

MacGrid® WG for soil reinforcement (75 years)

MacGrid® WG geogrids are used for soil reinforcement. These high performance geogrids are constructed of high molecular weight, high tenacity polyester yarns woven under tension and utilizing a polymeric coating process to provide superior engineering properties. MacGrid® WG geogrids are engineered to be mechanically and chemically durable, in both the construction phase and in aggressive soil environments ($4 \leq \text{pH} \leq 9$).

POLYESTER WOVEN GRIDS COATED WITH PVC

PRODUCT	Test Method	Unit	WG3	WG5	WG6	WG8	WG11	WG15	WG20
PRODUCT PROPERTIES									
Unit Weight (Approx.)	ASTM D5261	g/m ²	180	200	240	290	336	450	500
Aperture Size - MD (+/- 20%)		mm	28	28	28	28	28	28	28
Aperture Size - CD (+/- 20%)		mm	25	24	24	23	21	20	19
MOLECULAR PROPERTIES									
Molecular Weight (min.)	GRI GG8	g/mole	25,000						
Carboxyl End Group (CEG) Count (max.)	GRI GG7	meq/kg	30						
MECHANICAL PROPERTIES (MARV)¹									
Tensile Strength ¹ T _{ULT} - MD	ASTM D6637	kN/m	35	55	65	80	110	150	200
Tensile Strength ¹ T _{ULT} - CD	ASTM D6637	kN/m	20	20	20	20	20	20	20
Elongation at T _{ULT} - MD	ASTM D6637	%	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 11	≤ 12
Tensile Strength @ 2% Strain - MD	ASTM D6637	kN/m	9	14	16	20	28	38	50
Tensile Strength @ 5% Strain - MD	ASTM D6637	kN/m	18	28	33	40	55	75	100
LONG-TERM DESIGN PROPERTIES²									
Factor of Safety for creep rupture, RF _{CR}	ASTM D5262		1.50	1.50	1.50	1.50	1.50	1.50	1.50
Factor of Safety for installation damage, RF _{ID}	ASTM D5818		1.13	1.10	1.09	1.08	1.06	1.06	1.05
Safety for Factor of chemical durability, RF _{CH}	ASTM D5322		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Factor of Safety for environmental durability, RF _w			1.15	1.15	1.15	1.15	1.15	1.15	1.15
Factor of Safety for Creep joints, RF _{JNT}			1.0	1.0	1.0	1.0	1.0	1.0	1.0
Reduction Factor, RF = RF _{CR} × RF _{ID} × RF _{CH} × RF _w × RF _{JNT}			1.95	1.90	1.88	1.86	1.83	1.83	1.81
Creep Reduced Strength - MD	ASTM D5262	kN/m	23.3	36.6	43.3	53.3	73.3	100	133.3
Long-Term Design Strength (LTDS)		kN/m	18.0	29.0	34.5	43.0	60.2	82.0	110.5
PHYSICAL PROPERTIES									
Roll Dimensions (width x length)	—	m	3.9 x 100						
Roll Area	—	m ²	390						
Roll Weight	-	kg	92	105	110	128	148	165	220
Roll Diameter	-	cm	32	33	34	34	34	36	44

1. Minimum Average Roll Values (MARV) for machine direction unless otherwise noted. MARV calculated as the Mean minus two (2) standard deviations.

2. LTDS = T_{ULT} / (RF_{CR} × RF_{ID} × RF_{CD} × RF_{BD} × RF_{JNT}); for Sandy Soil D_{max} ≤ 3.5mm, D₉₀ < 1mm. Installation damage factor for other soils available upon request.

Maccaferri Canada Ltd. reserves the right to amend product specifications without notice and specifiers are requested to check as to the validity of the specifications they are using.

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