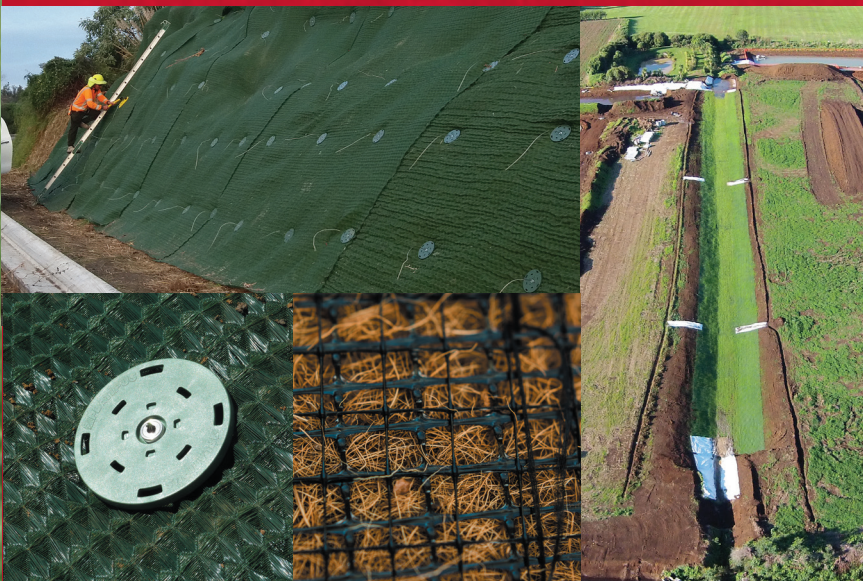




# ENGINEERED TURF REINFORCEMENT

Sustainable erosion control solutions to replace non-vegetating hard armour



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# SUPERIOR EROSION AND SCOUR PROTECTION

High Performance Turf Reinforcement mats are designed to protect the natural ground from scour and erosion and provide a robust matrix for the vegetation roots to grow into. This combination of nature and technology provides a much-enhanced performance with an environmentally friendly green solution.

Cirtex T-RECS and ECC3 are designed to provide channel stabilisation and protection for slopes subjected to surface flows. When used in conjunction with Platipus® Percussion Anchors, T-RECS is also ideal in steep embankments to protect against surface erosion and solve shallow plane instability challenges.

## The advantage...

T-RECS and ECC3 have been carefully selected from a large range of products available on the market to address specific challenges found in New Zealand conditions. Both are considered permanent solutions as they have at their core a UV stabilised PP structure. T-RECS also boasts a very high strength so it can be used for structural applications, while ECC3 has the added benefit of a natural coir filling to assist with short term protection until the grass establishes and assist in grass growth.

Both products have comprehensive data including physical properties and performance results from large scale testing to give the designer the required parameters for a successful design.



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# T-RECS

## HIGH PERFORMANCE TURF REINFORCEMENT MATTING (HPTRM)

T-RECS HPTRM is a permanent, three-dimensional, woven polypropylene mat designed to provide erosion protection on steep slopes and high velocity channels.

The process of manufacturing T-RECS involves cross-directional monofilament fibres woven into multiple dimensions featuring the T-RECS technology with dome characteristics.

This unique process and feature enhances the performance of the product and gives additional support to the vegetation. T-RECS provides reinforcing capabilities and interlocking root system while assisting the vegetation establishment. The product can be either surface applied or soiled filled to maximise performance.

The T-RECS meets Type 5.A, 5.B, and 5.C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.18.

T-RECS can be secured in place using the Cirtex® Ground Staples providing a secure connection to ensure that the grassroots establish into the matting. The Cirtex Platipus ARGs® anchors can also be used to secure the T-RECS in the more demanding applications where extra reinforcement is needed.

- ✓ **Suitable for use in high velocity applications**
- ✓ Can be **used to replace costly hard armour systems** such as concrete, rock or gabion mattresses
- ✓ **Unique dome shape** giving greater surface coverage and improved adherence to soft subgrade
- ✓ Interweaving dome shape **allows maximum seed, soil and water to be trapped, promoting faster vegetation** and a stronger root system
- ✓ **Used in conjunction with Platipus® Earth Anchors** on steep slopes or high velocity channels or bunds

### T-RECS PERFORMANCE

Strength	44kN/m
Vegetated Velocity	7.6m/sec







#### T-RECS

Code	Colour	Roll Size	Area
13967	Tan	3.66m x 22.86m	83.66m <sup>2</sup>
13074	Green	3.66m x 22.86m	83.66m <sup>2</sup>





# ECC3

## HIGH PERFORMANCE TURF REINFORCEMENT MATTING

ECC3 is a permanent turf reinforcement matting that allows vegetation to be established and maintained in high stress environment.

ECC3 consists of three layers of UV stabilised netting for long term reinforcement with an infill of natural coconut fibre to assist with vegetation establishment. ECC3 is ideal for providing a naturally vegetated finish for steep slopes (1:1) that are prone to erosion and scour.

ECC3 allows for grass applications in stormwater overflow paths and swale drains providing an easy to maintain solution. The use of reinforced grass in swale drain applications also helps to minimise the transmission of waterborne sediments into our waterways and provides a soft green solution. Once vegetated, ECC3 can handle flow velocities up to 7.62 m/s which make it an attractive alternative to traditional hard armour scour protection methods such as concrete and gabions.

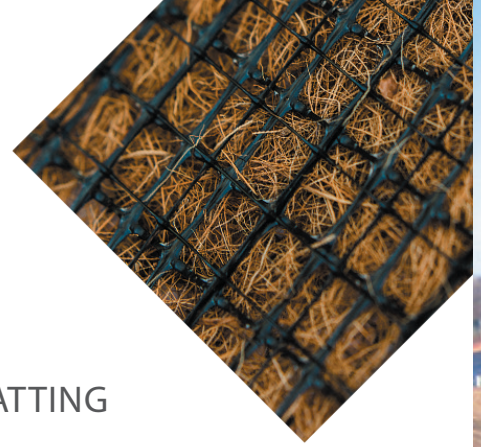
Manufactured from a matrix of UV stabilised Polypropylene reinforcement meshes and incorporating a natural coconut fibre fill to assist with vegetation establishment, ECC3 is considered to be a permanent TRM with enhanced short and long term performance. The natural colour of ECC3 allows it to blend in with the surrounding environment until the vegetation is established.

### FEATURES >

- ✓ Allows an **aesthetically pleasing vegetated finish**
- ✓ **Excellent flow velocity** performance
- ✓ **Assists** with **vegetation growth**
- ✓ **Alternative scour protection** to concrete and gabion type structures
- ✓ **Easy to install** and requires no specialist equipment

### ECC3 PERFORMANCE

Strength MD/TD	11.70kN/m / 9.38kN/m
Vegetated Velocity	7.62m/sec









# Platipus® ARGS® Anchors

Stabilising slopes offer significant challenges. The lack of deep-rooted vegetation, excess water, poor drainage, and over steepening often makes them susceptible to erosion or instability. Platipus® Anchors has proven that the combination of Percussion Driven Earth Anchors (PDEAS®) and a high strength facing material to support the load generated by the PDEA will stabilise and prevent erosion in these applications.

**The Platipus ARGS® range consists of three main anchor types:**

## **PLATIPUS S2 ANCHOR**

The Platipus S2 ARGS PDEA assembly comes in a variety of configurations with up to 1m of 3mm stainless steel wire tendon, two sizes of HDPE load plate and either a copper ferrule or wedge grip option. The anchor system should be driven through the surface covering material to a minimum depth of 450mm to provide an ultimate holding capacity of up to 250kg. Common facings used with Platipus S2 Anchors include: Turf Reinforcement Matting, Turf Pavers, Geotextiles and HDPE coverings.

## **PLATIPUS S4 & S6 ANCHORS**

The Platipus S4 ARGS PDEA is the perfect solution for granular/non-cohesive soil. The larger S6 ARGS should be used in cohesive conditions. Both assemblies include a length of 4mm stainless steel wire tendon, a choice of load plates and a stainless steel conical wedge grip. They should be driven to a minimum depth of 750mm beyond the failure plane and have an ultimate holding capacity of 1000kg. Anchor depth, spacing and loads should be determined by a qualified Geotechnical Engineer. Common facings used with Platipus S4 & S6 Anchors include: High Performance Turf Reinforcement Matting (HPTRM), high strength geotextiles and geogrid and Rockfall Mesh.





**PLATIPUS ARGS ANCHORS**

Code	Grade
76314	S2 Anchor GEO 1m Kit
76313	S2 ARGS 1m Kit
76369	S4 ARGS 1.5m Kit
76371	S6 ARGS 1.5m Kit
76372	S6 ARGS 3m Kit





**Many other geosynthetic solutions available please phone us on 0800 CIRTEX or visit [WWW.CIRTEX.CO.NZ](http://WWW.CIRTEX.CO.NZ)**

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#### **CIRTEX SOLUTIONS**

- ✓ Pavements, Embankments and Raft Foundations
- ✓ Reinforced Soil Walls
- ✓ Stormwater Management Systems
- ✓ Slope Stability Systems
- ✓ Earth Anchoring Systems
- ✓ Subsoil Drainage Filtration
- ✓ Retaining Walls
- ✓ Coastal Protection
- ✓ Surfacing Reinforcement
- ✓ Landfill and Environmental Barrier Systems
- ✓ Dewatering
- ✓ Erosion and Sediment Control
- ✓ Site Supplies
- ✓ Permeable Paving
- ✓ Landscape Edging and Paver Restraints



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