

# VMax<sup>®</sup> TRMs



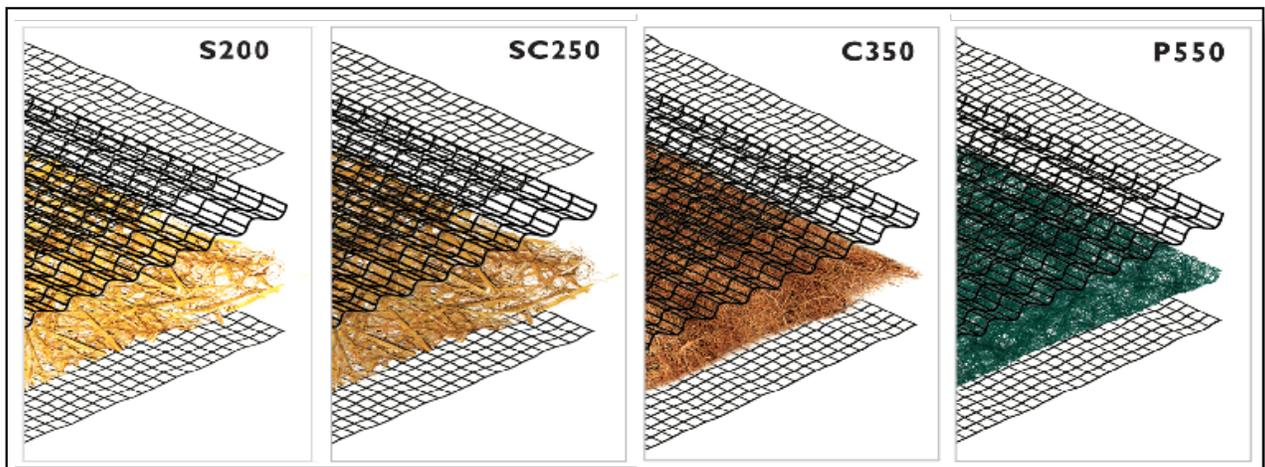
## A Permanent Turf Reinforcement Mat Solution for Every Design

The VMax system of permanent TRMs are ideal for high-flow channels, streambanks, shorelines, and other areas needing permanent vegetation reinforcement and protection from water and wind. Our VMax TRMs combine a three-dimensional matting and a fiber matrix material for all-out erosion protection, vegetation establishment and reinforcement. The VMax TRMs are available with various performance capabilities and support reinforced vegetative lining development from germination to maturity.

## VMax<sup>®</sup> Unique Three-Dimensional Design

North American Green VMax TRMs are each designed to maximize performance through all development phases of a reinforced vegetative lining. The corrugated matting structure lends a true reinforcement zone for vegetation entanglement, especially compared to flat net mats. The unique design of the corrugated matting also helps to create a shear plane that deflects flowing water away from the soil surface. And the incorporation of a fiber matrix supplements the 3-D structure by creating a ground cover that blocks soil movement and aids in vegetation establishment.

### Four VMax Turf Reinforcement Mats Designed for Every Level of Performance



|   |   |  |   |   |
|---|---|--|---|---|
| <b>Matrix Fiber</b>                     | 100% Straw  | 70% Straw / 30% Coconut                                | 100% Coconut  | 100% Polypropylene  |
| <b>Netting Types</b>                    | Top and Bottom light-weight UV-stabilized PP, Crimped PP center net | Top and Bottom UV-stabilized PP, Crimped PP center net | Top and Bottom heavy-weight UV-stabilized PP, Crimped PP center net | Top and Bottom ultra heavy-weight UV-stabilized PP, Crimped PP center net |
| <b>Typical Slope Applications (H:V)</b> | 1:1 and greater   | 1:1 and greater  | 1:1 and greater   | 1:1 and greater   |
| <b>Channel Shear Stress Threshold</b>   | Unvegetated: 2.3 psf<br>Vegetated: 10.0 psf                         | Unvegetated: 3.0 psf<br>Vegetated: 10.0 psf            | Unvegetated: 3.2 psf<br>Vegetated: 12.0 psf                         | Unvegetated: 4.0 psf<br>Vegetated: 14.0 psf                               |
| <b>Channel Velocity Threshold</b>       | Unvegetated: 8.5 fps<br>Vegetated: 18 fps                           | Unvegetated: 9.5 fps<br>Vegetated: 15 fps              | Unvegetated: 10.5 fps<br>Vegetated: 20 fps                          | Unvegetated: 12.5 fps<br>Vegetated: 25 fps                                |



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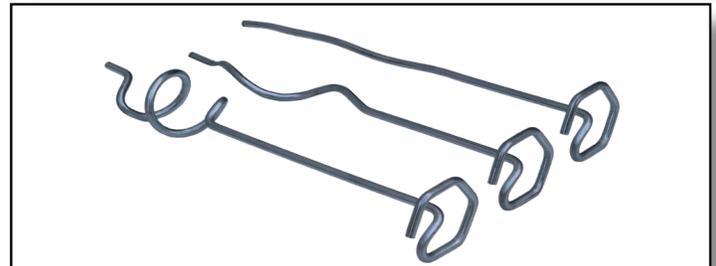
# VMax<sup>®</sup> TRMs cont.

## Selecting the Right VMax TRM

Choosing the right VMax TRM can be made easy by utilizing our Erosion Control Materials Design Software ([www.ecmds.com](http://www.ecmds.com)), which allows users to input project specific parameters for channels, slopes, spillways, and more and ensures proper evaluation, design, and product selection in return. Our four VMax TRMs offer varying performance values, fiber matrix longevities, and price points, to help you meet your project specific goals.

## Twist Pin + VMax TRM - an Ideal Installation

Utilizing the VMax TRMs in conjunction with Twist Pin fastener technology can result in an installed system that pushes TRM performance with increased factors of safety. The combined system has been shown to have superior pullout strength performance up to 200 lbs when compared to installation with traditional wire staples and pins. This is up to 10x the pullout resistance of wire staples and pins. Additionally, the use of the twist pins provides intimate contact between the TRM and the soil, and have been shown to be effective in a wide range of soil types. With a quick and easy installation using an electric drill and custom chuck, the TRM+Twist Pin system can eliminate time and labor costs from day 1 through project release.



*VMax turf reinforcement mat being installed on a channel application (top right), twistex pins installed with TRMs can have increased system performance and pullout resistance (middle right), twist pins are available in 8" and 12" lengths and two coil configurations designed for hard or soft soil types (lower right).*

*Comparison of common TRM fasteners based on pullout performance and typical application (below).*

| Fastener            | Pullout Resistance (lb) | Comment   |
|---------------------|-------------------------|---|
| 6" Round Top Pin    | 14                      | Best for hardened soils where other fasteners are damaged during installation.  |
| 6" Regular U-staple | 42                      | Standard fastener that develops additional pullout as legs may deflect and add friction during installation.  |
| 12" Pin with Washer | 35                      | Standard fastener good for soils where staples can be bent frequently and are too difficult to install.   |
| 18" Pin with Washer | 27                      | Standard fastener good for soils where staples are frequently bent and 12" straight pins fail to provide sufficient pullout because surface soil is wet or loose. |
| Twist Pin           | 170                     | Upgraded fastener that provides high pullout and ideal for loose or soft soils.   |



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