

# Combigrid® Geocomposite

## Multifunctional Geosynthetic

Soil reinforcement/stabilisation, separation, filtration and drainage combined in one truly unique geosynthetic



### Product Information

Combigrid® Geocomposite is a stiff, high strength, high modulus at low elongations, Polypropylene (PP) or Polyester (PET) biaxial geogrid (Secugrid®) consisting of pre-tensioned, surface textured, laid and welded monolithic flat bars with a continuous molecular structure that is masterfully combined with an integral calendered filter Polypropylene (PP) nonwoven geotextile (Secutex®) integrated between the geogrid bars. This combination delivers reinforcement/stabilisation, separation, filtration and drainage all in one composite product for utilisation on problematic soils. The extraordinary high extensional stiffness of Combigrid® effectively and efficiently reduces deformations in the subgrade which in-turn extends the service life of built modern infrastructure on top.

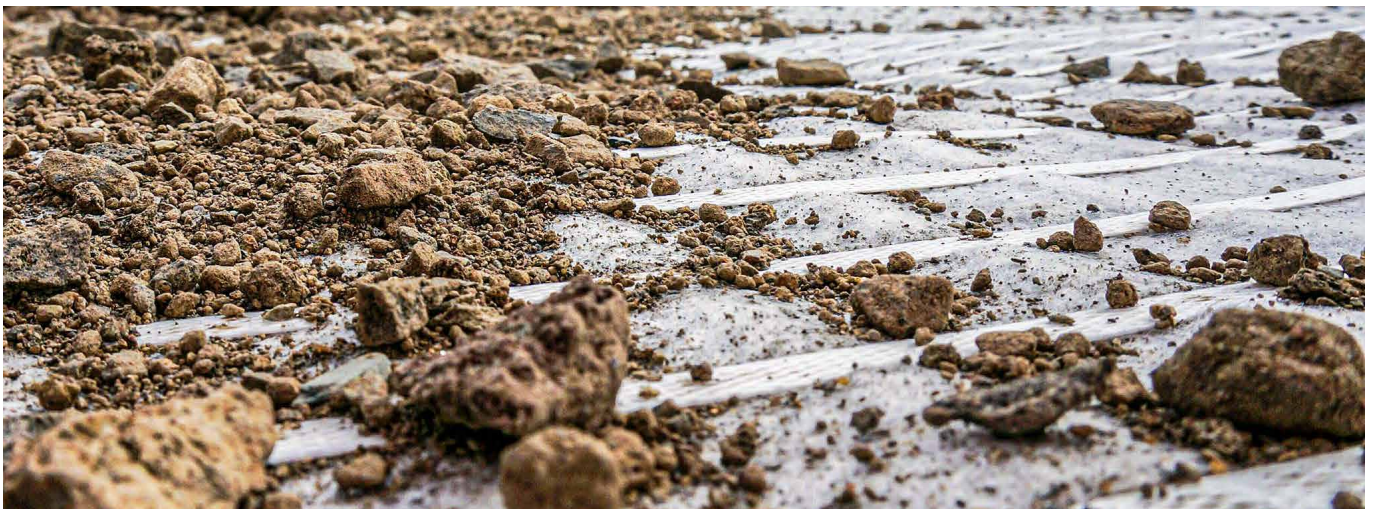
### Applications

- Access roads on soft subgrades
- Paved roads on soft subgrades
- Railways on soft subgrades
- Rail ballast stabilisation
- Airport runway/taxiway pavements and graded portions
- Working platforms and hardstands
- Base and sub-base course stabilisation and reinforcement
- Soil/subgrade bearing capacity strength improvement
- Managing expansive/reactive black soil movements in controlling environmental cracks
- Stiffening and minimising lateral movement within aggregate base course
- Controlling differential settlements
- Proof rolling
- Extension of maintenance cycles/design life
- Basal reinforcement for embankments
- Load transfer platforms over piles (LTP)
- Bridging of mining voids and sinkholes
- Reinforced foundations
- Pipe trenches
- Lagoons/Tailing ponds

# Combigrig® Geocomposite

## Benefits

- Reinforcement/stabilisation, separation, filtration and drainage all in just one composite product. Reducing aggregate thickness and makes installation easier and faster in a single operation to provide significant cost and time savings
- Increases lateral confinement of unbound & modified gravel material layers
- Improves soil/subgrade bearing capacity
- Helps control expansive soil/subgrade movements and associated longitudinal cracks in sealed road pavements
- Immediate interlock with fill material (no construction-related strain)
- Excellent stress/strain behaviour (high tensile stiffness)
- High radial stiffness and high cyclic tensile stiffness
- Robust against installation damage, and chemical and biological attack
- Nonwoven geotextile firmly bonded between uniformly
- Extruded PP or PET bars, eliminating the risk of delamination during installation
- Robust needle-punched staple fiber nonwoven geotextile
- Separates aggregate from fine soil particles
- Low creep characteristics for PET geogrids
- High angle of friction because of the structured geogrid surface
- 4.75 m wide x 100 m long rolls to reduce wastage and increase speed of construction.
- Easy installation with no recoil





# Combigrid® Geocomposite

## Product Data Sheet

## Product Grade

Typical Properties	Test Method	Unit	30/30 Q1	40/40 Q1	60/60 Q1
<b>Reinforcement Properties</b>					
Raw material			polypropylene (PP), white		
Max. Tensile strength, md / cmd*	ASTM D4595 or EN ISO 10319 / ASTM D6637	kN / m	≥ 30 / ≥ 30	≥ 40 / ≥ 40	≥ 60 / ≥ 60
Elongation at nominal strength, md / cmd*	ASTM D4595 or EN ISO 10319 / ASTM D6637	%	≤ 7 / ≤ 7	≤ 7 / ≤ 7	≤ 7 / ≤ 7
Tensile strength at 1% elongation, md / cmd*	ASTM D4595 or EN ISO 10319 / ASTM D6637	kN / m	6 / 6	8 / 8	12 / 12
Tensile strength at 2% elongation, md / cmd*	ASTM D4595 or EN ISO 10319 / ASTM D6637	kN / m	12 / 12	16 / 16	22 / 22
Tensile strength at 5% elongation, md / cmd*	ASTM D4595 or EN ISO 10319 / ASTM D6637	kN / m	24 / 24	32 / 32	48 / 48
Radial stiffness @0.5% strain**	ASTM D4595 or EN ISO 10319 / ASTM D6637	kN / m	≥ 592	≥ 802	≥ 900
Aperture stability	Method of Kinney	N-m/degree	1.14	1.30	2.50
Junction strength at 2% strain	ASTM D7737 / D7737M-15	kN/m	≥ 9.5	≥ 12.5	≥ 12.5
Installation damage resistance	ASTM D5818 or ISO 10722	%	≥ 98	≥ 98	≥ 98
Coefficient of direct shear	ASTM D5321 / D5321M	%	> 75	> 75	> 75
pH resistance	EN 14030	-	2 to 11	2 to 11	2 to 11
Aperture size, md x cmd*		mm x mm	approx. 32 x 32	approx. 31 x 31	approx. 31 x 31

<b>Separation / Filtration / Drainage Properties</b>					
Geotextile Strength Class	QId TMR MRTS27		C	D	D
Raw material			polypropylene (PP), white		
Grab strength	AS 2001.2.3.2	N	≥ 1500	≥ 2000	≥ 2000
Trapezoidal tear strength	AS 3706.3	N	≥ 550	≥ 700	≥ 700
G-rating	AS 3706.4 and AS 3706.5	-	≥ 3100	≥ 4500	≥ 4500
Characteristic opening size	AS 3706.7 or EN ISO 12956	µm	≤ 90	≤ 90	≤ 90
Permeability	AS 3706.9 or EN ISO 11058	l/m2/s	≥ 90	≥ 90	≥ 90
Permittivity	AS 3706.9 or EN ISO 11058	s-1	≥ 0.9	≥ 0.9	≥ 0.9
Roll dimensions, width x length		m x m	4.75 X 100	4.75 X 100	4.75 X 100

\* md = machine direction, cmd = cross machine direction; \*\* this test is performed by external laboratories and is not part of our regular quality control.

The listed technical values are guiding values, achieved in our laboratories and/or independent testing institutes. Our products are subject to changes without prior notice.

### Combigrid® 30/30 Q1 Geocomposite

Composite of a laid geogrid made of stretched, monolithic polypropylene (PP) flat bars with welded junctions and a mechanically bonded and calendered filter geotextile welded within the geogrid structure, used for stabilisation and reinforcement of soils in many fields of infrastructure, environmental protection and engineering applications.

### Combigrid® 40/40 Q1 Geocomposite

Composite of a laid geogrid made of stretched, monolithic polypropylene (PP) flat bars with welded junctions and a mechanically bonded and calendered filter geotextile welded within the geogrid structure, used for stabilisation and

reinforcement of soils in many fields of infrastructure, environmental protection and engineering applications.

### Combigrid® 60/60 Q1 Geocomposite

Composite of a laid geogrid made of stretched, monolithic polypropylene (PP) flat bars with welded junctions and a mechanically bonded and calendered filter geotextile welded within the geogrid structure, used for stabilisation and reinforcement of soils in many fields of infrastructure, environmental protection and engineering applications.

# About Us

## Leaders in Geosynthetics

Global Synthetics is a 100% Australian-owned company, proud to offer a complete range of high-quality geosynthetic products backed by over 200 years of combined staff experience in the industry.

We have supplied products to some of the largest recent infrastructure works in Australia. Global Synthetics provides major benefits to any geotechnical engineering project with the right products and our technical expertise.

Global Synthetics products are used in the following applications:

- Pavement Stabilisation
- Ground Improvement
- Soil Reinforcement and Retaining Structures
- Water Management
- Drainage Systems & Hydraulic Works
- Landfills
- Coastal Erosion Structures

## Get in Touch

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