

Maccaferri Erosion Protection

Erosion of soil from embankments and channels becomes critical when it results in damage to infrastructure or leads to the pollution of watercourses. Relying on vegetation growth alone to provide surface protection is unreliable as it is difficult to achieve 100% vegetation coverage, leaving exposed areas vulnerable to erosion.

Maccaferri MacMat®R is a three dimensional, permanent geomat that provides surface reinforcement, stops erosion and promotes revegetation.

An integral steel mesh reinforces the geomat, significantly increasing the tensile strength of the mat, enhancing its erosion protection and shear resistance capacity when compared to unreinforced erosion protection mats.

MacMat® R consists of a matrix of UV stabilised polymer fibres, extruded onto PVC coated and galvanised steel mesh during the manufacturing process, to form a unique, one-piece mat for easy installation.

Performance reliability

As vegetation alone cannot offer long-term reliability, its performance should not be relied upon in designs. In contrast, the engineered characteristics of **MacMat® R** enables designers to be confident in their erosion protection solutions.

Vegetation establishment

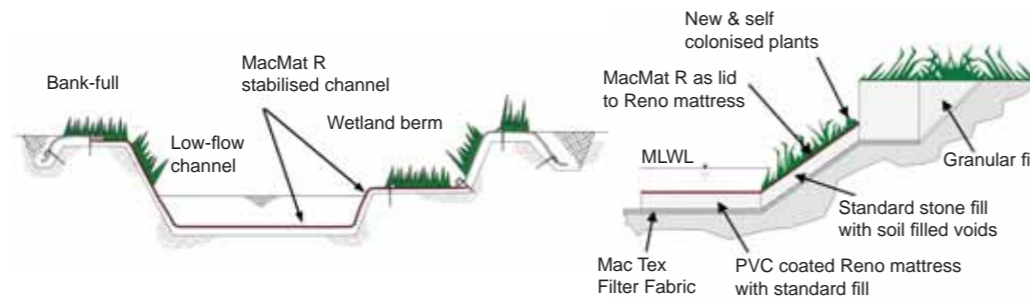
MacMat® R is plant friendly. It physically protects vulnerable soil surfaces, reducing erosion and encouraging vegetation establishment. **MacMat® R** easily accepts hydroseeding and shrub planting where more rapid colonisation is required.

Low wastage

Unlike un-reinforced geomats, adjacent panels of **MacMat® R** do not need to be overlapped. The integral steel mesh means panels can be 'butt-jointed' together using fixing rings or lacing wire.

MacMat® R uses:

- Erosion control & channel lining
- Surface reinforcement with soil nailing
- Lids for Gabions & Reno Mattresses
- Reinforcing vegetation and root systems



Maccaferri MacMat® R Benefits

- **Steel mesh reinforcement increases erosion protection & shear resistance**
- **BBA Certified reinforcing mesh allows reduced fixing frequency**
- **Provides immediate erosion protection of exposed areas**
- **Spreads loads between soil-nail heads in slope stabilisation**

Slope reinforcement with soil nails

MacMat® R is used extensively on soil nailed slopes, especially within the rail and highway sectors. The soil nails reinforce the overall slope and the **MacMat® R** stabilises the slope surface. Any forces from local surface slip failures are transferred back to the nail heads.

Channel Linings

MacMat® R is regularly used to line channels and protect canal and channel banks from erosion by water flow. The strength of the mesh reduces the geomat 'lifting' when exposed to **aggressive hydraulic flows**. Stresses generated at the anchor points are dissipated by the reinforcing mesh.

Once installed, the channel is immediately stable and vegetation can colonise the channel again (see picture below)

Other uses

Gabion and Reno mattress lids

Permanent high performance erosion control is often provided by gabions and Reno mattresses. By replacing their mesh lids with **MacMat® R**, silt and seeds within the channel flow become trapped within the 3D geomat, rapidly establishing vegetation.

As the PVC coated steel mesh reinforcement within **MacMat® R** is the same as that used in our gabions and mattresses it can be laced to the structure beneath with confidence.

MacMat® R Technical Data

Geomat Type	A 3D geomat of entangled UV stabilised polypropylene monofilaments, heat bonded at contact points with void space >90%.		
Mesh Type	Double twist hexagonal woven mesh, 60 x 80mm aperture. 2.2mm wire dia. (3.2mm dia including PVC coating). Selvedge wire = 2.7mm dia (3.7mm o/a) to BS EN 10218-2 & BS EN 10223-3		
Corrosion Type	Galfan (95% Zn, 5% Al Alloy + Mischmetals) coating to BS EN 10244-2 Class A with an extruded grey PVC coating of mean wall thickness of 0.5mm		
BBA Approval	Maccaferri hexagonal wire mesh is BBA certified for up to 120 year design life. Agrément Certificate No. 95/3141		
Connection	All joints and connections shall be formed with continuous 2.2mm PVC Galfan coated lacing wire and/ or high tensile 3mm diameter Stainless Steel 'C' rings.		
Nominal Thickness (at 2 kPa)	12mm	Tensile Strength	35kN/m – Machine Direction
Roll Size	2m x 25m	Roll Weight	98 kg
Mass per m2	1,970 g/m2	Density	900 kg/m3



MacMat®R

Charleston Road, Halifax

MacMat®R and Soil Nailing

MacMat®R on A48

River Usk - under construction

River Usk - some years later

Erosion

Officine Maccaferri Group Profile

Founded in 1879, **Officine Maccaferri** soon became a technical reference in the design and development of solutions for erosion control 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 and environmental engineering** applications.

Consultancy and Partnership

Maccaferri'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**.

Organisational Structure

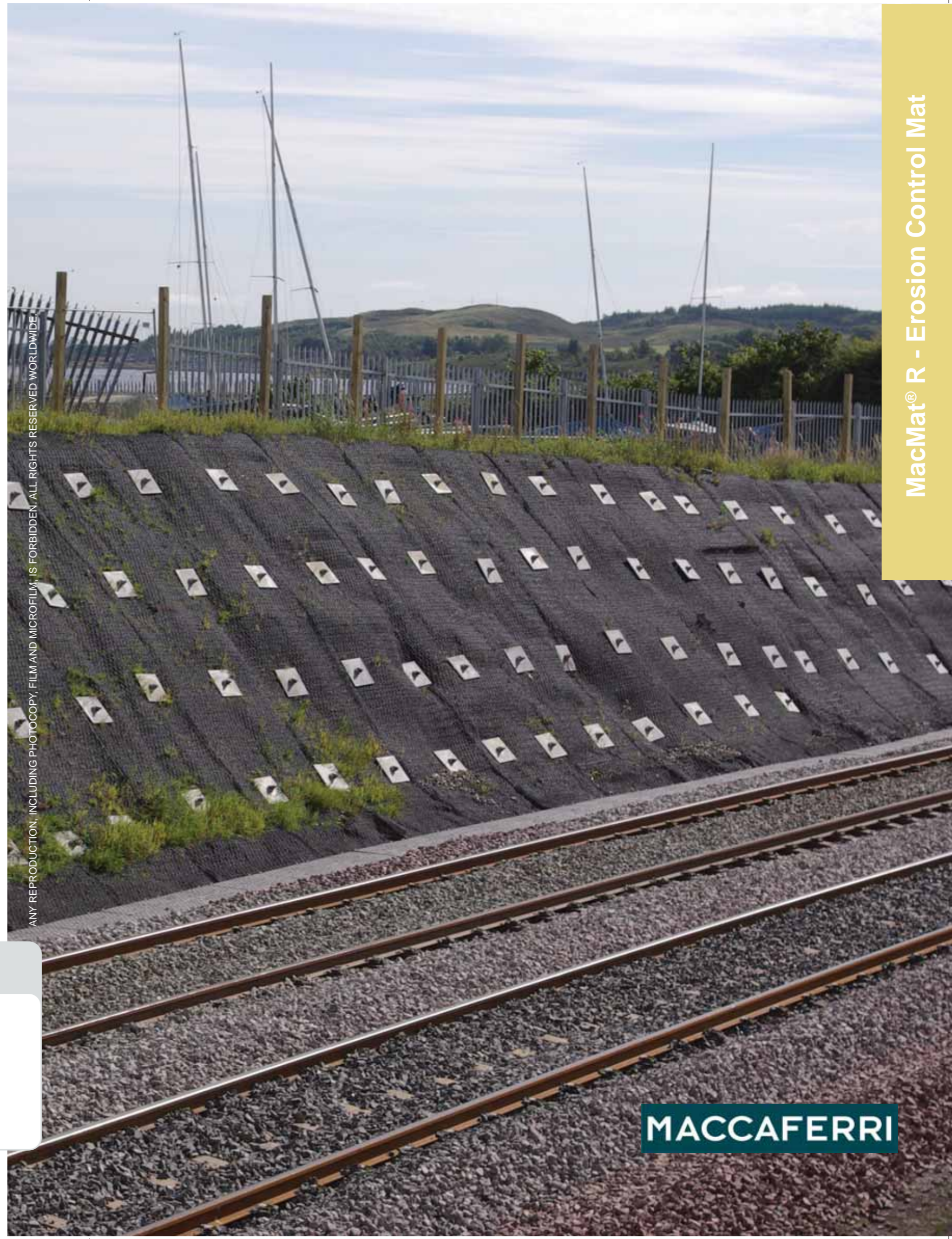
Officine Maccaferri is at the heart of the Maccaferri Industrial Group. Its continued growth is based upon long-held values of innovation, integrity, excellent service and respect for the environment.

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 researches, manufactures, designs, supplies and constructs solutions within its target markets.

The capability of the business continues to expand due to a strategic plan to open new markets and grow existing ones; Maccaferri now offers advanced engineered solutions from **coastal protection to reinforced soil structures** and from **rockfall mitigation to tunnelling systems**.

With over 2000 employees, 26 manufacturing facilities and local operations in 100 countries around the world, Maccaferri can truly claim to have a global presence with local focus.

Maccaferri: Engineering a Better Solution



ANY REPRODUCTION, INCLUDING PHOTOCOPY, FILM AND MICROFILM, IS FORBIDDEN. ALL RIGHTS RESERVED WORLDWIDE.

MacMat® R - Erosion Control Mat

CERTICOM TSUS Certified Quality System Company



MACCAFERRI



MACCAFERRI CENTRAL EUROPE s.r.o.
 Štverník 662
 906 13 Brezová pod Bradlom, Slovakia
 Tel.: +421 34 69 466 17
 Fax: +421 34 69 466 29
 office@maccaferri.sk
 www.maccaferri.sk

Commercial & Technical Office:
 Kopčianska 15
 851 01 Bratislava, Slovakia
 Tel.: +421 2 20 24 00 56
 Fax: +421 2 20 24 00 60
 office@maccaferri.sk
 www.maccaferri.sk