



Base Reinforcement & Soft Soil Stabilization
S o l u t i o n s

MacGrid™ EG Series

MACCAFERRI

The Problem: Why Reinforced Soil?

Soils are engineering materials. Due to increasing demand for land available for development, construction may encounter problematic soils.

All soils, whether cohesive or granular, have poor resistance to tensile stresses. Under such loads, soils are prone to movement, and potential failure.

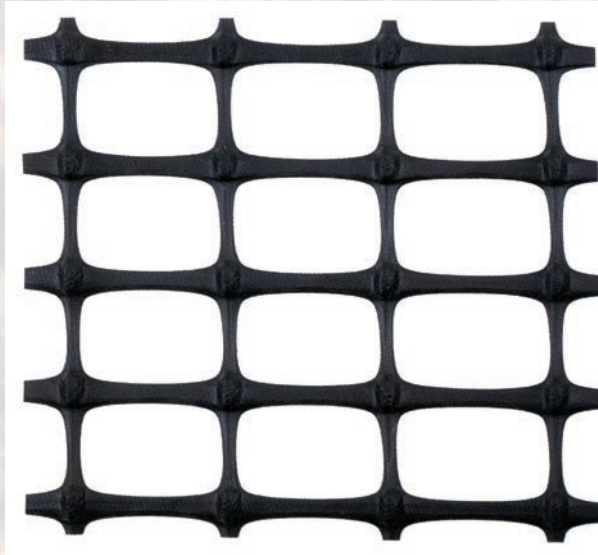
Instead of replacing those soils with more competent materials, reinforcing geogrids can be used. Significant improvements in soil strength are realized when a geogrid, appropriate for the prevailing conditions, is incorporated into the soil. This reduces the financial and environmental

cost, through less imported fill, fewer truck movements and less aggregate extraction.

For a geogrid to be most effective, and develop its full reinforcing function, it must satisfy the following:

1. The geogrid must have the required design tensile strength, modulus, and characteristics shown in Table 1.

2. The geogrid and fill material must have sufficient stress transfer mechanisms so that the reinforcing capabilities of the geogrid are mobilized.



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MacGrid™ EG

OFFERS...

HIGH TENSILE STRENGTH

MacGrid™ EG is designed to provide the high tensile strength required in soil stabilization and base reinforcement applications, in both machine and transverse roll directions.

HIGH JUNCTION STRENGTH

MacGrid™ EG has high junction strength to ensure proper distribution of imposed stresses throughout the entire geogrid structure.

HIGH MECHANICAL INTERLOCK

MacGrid™ EG provides exceptional mechanical interlock with a wide range of soil classifications.

HIGH TENSILE MODULUS

MacGrid™ EG has high tensile modulus, providing tensile reinforcement with low elongation.

HIGH RESISTANCE

Manufactured from select polypropylene, MacGrid™ EG has high resistance to chemicals found in most soil environments.

The Solution: MacGrid™ EG Series for Reinforcement



for future construction.

Situations that would benefit from the use of MacGrid™ EG include:

- an embankment over a weak subgrade;**
- base reinforcement of a paved or unpaved road.**

The MacGrid™ Series geogrids with rigid ribs and junctions provide considerable confining action, and are particularly suitable for reinforcing a wide variety of soils. These biaxial geogrids, with characteristics such as strength, high modulus, chemical-biological and U.V. resistance, and low

vulnerability to construction damage, are a cost effective solution to soft ground applications. The MacGrid™ EG geogrids have been engineered to provide strength in both directions, and can be used for reinforcement of small slopes and as secondary

Maccaferri MacGrid™ EG Series provides interaction with different types of soils and fill material, especially granular soils. The actual benefits realized through the use of geogrids, depend on the type of soil being used with the geogrid.



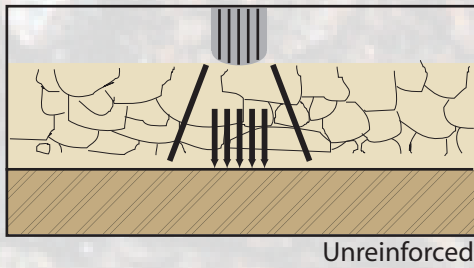
The installation of MacGrid™ EG helps to improve the load bearing capacity of existing soils, creating more predictable stabilization conditions

reinforcement in retaining wall structures.

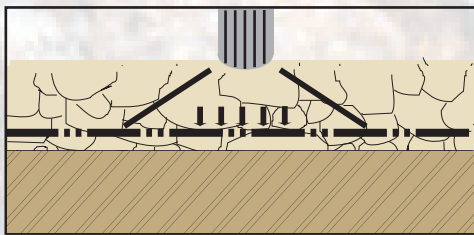


Applications

UNPAVED ROADS



Unreinforced

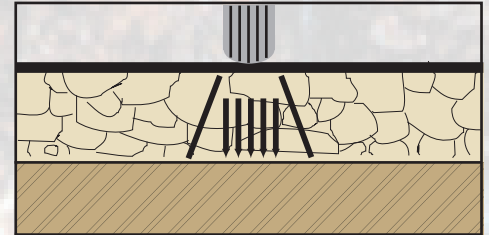


Reinforced with MacGrid™ EG

Maccaferri MacGrid™ Series distribute applied loads over a greater area reducing vertical pressure on the subgrade. This offers a longer design life compared with a similar unreinforced section. If designing for a specific lifetime, this allows for significant reductions in base course thickness.

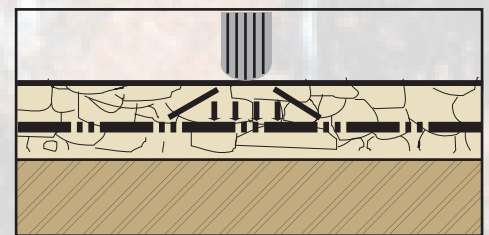
In base reinforcement applications such as paved or unpaved roads, MacGrid™ EG is used to provide

PAVED ROADS



Unreinforced

Dimension B < A



Reinforced with MacGrid™ EG

reinforcement and confinement to base course materials. Typically, the material used in base reinforcement is an expensive, quality granular material with specific structural characteristics. By incorporating MacGrid™ EG geogrids, the required thickness of the granular structural layer can be reduced, translating into cost savings.

With MacGrid™ EG an effective stress transfer mechanism between geogrids and the surrounding

soils is established and applied loads are distributed over a wider area.

Even greater design life and improvement in pavement characteristics can be achieved by also incorporating Maccaferri Road Mesh®. This "steel paving mesh" would typically be installed within the bituminous layers.

Table 1

Maccaferri MacGrid™ EG is composed of high strength extruded polypropylene geogrids manufactured from a unique process of extrusion and bi-axial orientation										
Mechanical Properties	Test Method	Unit	20S		25S		30S		40S	
			MD	TD	MD	TD	MD	TD	MD	TD
Ultimate Tensile strength		kN/m	20	20	25	25	30	30	40	40
Tensile strength at 2% strain	ASTM D6637	kN/m	7	7	9	9	10.5	10.5	14	14
Tensile strength at 5% strain	ASTM D6637	kN/m	14	14	17	17	21	21	28	28
Strain @ ultimate strength	ASTM D6637	%	13	10	13	10	13	10	13	10
Junction Efficiency	GRI GG2	%	93	93	93	93	93	93	93	93
Roll Length		m	50							
Roll Width		m	3.95							
Roll Weight		kg	50		64		72		105	

For further information or assistance on this or any other Maccaferri product, do not hesitate to contact us.

MACCAFERRI

MACCAFERRI CANADA LTD.

400 Collier MacMillan Dr.
Cambridge, Ontario, N1R 7H7
Tel: (519) 623-9990
Toll-Free: 1-800-668-9396
Fax: (519) 623-1309
email: info@maccaferri.ca
website: www.maccaferri.ca

Area Offices:

Vancouver, B.C. (604) 683-4824
Edmonton, AB (780) 447-2719
Montreal, QC (450) 674-6800
Halifax, NS (902) 468-8615