



TerraMat® Grass

Turf Reinforcement Mat for Erosion Control

TerraMat® Grass is a lightweight, three dimensional erosion mat with a similar appearance on both sides, designed to provide permanent erosion control of soil and to reinforce the root system of grasses and vegetation for such areas as slopes, river banks, channels and other erosion prone areas.

Made from uniformly distributed 100% green polypropylene synthetic UV stabilised fibres needle punched together on a scrim. Can be installed within the soil just below the surface or can be placed at the surface and hydromulched. The three layers are mechanically bonded together by needle punching to form the three dimensional TerraMat® Grass.

STRUCTURE

The three dimensional structure consists of:

- 150gr/m² 100% UV Stabilised polypropylene fibres
- 65gr/m² polypropylene Woven scrim
- 150gr/m² 100% UV stabilised polypropylene fibres

The three layers are mechanically bonded together by needle punching to form the three dimension TerraMat® Grass.

TYPICAL VALUES

Property	Units	Test Method	TerraMat®TRM
Mass/Unit Area	gsm	ASTM D6566	365
Thickness	mm	ASTM D6525	7
Tensile Strength-MD	kN/m	ASTM D6818	5.0
Tensile Strength-TD	kN/m	ASTM D6818	5.0
Manning's N			0.028
Density	g/cm	ASTM D7912	0.90
UV Resistance	%	ASTM D 4355-1000 hr	80
Roll Size	m		3 x 35

CHANNEL PERFORMANCE DESIGN VALUES

Property	Units	Test Method	TerraMat® Grass
Unvegetated Shear Stress	Pa	ASTM D6460	90
Unvegetated Velocity	m/s	ASTM D6460	2.7
Vegetated Shear Stress	Pa	ASTM D6460	380
Vegetated Velocity	m/s	ASTM D6460	4.9

Consult Polyfabrics Australasia or a certified Engineer for site specific installation instructions. Polyfabrics Australasia reserves the right to change its product specification at any time. It is the responsibility of the specifier and purchaser to ensure that product specifications used for design and procurement purposes are current and consistent with the products used in each instance.

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INSTALLATION

Correct installation of TerraMat®TRM is critical for a successful outcome.

TerraMat® is typically laid by beginning at the top of the slope and rolling the TerraMat® down the slope. However, TerraMat® Grass can be orientated in different directions to achieve maximum erosion protection depending on site conditions such as direction of river. The number of joins in the TerraMat® should be minimised to increase the integrity and provide the strongest structure. As a general rule, if the degree of slope is greater than 1V:3H it is recommended TerraMat® is rolled down the slope. For a slope less than 1V:3H the TerraMat® should be rolled across the slope. Regardless of direction, to ensure effectiveness of the TerraMat® it is recommended that the upper edges on top of the embankment are secured in an anchor trench to resist lift and provide direct contact with the soil. If more than one width is required it should overlap the TerraMat® previously installed. Digging should be avoided on slopes to prevent further destabilisation. If the degree of slope is greater than 1V:3H it is recommended the anchor trench be installed at least 1 m from the crest of the embankment.

INSTALLATION ON MODERATE (1V:3H-1V:2H) TO STEEP SLOPES (>1V:2H)

1. Prepare the site by grading and shaping to a relatively smooth profile that is free of weeds, rocks, roots and sticks to ensure the TerraMat® will have complete contact with the soil. Some remaining debris/litter is acceptable to be covered and large rocks should only be removed if this does not cause excessive disturbance. Removal of root structures from any existing native vegetation may further destabilize the site and lead to erosion, therefore the roots of surviving trees should not be damaged or disturbed. All native vegetation present on the slope should also be retained where possible and TerraMat® installed around the vegetation.
2. Begin at the top of the slope and prepare an anchor trench 150-200mm deep by 150mm wide along the length of the area to be protected by TerraMat®. It is recommended the TerraMat® be anchored to a minimum of 1m beyond the crest of the slope or as far beyond the crest as site conditions allow. In situations where this is not possible, the TerraMat® should be anchored above the high water mark at a minimum.
3. Roll the TerraMat® over the prepared anchor trench securing it to the bottom of the trench with pins approximately 300mm apart ensuring the pins are flush with the surface. Be sure to leave enough TerraMat® on the landward side of the anchor trench to cover it once it has been backfilled. Refer to anchor trench detail.
4. Backfill the anchor trench, compact the soil and cover the backfilled trench with the remaining end of the TerraMat® and secure with pins 300mm apart.
5. Unroll the TerraMat® down the slope and gently pull the TerraMat® to take out any slack every 5-6m being careful not to stretch it. Ensure the TerraMat® has direct contact with the soil surface.
6. Secure the TerraMat® in place with pins at 0.5-1m intervals along the vertical edges and staggering pins horizontally approximately every 400-600mm across the TerraMat®. Note, the TerraMat® must remain taut and have sufficient contact with the soil surface as it is pinned. This should be a major consideration when determining the number of pins to use. Table provides the recommended number of pins for degrees of slope.
7. TerraMat® should continue below the low water mark and appropriate toe protection considered.

Type of slope	Gradient (v:h)	Minimum pins/m2
Steep slopes	1:1 – 1:2 or greater	6 to 8
Moderate slopes	1:2 – 1:3	4 to 6
Gentle slopes	1:4 or less	4

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