Ece®
EMPRESA DE CONTROL DE EROSIÓN

Synthetex®
Reinforcing infrastructure for good.®

OFFICIAL REPRESENTATIVE IN PARAGUAY



PROTECTION AGAINST EROSION AND SCOUR

Concrete mattresses HYDROTEX®

Textile forms filled with concrete in situ — even underwater. Better strength than a traditional rigid lining, with faster, safer and cheaper installation. Designed to measure for every project.

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01 THE SYSTEM

What is an encapsulated concrete mattress? It is a method of casting and installing concrete consisting of two layers of high tenacity woven geotextile that are filled, already on site, with pumped fine aggregate concrete (mortar). The textile acts as permanent formwork: it sets the thickness, adapts to the topography of the ground and allows casting **even underwater**.

HYDROTEX® mattresses have better strength than the traditional rock/stone and precast concrete options, with easier, safer, more customisable and more affordable installation.

- It can be filled with concrete **underwater** and in cold conditions
- Can be designed to articulate and follow ground settlement
- Permeability by design to relieve hydrostatic pressures
- Cut to measure to fit any setting or obstruction
- Internal reinforcing cables and panel-to-panel connections with zips
- Versions that allow vegetation to grow
- Lightweight geotextile: a large saving in transport costs
- Less labour, less installation time and **with no heavy plant**

HYDROTEX® AGAINST THE ALTERNATIVES

	Geocells	Rip-rap	Precast blocks	Gabions	HYDROTEX®
Ease of installation	✗	✓	✗	✗	✓
Low transport cost	✓	✗	✗	✗	✓
No heavy plant	✓	✗	✗	✓	✓
Ease of access to the site	✓	✗	✗	✓	✓
Underwater installation	✗	✓	✗	✗	✓



Articulated Block protecting the abutment and the piers — Gasory Stream Bridge, Paraguay

1
ANALYSIS
An impartial assessment of the project specifications to determine the best solution.

2
DESIGN
Engineering to the hydraulic parameters, the topography, the gradient and the site conditions.

3
QUOTATION
Detailed, with solution design, cost savings and total installed cost.

4
MANUFACTURE
Shop drawings for each panel; the manufacturer's own production in Toccoa, Georgia (USA).

5
SUPPORT ON SITE
Training of the installation team and technical support in the field, wherever the project is.

02 THE HYDROTEX® FAMILY

Product	Thicknesses (mm)	Features	Typical applications
Filter Point	55 – 300	PERMEABLE · FLEXIBLE · CUSTOMISABLE Interlaced permeable drains; paver-type surface; hydrostatic pressure relief.	Lining of channels and watercourses, ditches, slope and pipeline protection. **75,000 m² in Abu Dhabi.**
Articulated Block	75 – 610	PERMEABLE · ARTICULATED · CUSTOMISABLE Blocks interconnected with high-strength cables; it articulates and follows the ground.	Bridge abutments and piers, scour protection, shorelines, channels, slopes. **The choice at Pilar.**
Uniform Section	50 – 400	IMPERMEABLE · FLEXIBLE · CUSTOMISABLE Constant section, low Manning's n: optimum flow velocities.	Cooling channels, ponds, drains and impermeable linings.
Enviromat	65 – 100	VEGETATION · PERMEABLE · CUSTOMISABLE ~20% of the area left unfilled; full seeding with hydraulic mulch and a turf reinforcement mat under the mattress.	Green lining of channels and watercourses, slope protection.
Enviromat FX	25	MAXIMUM VEGETATION · PERMEABLE · CUSTOMISABLE ~30% of the area for vegetation; cast in situ or precast and lifted.	Ditches, outfalls, marine works with environmental requirements.
Filter Band	100	MAX. PERMEABILITY · FLEXIBLE · CUSTOMISABLE Drainage in alternating bands; high Manning's n: it reduces velocity and wave action.	Channels, watercourses and slopes with strong pressure relief.

Hydrocast®

Custom shapes — cubes, rectangles, curves — that when pumped create three-dimensional structures of unique volume, with self-sealing valves and the option of steel cables, straps or filling ports. Pipe plugs, anti-scour aprons and tunnel closures, on land or under the sea.

MADE TO MEASURE

Concrete bags

What concrete bags are for: to replace sandbags with far greater strength. A double woven layer made to measure in thickness, weight and configuration; fastening straps, cut-outs around obstructions and optional reinforcing cables.

MADE TO MEASURE

Pipeline lining

Armouring and reinforcement of gas, oil and water pipelines on land, buried or on the sea bed — lengths and diameters to measure, an economically proven solution.

MADE TO MEASURE

Pile jackets

Repair and protection of steel, concrete or timber piles on bridges and ports; lengths and diameters to measure, with no standard-diameter restriction.

MADE TO MEASURE

INDUSTRIES

Hydraulic and river works · Bridges and piers · Ports and bays · Roads and airports · Landfills · Mining · Locks and dams · Water treatment · Oil and gas

MANUFACTURER'S BACKING

Synthetex® (Atlanta, USA) — founded by a geosynthetics pioneer with 11 patents. Designer and manufacturer of the product: single-source value, with up to 4 weeks of training on site.