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MASTAGRID™ *Composite*

Composite Geogrid

GGCB3030

WORLD-CLASS GEOSYNTHETICS. UNBEATABLE VALUE. EXCEPTIONAL SERVICE.

DESCRIPTION

mastaGRID™ Composite is an engineered geogrid designed for soil stabilisation, separation and reinforcement applications. mastaGRID™ Composite is manufactured from Polypropylene through the process of extruding, longitudinal and transverse heat stretching. mastaTEX™ is then heat bonded to the grid to form a sound composite structure. It is designed to prevent reflection cracking, water damage and improve load capacity in road construction and renovation. It has the property of high temperature resistance and anti-fatigue cracking and therefore extending the life and time of asphalt pavements.

APPLICATION

+ Base Reinforcement
+ Subgrade Reinforcement
+ Embankment Stabilisation
+ Subgrade Separation

SPECIFICATIONS

mastaGRID™ Composite				
INDEX PROPERTIES	**TEST METHOD**	**UNITS**	**GGCB3030**	
			MD VALUES	**TD VALUES**
Polymer		-	PP	-
Minimum Carbon Black	ASTM D 4218	%	2	-
Tensile Strength @ 2% strain	ASTM D 6637	kN/m (lb/ft)	10.5 (720)	10.5 (720)
Tensile Strength @ 5% strain	ASTM D 6637	kN/m (lb/ft)	21 (1,440)	21 (1,440)
Ultimate Tensile Strength	ASTM D 6637	kN/m (lb/ft)	30 (2,050)	30 (2,050)
Strain @ Ultimate Strength	ASTM D 6637	%	13	13
Junction Efficiency	GRI GG2	%	93	93
Flexural Rigidity	ASTM D 7748	mg-cm	2,000,000	-
Aperture Stability	ASTM D 7864	m-N/deg	0.75	-
Damage Factor			1.02	-
DIMENSIONS				
Aperture Dimensions	-	mm (in)	34 (1.3)	34 (1.3)
Minimum Rib Thickness	ASTM D1777	mm (in)	2.5 (0.10)	2.5 (0.10)
Roll Width	-	m (ft)	3.9 (12.9)	-
Roll Length	-	m (ft)	50 (164)	-
GEOTEXTILE PROPERTIES				
Polymer			PET	-
EOS	ASTM D 4751	mm	0.11	-
CBR Puncture Strength	ASTM D 6241	N	1800	-
Mass per unit area	ASTM D 5261	g/m2	150	-

PAVEMENT GEOSYNTHETIC PROPERTY REQUIREMENT

MASTAGrid™ PP				
SUBGRADE REINFORCEMENT TYPE			**TYPE 1**	**TYPE 2**
Property	Test Method*	Unit	Subgrade Application (CBR > 3%)	Subgrade Application (CBR ≤ 3%)
Application	-	-	Reinforced subgrade with CBR > 3%	Reinforced subgrade with CBR ≤ 3%
Geogrid aperture size	-	mm	Min ≥ D50 ≈ 9.5 mm Max ≤ 2 x	Min ≥ D50 ≈ 9.5 mm Max ≤ 2 x D85 ≈ 38 mm
Geogrid junction strength at 2% strain	ASTM D7737-11	kN/m	≥ 9.5	≥ 12.5
Tensile strength (Ts) at 2% strain in any direction of the MD and CMD Note 1	ASTM D6637-11 / ASTM D4595 or EN ISO 10319	kN/m	≥ 10.5	≥ 14
Resistance to installation damage (Rd) Note 1 & 2	ASTM D5818-11	%	> 85	≥ 85
Resistance to UV (Ruv) Note 1	ASTM D4355-07	%	≥ 90	≥ 90
Coefficient of direct shear	ASTM D5321/D5321M-14	%	≥ 75	≥ 75

NOTE 1 For Tensile Strength (Ts) shall be at 2% strain taken from load vs strain curves obtained from a NATA approved laboratory to demonstrate the Ultimate Tensile Strength (UTS).

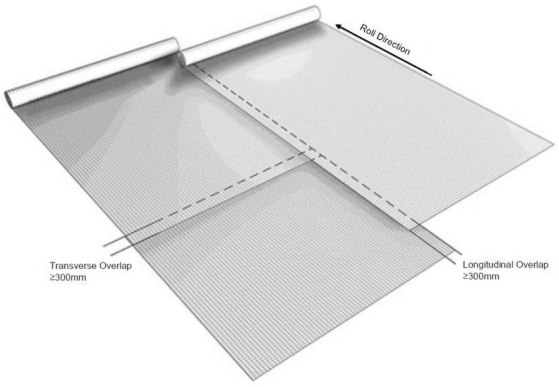
Ts @ 2% ≤ UTS x Rd x Ruv x Rc x Rm. Other recognised laboratories can be considered provided they are recognised by NATA or NATA MRA (Mutual Recognition Arrangements) or GAI-LAP (USA). Refer to Clause 5.1.

For biaxial product, minimum strength from both directions should satisfy the requirement of Table 6.2. For uniaxial product, minimum strength from the principal direction should satisfy the requirement of Table 6.2

NOTE 2 The particle grading used for the installation damage test result determined in accordance with ASTM D5818 shall use a particle grading consistent with grading C of Table 7.2.4-A as defined in MRTS05 Unbound Pavements.

NOTE 3 D50: The particle size represented by the "50 percent passing" point when conducting a sieve analysis of a soil sample. D85: The particle size represented by the "85 percent passing" point when conducting a sieve analysis of a soil sample.

NOTE 4 Pavement geosynthetic reinforcement to be used in natural subgrades with pH value between 4 and 9.



OVERLAP

The recommended minimum overlap for woven geotextile is 1000 mm in all directions for all subgrade CBR values. The recommended minimum geogrid/geocomposite overlaps are shown below:

mastaGRID™ Composite	
SUBGRADE CBR	**MINIMUM OVERLAP**
> 2	300 - 450mm
1 – 2	600 - 900mm
0.5 – 1	900mm
< 0.5	Advice from Engineering and Technology Branch to be obtained
All roll ends	900mm
All woven geotextiles	Standard Test Method for Determining the Shear Strength of Soil-Geosynthetic and Geosynthetic-Geosynthetic Interfaces by Direct Shear