

# BioMac “N”

## SPECIFICATION

**BioMac “N”** is made of coconut coir fibers woven and twined into geonets. As a bioengineering material, it has been designed specifically to control soil erosion and when properly seeded, it will assist the propagation of new growth in areas subjected to occasional hydraulic flow. **BioMac “N”** reduces erosion and downward migration of slope soil when installed correctly. **BioMac “N”** is biodegradable thus will decompose in due time, fertilizing the soil and expediting richer vegetation growth.

The coconut coir fiber material used for the fabrication of **BioMac “N”** shall be a multicellular fiber of 12 to 24 microns in diameter and a length-to-diameter ratio of 35. The fiber shall also be hygroscopic, with moisture content of 10-12% at 65% relative humidity, and 22-55% at 95% relative humidity.

The woven hand-spun coco coir twine that forms coconut geonets shall have a diameter of 3mm ( $\pm 10\%$ ) or 5mm ( $\pm 10\%$ ). The coco coir twine shall have a tensile strength of not less than 150N.

### PHYSICAL PROPERTIES OF BioMac “N”

DESCRIPTION	BioMac “N” 400	BioMac “N” 700
Average # of Twines in crosswise direction	40	40
Average # of Twines in lengthwise direction	30	40
Density, minimum (gsm)	400	700
Width (m)	2	2
Length (m)	25	25

NOTE Twine diameter is 3mm ( $\pm 10\%$ )

For the optimization and improvement process of the characteristics of the product, MPI reserves the right to modify this specification without prior notice. The information contained herein is accurate to the best of our knowledge, but since the circumstances and conditions in which it may be used is 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 the provided information.

## BIOMAC “N” INSTALLATION GUIDELINES

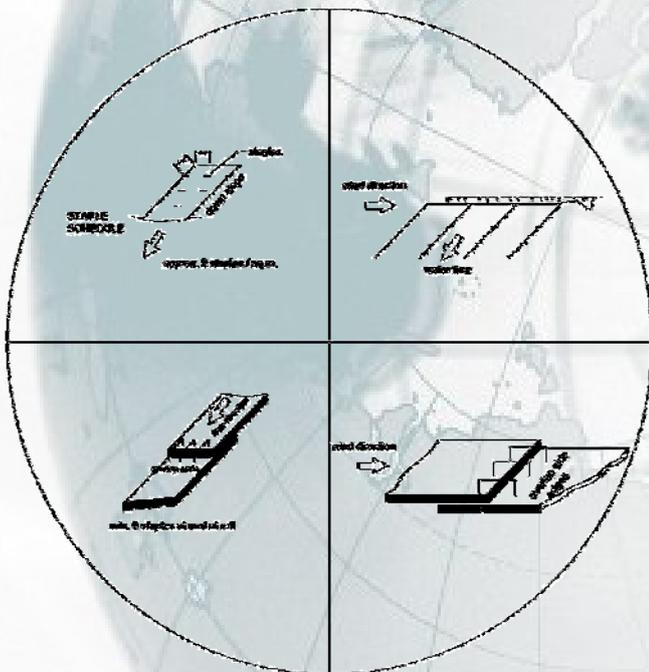
BioMac “N” erosion control mattresses are designed for quick and easy installation. It is lightweight and convenient to handle. The following are general guidelines for the installation of BioMac “N” however, as conditions at each site may vary, other methods may be employed as appropriate.

### SLOPE PREPARATION

- 1.1 Grade and smooth slopes according to engineering drawings.
- 1.2 Remove loose rocks, debris and clear off grub.
- 1.3 Fill in guidelines, pack gently and even out slope surface.

### LAYING BioMac “N”

- 2.1 At uphill end, excavate a trench at least 200mm deep, secure BioMac “N” in the trench and backfill with soil.
- 2.2 Unroll BioMac “N” from the top of the slope, ensuring it sits loosely and in full contact with the soil.
- 2.3 Insert 200mm long staples at a minimum 1.0m interval across the slope and 0.5m intervals down the slope (at a rate of 2-4 staples per sq.m.)
- 2.4 Overlap BioMac “N” sides by 50mm and securely staple both edges. Overlap should be in the wind direction.
- 2.5 Overlap BioMac “N” ends by 50mm, with the upper overlapping the lower roll. Secure with a minimum of 5 staples.
- 2.6 Trim off end of BioMac “N” roll with scissors and staple securely at end of slope.
- 2.7 Care must be taken to install BioMac “N” without damaging the slope surface, especially fill slopes. Wide area wooden ladders can be employed to cover the slope to assist during the installation process.



### SEEDING PROCEDURE

- 3.1 Install BioMac “N” on the slope, and apply appropriate fertilizer and seed mix as per specification.
- 3.2 Seed mix and fertilizer are very site specific. Therefore, consult local experts to assist in the correct selection.
- 3.3 Irrigate BioMac “N” in dry conditions.