355	%	98	98	98	98	98	98
Oxidation resistance	EN ISO 13438	%	100	100	100	100	100	100
Brittleness	WashDOT T926	-	Pass	Pass	Pass	Pass	Pass	Pass
Published installation damage factor RF_{ID}	ASTM D5818	-	1.00	1.00	1.02	1.00	1.00	1.00
Published creep factor RF_{CR} - 114-year life	ASTM D5262	-	2.23	2.23	2.23	2.23	2.23	2.23

ROLL DIMENSIONS

Property	Unit	KUG-60	KUG-80	KUG-120	KUG-160	KUG-180	KUG-200
Standard roll width	m	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2
Standard roll length	m	100	50	50	50	50	50

DESIGN USE

Reduced tensile strength: derive from published ultimate strength using the reduction factors required by the adopted design method. The published RFCR is 2.23 for a 114-year basis at the stated reference conditions.

Installation damage: published testing used coarse gravel, sandy gravel and sand for selected grades. The project RFID should represent the actual fill, particle angularity, lift thickness, compaction equipment and construction method.

System design: wall design includes reinforcement rupture, pull-out, facing connection, external, compound and global stability, serviceability, drainage and seismic actions where relevant.

INSTALLATION ESSENTIALS

- Install the strong machine direction perpendicular to the wall face.
- Place the grid flat, taut and at the designed elevation.
- Use the approved block or panel connection detail.
- Do not splice the primary strength direction unless specifically designed.
- Do not traffic exposed grid; maintain specified cover.
- Control plant and compaction close to the face.
- Protect drainage paths and record each layer before burial.

KONTAIN TECHNICAL SUPPORT	Grade selection | Specification review | Quantity optimisation | Product documentation | Installation guidance | Australia-wide project support
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Technical note: Published values apply to the KUG product grades shown. Product selection and reinforcement layout must follow the project design, governing specification and current supply documentation. Kontain reserves the right to update product information as manufacturing data and standards evolve.