

GEOCOMPOSITE GEOGRIDS TGC

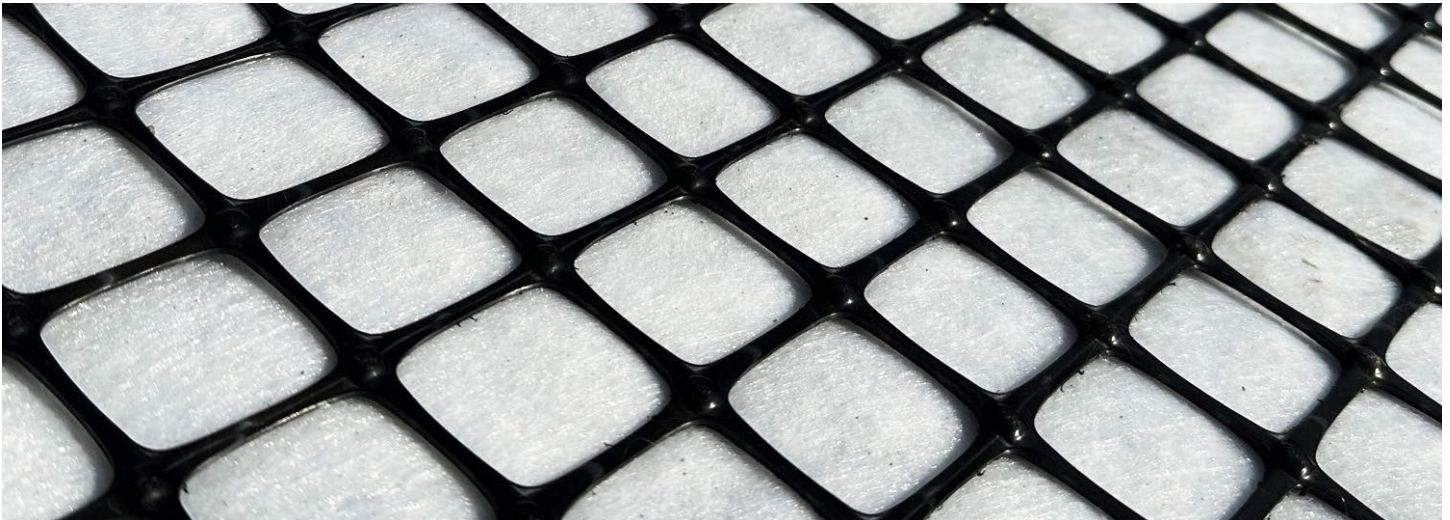


SUBGRADE IMPROVEMENT

GEOCOMPOSITE GEOGRIDS

Highlights

- Reinforcement, filtration, separation and drainage in one product
- Typical approach is placing an initial layer of TGC on top of a prepared subgrade
- Focus is on reducing the thickness of the required stone base



TGC3030 (30 kN/m)

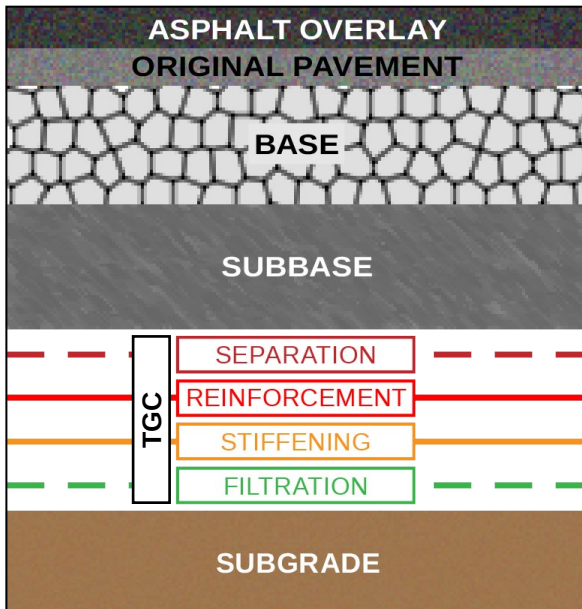
TGC4040 (40 kN/m)

Product Guideline

- LIGHT/MEDIUM DUTY/ UNPAVED applications (roads, parking lots, temporary or permanent earthworks)
- HEAVY DUTY / PAVED (roads, parking lots, laydown areas, weak subgrade conditions or excessive rutting)
- TERRAFIX DESIGN

Product Selection Guideline

- LIGHT/MEDIUM DUTY / UNPAVED STRUCTURES: TGC3030
 - Provides reduction (\$) on low-cost road build – rebuild
 - Increase the filtration, drainage and separation effect
 - Boost the load distribution, aggregate performance, and stiffening & confinement
 - It is ideal for soft spot treatment on relatively firm or stiff subgrades
 - Heavily used on temporary applications, farms, trails, recreational facilities, sidewalks, and driveways
- HEAVY DUTY / PAVED ROADWAYS: TGC4040
 - Provides the greatest strength and cost-effective option for road build and rebuild
 - Used to improve subgrade critical/very soft conditions within unpaved and paved applications
 - Maximizes the load distribution, aggregate performance, and stiffening & confinement effect; meanwhile, enhance the filtration, separation, and drainage.
 - Heavy duty and unpaved roadways (heavy traffic and truck volume, heavy loads, and critical applications such as: working platforms and crane pad designs)
 - Applications: wetlands, lot of potholes, spongy subgrades, different soils (different colors: black, grey, green, brown), water presence or contaminated soils.



Subgrade Stabilization Properties

- Ultimate tensile strength
- Reduction factors (installation damage, creep, degradation)
- Unconfined stiffness
- Stiffness of the soil-geosynthetic composite
- Permittivity / AOS
- Survivability-related properties

Benefits

Decreased time-dependent rutting by:

- (a) Minimizing vertical and shear stresses in the subgrade under the wheel path
- (b) Redistributing shear and vertical stresses beyond the wheel path



Installation Guidelines

- Place the product directly on the prepared site.
- The geocomposites geogrid (TGC) should be rolled out on a flat surface with no wrinkles or folds.
- Do not drive directly over the geosynthetic.
- Overlap requirements in accordance with the subgrade conditions.
 - CBR 0 - 1%: 3 ft (1m)
 - CBR 1 - 3%: 2 – 3 ft (45-60 cm)
 - CBR 3 – 8%: 1 ft (30 cm)
- Minimum 6 – 12 in (150 - 300 mm) stone thickness on top. On very weak subgrades min. 12 in (300 mm) stone thickness on top.
- Construction equipment should drive no more than 10 mph (16 km/h) on the designated area without causing damage to the TGC.

GEOCOMPOSITE GEOGRIDS

Terrafix Composite Geogrids are geocomposites especially designed for soil stabilization and reinforcement applications. Terrafix GC 3030/4040 is a Polypropylene Extruded Biaxial Geogrid and non-woven polyester geotextile. Especially designed for soil stabilization and reinforcement applications. Terrafix GC3030/4040 is inert to biological degradation and resists naturally encountered chemicals, alkali's, and acids. Polypropylene is stable within a pH range of 2 to 13.

GEOCOMPOSITE GEOGRIDS		TGC3030		TGC4040	
Property	ASTM Test	Machine Direction Strength (MD)	Cross Machine Direction Strength (XMD)	Machine Direction Strength (MD)	Cross Machine Direction Strength (XMD)
Geogrid Mechanical Properties					
Ultimate Tensile Strength ⁽²⁾	D6637	30.0 kN/m	30.kN/m	40.0 kN/m	40.0 kN/m
Junction Strength ⁽²⁾	GRI-GG2	37.2 kN/m	37.2 kN/m	37.2 kN/m	37.2 kN/m
Junction Efficiency	%	95%	95%	95%	95%
Tensile Strength @ 2% Strain ⁽²⁾	D6637	10.5 kN/m	10.5 kN/m	14.0 kN/m	14.0 kN/m
Tensile Strength @ 5% Strain ⁽²⁾	D6637	21.0 kN/m	21.0 kN/m	28.0 kN/m	28.0 kN/m
Flexural Stiffness/Rigidity	D7748	2,000,000 mg-cm	2,000,000 mg-cm	4,800,000 mg-cm	4,800,000 mg-cm
Radial Stiffness @ 0.5% Strain	D6637	41,000 lb/ft	600 kN/m	43,000 lb/ft	773 kN/m
Aperture Stability ⁽¹⁾	COE	0.75 M-n/deg. @ 20kg-cm torque		0.98 M-n/deg. @20kg-cm torque	
Geotextile Physical Properties					
Mass per unit area	D5261	200 gm/cm²		200 gm/cm²	
Ultimate Tensile Strength	D4595	14 kN/m			
Tensile Elongation	D4595	50%		50%	
CBR Puncture Strength	D6241	2300N		2300N	
Apparent Opening Size	D4751	0.11mm		0.11mm	
Roll Properties					
Aperture Size	--	34mm (±1mm)	34mm (±1mm)	34mm (±1mm)	34mm (±1mm)
Average Rib Thickness	D1777	2.5mm	1.5mm	3.4mm	2.1mm
Roll Size	--	50m	3.90m	50m	3.95m
Typical Geogrid Properties					
Minimum Carbon Black Content	D4218	2%			
Resistance to UV Degradation	D4355	100%			

Notes:

(1) In-plane torsional rigidity measured by applying a moment to the central junction of a 225mm x 225mm specimen restrained at its perimeter in accordance with U.S. Army Corps of Engineers Methodology for measurement of Torsional Rigidity (Kinny, T.C. Aperture Stability Modulus ref 2, 2.1.2000)

(2) Values shown are MARV as per GRI