Officine Maccaferri Group Profile

Founded in 1875, Officine Maccaferri soon became a technical reference in the design and development of solutions for civil engineering and mining projects.

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

Consultancy and Partnership

We are ready to supply products, but work in partnership with our clients, offering technical expertise to design and develop cost-effective and environmentally sound solutions, and to develop mutually beneficial relationships with clients through the quality of our service and solutions.

Organizational Structure

Officine Maccaferri is at the heart of the Maccaferri Industrial Group, its continual growth is based upon long-term values of innovation, integrity, excellent service and respect for the environment. Maccaferri’s vision is to become a leading international provider of advanced solutions to the civil engineering and construction market, implementing a strategy of vertical integration. Maccaferri manufactures, designs, supplies and markets solutions within its target markets.

The capability of the business continues to expand due to a strategy plan to open new markets and grow existing ones. Maccaferri now offers advanced engineered solutions from beach reinforcement to reinforced cell structures and from rockfall mitigation to tunneling systems. With over 2000 employees, 25 manufacturing facilities and local operations in 100 countries around the world, Maccaferri can truly claim to have a global presence with local focus.

Quality Control

Maccaferri’s geosynthetics are manufactured under quality-certified conditions and where appropriate, are CE Marked. This provides client reassurance that the product has been tried and rigorously tested before installation within the project.

Software

Highquality products are only part of the solution: design and selection of a solution that meets the clients’ requirements is equally important.

Maccaferri's software uses the latest modeling techniques, in accordance with various design methodologies to design robust, cost-effective solutions.

- MacFLOW: Design of drainage systems using MikeCrown for vertical, flat and sloped applications.
- MacRA 1 & 2: Design of sheeted lives and drop structures for hydraulic erosion protection works.
- MacBARS: Design of bored platforms and piled embankments.
- MacSTARs: Design of reinforced soil slopes and walls using full range of geogrids and soil nails.
- MacREAD & CLICRACK: Design of paved and unpaved reinforced roads.
- Landfills: Design of landfill stability over databases, damage capacity and FOS-CCS equivalent.

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Geosynthetics

Geosynthetics are becoming commonplace within the construction markets. They 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.

Innovation and development has generated many product types; there is a significant difference in the performance of a simple geotextile to separate two construction materials and a high technology geogrid designed to support a railway embankment within a seismic zone. Clients should be aware of and select, solutions and products that are appropriate for their specific site conditions.

Maccaferri has over 30 years’ experience in the manufacture and supply of geosynthetics, and nearly 140 years with its world renown traditional products. The knowledge and capability to easily combine these products and solutions enables Maccaferri to offer clients tailored solutions, optimizing value and reducing project cost.

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

For over 30 years, geogrids have reinforced and strengthened soils, enabling the soil to perform better than it would in its un-reinforced 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 materials 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 mega-structures 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, MacTex® C2, or woven polyester MacTex® W2, offer performance with value.

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**Stabilization**

**Soil stabilization and asphalt reinforcement**

Maccaferri geogrids are also 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 MacTex® geotextiles) to strengthen unbound pavements, reducing rutting and the thickness of granular material required.
Function

Drainage

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 or within slopes, 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.

Function

Separation/Filtration/Protection

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 slurried material.
Function Barrier Systems

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 lagoons, landfills, 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 re-vegetation.

Available landfill volumes can be increased by using MacLine in place of traditional compacted clay and Maccaferri geogrids to make cell walls steeper.
As geosynthetics are used in so many geotechnical and civil engineering applications, it is not possible to consider them all here. The table below indicates principle functions and uses. Please contact your local Maccaferri office for advice or assistance in these, or any other use of geosynthetics.

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Coastal Protection

MacTubular® and MacBag®, fabricated from quality geotextiles in geocomposite systems, used as a component in a variety of marine, hydraulic engineering, coastal protection and dewatering applications.

Fitted in-situ with a pumped slurry, the water drains through the fabric walls, leaving the mixture within the MacTubular®. In created and hydraulic works, the filled tubes are then used to construct breakwaters, piers or for dune reconstruction.