Geosynthetics are used for countless applications including: to strengthen existing ground, improve its bearing capacity, make highways last longer, support embankments, stop landfill leachates contaminating the ground and limit erosion.

With defined technical characteristics and performance properties, geosynthetics are replacing the use of natural materials within construction. They are proven to reduce project cost and environmental impact compared with traditional construction methods.

INTRODUCTION: GEOSYNTHETICS WORLD

With 140 years of history, 3000 employees, over 30 manufacturing facilities and local operations in 100 countries around the world, Maccaferri can truly claim to have a global presence with local focus.

The knowledge and capability to easily combine products and solutions enables Maccaferri to offer clients tailored solutions, optimising value and reducing project cost.

Maccaferri works with its clients to develop, manufacture, design and construct solutions for the construction industry.

Our geosynthetics products can be used to fulfill the following main functions:

- Reinforcement
- Stabilisation and Asphalt Reinforcement
- Drainage
- Separation, Filtration and Protection
- Barrier Systems
- Erosion Protection

Every soil is a challenge. We’ll always take it on.
REINFORCEMENT

For over 30 years, geogrids have reinforced and strengthened soils, enabling the soil to perform better than it would in its unreinforced state, accommodating greater loads, standing at steeper angles and reducing settlement.

Slopes and Walls
Maccaferri has a wide range of geogrids (with a variety of polymers, configurations and strengths) to maximise the opportunity to reuse site won material as backfill to reinforced soil walls and slopes.

Cost savings and “carbon footprint” reductions through the use of geogrids can be substantial when compared to traditional solutions. Additional improvements can be realised through re-using site won material as structural backfill, saving the transportation of materials to and from the project site, embracing sustainability and reducing polluting truck movements.

Whether geogrids are used for small retaining walls in housing developments, or reinforced soil megastucture on infrastructure projects, Maccaferri offers cost-effective, value engineered scalable solutions.

Basal reinforcement and void spanning
In use since 1977 and with strengths up to 1350 kN/m, Maccaferri’s Paralink® provides performance and reassurance in the most demanding applications; embankments over piles or on soils subject to voids.

For less demanding soil reinforcement applications, the woven composite, Mac Tex® C2, or woven polyester Mac Tex® W2, offer performance with value.

For heavy cohesive soils the Mac Tex® C2 + C2S range offer a good solution.

“ParaLink and ParaGrid are amongst the most tried and tested geogrids in the world offering 120 year design life and high performance.”
Whether you are constructing a railway track-bed, gravel forestry track over soft soil, or resurfacing a multi-lane highway carrying many thousands of vehicles per day, we have the technical knowledge to improve rail track, road and asphalt pavement performance.

Maccaferri geogrids are used to extend the life of unbound and asphalt pavements; MacGrid® AR is a specific composite geogrid used to reduce reflective cracking within asphalt pavements and overlays. MacGrid® EG or MacGrid® WG S biaxial geogrids are used (often in combination with Mac Tex® geotextiles) to strengthen unbound pavements, reducing rutting and the thickness of granular material required.

Excess, or uncontrolled water within soils can weaken them, causing numerous problems. The management of water behind retaining walls and civil engineering structures, beneath highways, inside tunnels and in environmental capping solutions, is one of the most important aspects influencing the long term performance of that structure.

The MacDrain® range are geo-composites for drainage, manufactured with a rigid or flexible polymeric core, providing a free conduit for water and fluid flow from the adjacent materials. Geotextiles, or geomembranes, bonded to one or both sides of the core ensure filtration, separation, waterproofing and protection of the core.

With lab-tested performance and quality controlled manufacturing, MacDrain® can replace traditional gravel drainage, offering faster installation, quantifiable performance and construction cost savings. Additionally, the reduction of gravel extraction and truck movements to and from the project site, serve to reduce project environmental impact.
Our geotextile are currently used in many geotechnical and hydraulic engineering applications.

MacTex® geotextiles are used to replace the traditional methods of:

- Separating and filtering two distinct soils or layers and preventing cross-contamination
- Protecting membranes or other vulnerable structures
- Improving the bearing capacity of weak soils

The wide range of products is augmented by Maccaferri’s capability to develop and manufacture specific textiles to suit individual projects.

In dewatering, industrial or contaminated slurries can be pumped into the MacTube®. Once the slurry has dried, it can be disposed of far more safely and cost effectively, than wet slurred material.

Geomembranes are used to prevent the migration of fluids from one location to another; for example, lining landfills to stop leachate polluting groundwater, controlling groundwater entering tunnels or creating attenuation ponds within developments.

Maccaferri MacLine® geomembranes and geosynthetic clay liners are available in a variety of thicknesses and compositions to suit applications such as mining heap leach pads, settlement basins, landfill, tunnels and many other specialist applications.

MacLine® products are often used in conjunction with MacDrain® geocomposites and MacTex® geotextiles providing a complete solution to capture, contain and drain fluids.

MacMat® R, MacGrid® T or MacWeb™ can be used to secure a layer of topsoil on the membrane, facilitating revegetation.
EROSION PROTECTION

All natural slopes and surfaces are subject to continuous erosion forces. To limit expensive land-loss, Maccaferri offers a range of erosion protection systems to suit the severity of erosion expected. Relying upon vegetation growth alone is very unpredictable and unreliable as it is difficult to achieve 100% vegetation coverage, leaving vulnerable exposed areas. Furthermore, vegetation can die back or become diseased, reducing the anticipated erosion control capability.

MacMat® and MacMat® R (reinforced), three-dimensional permanent erosion control mats increase the soil’s resistance to erosion. They provide immediate protection of exposed topsoil areas from the direct effects of wind, rainfall impact or water flow regardless of the amount of vegetation established. Additionally MacMat® R and MacGrid® T are used to reinforce soil veneers over low-friction surfaces and also in conjunction with soil nails on strengthened slopes.

In other situations, MacWeb® geocells in conjunction with other materials can promote slope revegetation.

Coastal Protection
MacTube® and MacLedge®, fabricated from quality geotextiles are geosynthetic systems, used as a component in a variety of marine, hydraulic engineering, coastal protection and dewatering applications. Filled in-situ with a pumped slurry, the water drains through the fabric walls, leaving the residue within the MacTube®. In coastal and hydraulic works, the filled tubes are then used to construct breakwaters, dykes or for dune reconstruction.

At Maccaferri we do not simply sell products: we provide better solutions — identifying, addressing and responding to the specific needs of each client. Maccaferri is a partner who works alongside clients from the start of the project, maximising value for money through technical expertise and an extensive portfolio of quality products. High quality products are only part of the solution; design and selection of a solution that meets the clients requirements are equally important. Maccaferri’s software uses the latest modelling techniques, in accordance with various design methodologies to design robust, cost effective solutions.

Quality Control
Maccaferri’s geosynthetics are manufactured under quality controlled conditions and where appropriate, are not only CE marked but also tested and certified by third party authority as BBA (UK) and NTPEP (USA). This provides client reassurance that the product has been tried and rigorously tested before installation within the project.

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M

Engineering a Better Solution

Maccferri’s motto is ‘Engineering a Better Solution’. We do not merely supply products, but work in partnership with our clients, offering technical expertise to deliver versatile, cost effective and environmentally sound solutions. We aim to build mutually beneficial relationships with clients through the quality of our service and solutions.

OFFICINE MACCAFERRI GROUP PROFILE

Founded in 1879, Officine Maccaferri soon became a technical reference in the design and development of solutions for hydraulic works and retaining structures.

Since then, through technological innovation, geographical expansion and focussed diversification, Maccaferri now offers solutions at a global level for a wide range of civil, geotechnical and environmental engineering applications.

ORGANISATIONAL STRUCTURE

Officine Maccaferri is at the heart of the Maccferri Industrial Group, a corporation with revenues of €1.2B, operating in mechanical engineering, real estate & construction, energy, food & agro-industry and tobacco.

Officine Maccaferri is a leading international provider of advanced solutions to the civil engineering and construction market. With nearly 3000 employees, over 30 manufacturing facilities and local operations in 100 countries around the world, Maccaferri can truly claim to have a global presence with local focus.

MACCAFERRI APPLICATIONS

- RETAINING WALLS & SOIL REINFORCEMENT
- HYDRAULIC WORKS
- ROCKFALL PROTECTION & SNOW BARRIERS
- EROSION CONTROL
- SOIL STABILIZATION & PAVEMENTS
- BASAL REINFORCEMENT
- COASTAL PROTECTION, MARINE STRUCTURES & PIPELINE PROTECTION
- ENVIRONMENT, DEWATERING & LANDFILLS
- DRAINAGE OF STRUCTURES
- TUNNELLING®
- LANDSCAPE & ARCHITECTURE
- SAFETY & NOISE BARRIERS
- FENCING & WIRE
- AQUACULTURE NETS/CAGES
- CONCRETE FLOORING, PRECAST & OTHER USES®