

MACMAT[®] R1 005
POLYMERIC REINFORCED GEOMAT

MacMat[®] R1 005 is a reinforced geomat made from a polymeric three-dimensional matrix having random shape that is extruded onto a polypropylene extruded geogrid.

MacMat[®] R

R1 005

Geomat properties

Polymer			Polypropylene
Mass per unit area ⁽¹⁾	EN ISO 9864	g/m ²	400 (± 30)
Melting point ⁽²⁾	ISO 11357-3	°C	160
Density ⁽²⁾	ISO 1183	kg/m ³	900
UV resistance ⁽³⁾			Stabilized

Reinforcement properties

Type			Polypropylene extruded geogrid
Tensile strength T _{ch} - MD / CMD ^(4,5)	EN ISO 10319	kN/m	5.5 (- 1.0) / 5.5 (- 1.0)
Strain at T _{ch} - MD / CMD ⁽⁶⁾	EN ISO 10319	%	12 / 10
Mesh opening size - MD ⁽¹⁾		mm	30 (± 10)
Mesh opening size - CMD ⁽¹⁾		mm	30 (± 10)

Composite Physical Properties

Mass per unit area ⁽¹⁾	EN ISO 9864	g/m ²	460 (± 40)
Voids index ⁽¹⁾		%	> 90
Thickness at 2 kPa ⁽⁷⁾	EN ISO 9863-1	mm	15 (± 2)
Roll width ⁽⁸⁾		m	4.00
Roll length ⁽⁸⁾		m	40

Composite Erosion Control Properties

Light Penetration (passing)	ASTM D6567	%	35 - 45
Ground Coverage		%	55 - 65
C factor (cover management factor) ⁽⁸⁾ : - rainfall intensity i = 50 mm/h - rainfall intensity i = 100 mm/h - rainfall intensity i = 150 mm/h	ASTM D6459		≤ 0.0155 ≤ 0.032 ≤ 0.043

Durability, Environmental and Sustainability Properties

Content of SVHC ⁽⁹⁾		%	≤ 0.1
Global Warming Potential Total (GWP) ⁽⁹⁾		kg CO ₂ Eq.	≤ 1.20E+00
Acidification potential (AP) ⁽⁹⁾	ISO 14025 EN 15804	mol H ⁺ Eq.	≤ 2.91E-03
Eutrophication Potential freshwater (EP-fr) ⁽⁹⁾		kg P Eq.	≤ 3.21E-06
Eutrophication Potential marine (EP-mar) ⁽⁹⁾		kg N Eq.	≤ 1.03E-03
Eutrophication Potential terrestrial (EP-ter) ⁽⁹⁾		mol N Eq.	≤ 1.12E-02

Durability: Annex B - hEN. To be covered within two weeks after installation. Predicted to be durable for a minimum of 5 years in natural soils with 4<pH<9 and soil temperature <25°C



- (1) Nominal value, where no specific tolerance is indicated a standard of 10% is admissible;
- (2) Informative value given at the best of our knowledge;
- (3) For detailed info, refer to the Durability info and data reported in the DoP;
- (4) The mechanical performances reported are those of the reinforcement grid of the composite before the assembly process and should not alter the basic properties. Please verify that during the testing operation the geocomposite is properly locked to the testing jaws in order to avoid sliding phenomena or mechanical damage to the reinforcement element itself. Furthermore, check that the geocomposite has been properly pre-tensioned in order to recover any geometrical deformations of the reinforcement grid that may have occurred during the manufacturing process of the composite;
- (5) Short-term tests in accordance with EN ISO 10319:2015. The values given correspond to Minimum Average Value at 95% confidence limit to establish the characteristic short-term tensile strength (T_{ch}) in accordance with EN 13251:2016 and calculated as the mean value of ultimate strength deducting the tolerance;
- (6) Typical value;
- (7) Typical value, however the geocomposite thickness can vary according to specific project requirements ranging from 8 to 22 mm approx.;
- (8) Calculated values certified by a CPESC (certified professional soil erosion & sediment control specialist) based on full scale test reports 732 and 734 run according to ASTM D4659 - Standard Test Method for Determination of Erosion Control Blanket (ECB) Performance in Protecting Hillslopes from Rainfall-Induced Erosion;
- (9) Values reported in the EPD certificate KIWA-EE- 000379-EN issued in accordance with EN15804+A2: 2019 and ISO14025 with validity till April 2029. The reported values are selected among the 13 mandatory certified values (EN 15804+A2:2019) and referred to the Product Stage A1-A3. Additional environmental impact indicators and different Product Stages valid for Life Cycle Assessment are reported in the full EPD certificate of the product.



MD: Machine Direction; CMD: Cross Machine Direction



For the optimisation and improvement process of the technical characteristics of the products, the producer reserves the right to modify standards and characteristics of the product without warning. The information contained herein is to the best of our knowledge accurate, but since the circumstances and conditions in which it may be used are beyond our control, we do not accept any liability for any loss or damage, however arising, which results directly or indirectly from the use of such information nor do we offer any warranty or immunity against patent infringement. Specifiers are requested to check the validity of the specification they are using.

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