

Ece®
EMPRESA DE CONTROL DE EROSIÓN

Profile
Solution for your Environment

OFFICIAL REPRESENTATIVE IN PARAGUAY

HYDROSEEDING · REVEGETATION · EROSION CONTROL

Hydroseeding and mulches
Profile Products

The most advanced hydraulic mulches in the world, permanent reinforcement mattings and biodegradable dust suppressants — applied in Paraguay by Ece with its own hydroseeders and crews.

epcepy.com

info@epcepy.com · +595 981 003532

01 THE LEADER IN SOIL HEALTH

Profile Products LLC (Buffalo Grove, USA) is the world reference in hydraulic solutions for erosion control and vegetation establishment. Its approach **Green Design Engineering™** combines erosion engineering with agronomic excellence: every product is born to protect the soil **y** make it produce vegetation.

Its wood fibres **Thermally Refined®** (100% recycled, refined under pressure and temperature) are the heart of a line running from economical mulches to the top-performing Flexterra® HP-FGM, taking in biological substrates, permanent reinforcement mattings and certified dust control **USDA Biobased**.

> **Ece does not just sell the product:** applies it. Our own hydroseeders, trained crews and our own technical installation specifications (approved by the MOPC) — the only turnkey professional hydroseeding service in the country.

>99%
FLEXTERRA HP-FGM EFFECTIVENESS

600%
MORE GERMINATION VS. THE ORIGINAL FGM

USDA
CERTIFIED BIOBASED

PS3
DESIGN AND SELECTION SOFTWARE



Hydraulic application on a slope — photo: Profile Products



Flexterra HP-FGM is applied from the hydroseeder and cures in 0–2 hours · photo: Profile Products®

02 HYDRAULIC MULCHES

A matrix for every gradient and every budget. The whole line is applied with a hydroseeder — no labour-intensive work, no anchors — and is 100% biodegradable:

Product	Type	Maximum slope	Curing	Functional protection
Wood with Tack	Fibre mulch + tackifier	2H:1V	24–48 h	3 to 6 months
ProMatrix™	EFM · engineered fibre matrix	1H:1V	4 to 24 h	up to 12 months
Flexterra®	HP-FGM · high-performance flexible growth medium	steeper than 1H:1V	no waiting	12 to 18 months
CocoFlex™	ET-FGM · coir + wood	0.25H:1V	no waiting	up to 24 months

THE RATE IS SET BY THE SLOPE

Slope condition	Rate
Gentler than 4H:1V	2,800 kg/ha
4H:1V to 3H:1V	3,400 kg/ha
3H:1V to 2H:1V	4,000 kg/ha
2H:1V to 1H:1V	4,500 kg/ha
Steeper than 1H:1V	5,000 kg/ha
Under a matting or TRM	1,700 kg/ha

> **What separates an FGM from a mulch:** the mulch needs 24 to 48 hours without rain to cure. Flexterra and CocoFlex protect **from the moment they touch the ground**. In a country where it rains when it pleases, that difference decides the job.

Each product also has a **maximum slope length** that it protects without water diverters: 15 m for the mulch and ProMatrix, 30 m for Flexterra and 38 m for CocoFlex, measured on 3H:1V. If the slope is longer or steeper, berms or diverters have to be introduced — and that is decided in the design, not on site.

HOW TO CHOOSE

The selection is sized with the software **PS3 (Profile Soil Solutions)** according to the gradient, the soil, the design rainfall and the vegetation target. Ece surveys the site, runs the design with the manufacturer and delivers the specification with the rate per hectare — at no charge.



Cannon application — fast, uniform coverage on large slopes · photo: Profile Products®

03 SOIL AMENDMENTS

Sometimes the problem is not erosion: it is that there is no soil. On a rock cut, on mine spoil, on a fill of sterile material, the seed does not take because there is no medium for it to take in. No matting fixes that: you have to **build the soil**.

ProGanics® makes it wet, with the same hydroseeder: biochar, seaweed extracts, humic acid, mycorrhizae and recycled wood and bark fibres. It creates the medium, but it **does not protect**: that is why it goes under a hydraulic mulch or a matting.

ProGanics® Dual solves both in a single pass — it builds soil and protects like a mulch — and is the choice when the programme or the access will not allow two applications.

> **The rate is not set by the gradient** but the analysis of the soil's organic matter. That is why the prior test is not a formality: it is what sets the budget.

Soil organic matter	ProGanics rate
Less than 0.75%	5,600 kg/ha
0.75 to 1.5%	5,040 kg/ha
1.5 to 2.0%	4,480 kg/ha
2.0 to 5.0%	3,920 kg/ha

WHERE IT FITS

Rock cuts and sterile soils · Mine spoil and quarries · Fills with borrow material · Compacted or burnt soils · Sites where an earlier seeding has already failed



ProGanics® applied over sterile substrate: the soil that was missing, made on site

04 FUTERRA® MATTINGS

Two families with different jobs. The **mattings** are temporary: they hold the soil and the seed for the first months and then degrade. The **TRM** are permanent: a matrix of heat-fused nylon monofilaments that stays in the ground permanently, with **95% open space** so the root grows through it and stays anchored inside it.

F4 Netless® carries no netting and no threads: nothing to trap wildlife or tangle in the brushcutter. **EnviroNet™** adds a fast-degrading rectangular net for slopes with wind or a more demanding installation. And the **TRM 7003 · 7010 · 7020** covers permanent reinforcement, from the slope to the revegetated channel.

> **In a channel, the variable is not the gradient** but the flow velocity and the shear stress. That is why the TRM is chosen from the design flow, and its performance is declared with and without established vegetation.



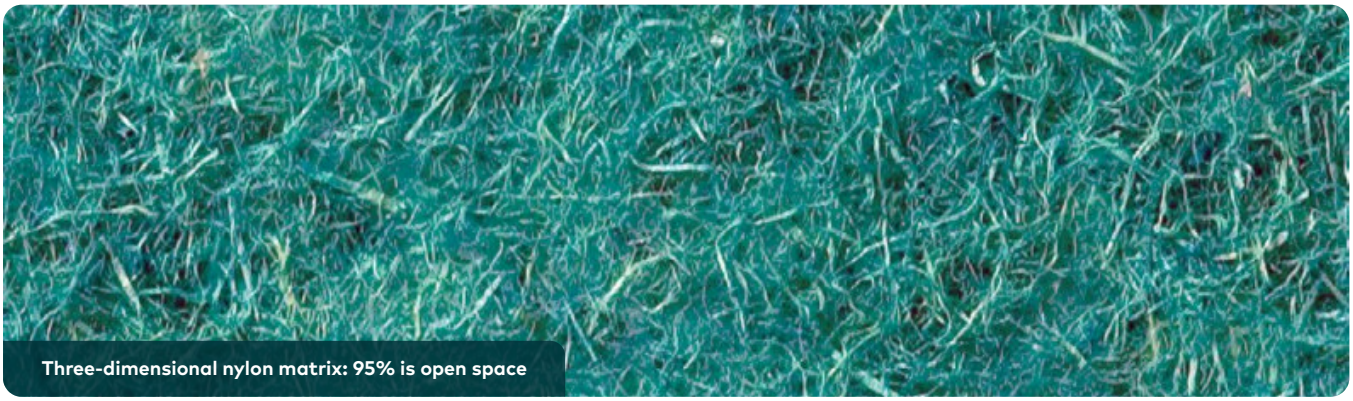
The turf grows through the matrix and is reinforced · photo: Profile Products®

EXTREME CASES

For extreme gradients, critical structures and flows beyond the above, there is the **R45 HP-TRM** 19 mm thick, with higher UV stability and very high tensile strength, combinable with driven anchors **Anchor Armor™**.

Product	Type	Rolls	Critical shear stress	Critical velocity
F4 Netless®	Temporary matting, netless	1.0 and 2.0 m × 27.4 m	—	—
EnviroNet™	Temporary matting with degradable netting	1.0 and 2.1 m × 41 m	—	—
TRM 7010	Permanent · intermediate	to project	380 N/m²	4.9 m/s
TRM 7020	Permanent · standard · 10 mm	to project	810 N/m²	6.1 m/s
R45 HP-TRM	Permanent · extreme cases · 19 mm	to project	958 N/m²	9.1 m/s

Values with established vegetation, ASTM D6460 test. TRM 7003 completes the range below the 7010. Effectiveness of the mattings: 99.9% under the UWRL protocol.



Three-dimensional nylon matrix: 95% is open space

05 DUST SUPPRESSANTS

DustRX™ Hydro — 100% biodegradable fugitive dust control, certified **USDA Biobased**, applicable with a water truck or a hydroseeder. It binds the surface fines with a duration far greater than watering: fewer truck passes, less fuel, fewer complaints.

No salts, solvents or chlorides: **it does not degrade the soil, does not harm the vegetation and does not corrode plant**. Its temporary green dye shows the coverage during application and disappears as it dries.

> **Rate:** 112 kg/ha · mix 22.7 kg per 3,790 L of water · 22.7 kg bags (40 per pallet).



Application of DustRX Hydro — the green marks the coverage

APPLICATIONS

Road works and diversions · Ranch and service roads · Mining and quarries · Solar and wind farms · Showgrounds and equestrian arenas



The same Ece hydroseeder fleet applies mulches, seeding and dust control

HOW IT IS APPLIED

112 kg per hectare, mixed at a rate of **22.7 kg per 3,790 litres** of water. It is loaded slowly into the tank with constant agitation, so the material activates, and sprayed evenly over the surface.

It works both **hydroseeder** — with tower or hose — as **tanker truck**. There is no need to close the road: it is applied over the surface in use. When finished, purge the pump and the lines.

WHY NO CHLORIDES

Calcium or magnesium chloride adds salts to the soil and to the runoff, corrodes plant and punishes roadside vegetation. DustRX™ carries no salts, solvents or chlorides: it is water-soluble, non-toxic and biodegradable, with USDA Biobased 100% certification.

06 RAÍZ ECE SYSTEM

No single product solves a difficult slope. The Raíz Ece System combines the three layers that are needed — soil, mulch and reinforcement — dosed according to the **gradient** and the **water flow** of the project. The result is not a lining: it is a vegetative cover that gets stronger with time, as the root develops inside the matrix.

1 · Soil
PROGANICS®, RATE BY ORGANIC MATTER

2 · Mulch
FLEXTERRA® OR COCOFLEX™ TO SUIT THE GRADIENT

3 · Reinforcement
FUTERRA® TRM TO SUIT THE FLOW

Situation	Layer 1	Layer 2	Layer 3	Result
Slope up to 2H:1V, no concentrated flow	ProGanics if the soil is poor	ProMatrix or Flexterra	not needed	Stable vegetative cover
Slope steeper than 1H:1V	ProGanics	Flexterra or CocoFlex	matting if there is wind	Protection for up to 2 years
Slope with concentrated runoff	ProGanics	Flexterra over the matting	TRM 7010 or 7020	Permanent root reinforcement
Revegetated channel, moderate flow	ProGanics	Flexterra as infill	TRM 7020	Up to 6.1 m/s and 810 N/m²
Channel or spillway, extreme flow	ProGanics	Flexterra as infill	R45 HP-TRM with anchors	Up to 9.1 m/s and 958 N/m²

It replaces concrete, it does not imitate it. A channel with the system costs between a third and a half of a rigid structure, blends into the landscape, builds no uplift pressure and reaches **10 times the erosion resistance of natural vegetation**. Tested to ASTM D6460 at the hydraulics laboratory of Colorado State University.



The roots grow inside and beneath the matrix · photo: Profile Products®



The three layers at work: the vegetation ends up being the structure

07 ECE HYDROSEEDING IN PARAGUAY

Our own
FLEET OF HYDROSEEDERS

Technical specifications
MOPC-APPROVED SPECIFICATIONS

+24
PROJECTS DELIVERED IN THE COUNTRY

1
A SINGLE PARTY RESPONSIBLE: MATERIAL + APPLICATION

The complete service, from the seed to the green slope. Ece imports the Profile line, designs the solution with the manufacturer's software and applies it with its own plant and crews. Reference projects: the back slopes of the **Itá–Pirayú link**, MOPC road slopes, revegetation of channels and banks across the country.

Ask for the verification of your project: we survey the gradient, the soil and the design rainfall, and send back the specification with product, rate and cost per hectare.

> **A winning combination:** Profile hydroseeding over HYDROTEX mattresses or Strata geocells — Ece integrates the three lines into a single piece of protection engineering.



An Ece crew hydroseeding — Itá–Pirayú, Paraguay

Ece®
EMPRESA DE CONTROL DE EROSIÓN

Ece® — Integrated engineering company
Tte. Héctor Vera 2136 esq. Raúl Carmona, C.P. 1820
Asunción, Paraguay
epcepy.com · info@epcepy.com
+595 981 003532
IG/FB: @epcepy · LinkedIn: /company/epcepy



Slope revegetated by hydroseeding — Bioceanic Highway, Paraguayan Chaco