

EarthTec International Modular Block (MB) Wall System



 **EARTHTEC**



Our History

EarthTec International has been involved in the design and supply of innovative MSE and Modular Block systems in Europe and the USA for over 20 years and in the Middle East and Africa for over 15 years. We offer a range of high quality systems and deliver solutions to the Client on either a design and supply or design and construct basis to suit the relevant resources and project needs. Our structures are typically designed and detailed to meet either the AASHTO LRFD or BS8006 codes of practice and we carry a British Board of Agrément Certificate for our MSE products.

Our systems have been successfully applied to the full range of engineering challenges, including highway structures exceeding 18m in height. Applying a combination of design and construction expertise, we employ our proven systems to deliver solutions that best meet the Client specific project challenges. Some of the structures we deliver include:

- Embankments
- Cut Walls and Mixed Cut & Fill Structures
- Bridge Abutments
- Below Grade / Pressure Relief Walls
- Temporary MSE & MB Structures
- Industrial & Mining Structures
- River and Marine Walls
- Green Walls and Steep Slopes

Whether located in conventional or chemically aggressive soil conditions, our innovative solutions offer cost-effective options to meet a variety of challenging site conditions and performance criteria.



Our MB Wall System

The EarthTrac MB Wall is a retaining wall system for which the face of the wall is made from Geoblock concrete blocks combined with geosynthetic grid reinforcing the earth. The blocks constitute an integral part of the system and form the modular block structure when used in combination with uniaxial polyethylene geogrid and polyethylene connectors (T-clip).

Elements of the System

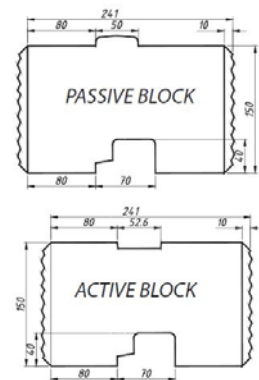
1. Blocks

There are two types of block in the EarthTrac MB Wall System:

- Wall blocks (active & passive)
- Blocks crowning the wall

Wall blocks are available in two types – active and passive. At the top part of an active block, a connector connecting the geogrid with the block is placed every few layers of passive blocks. The number of active layers depends on the number of layers of geogrids.

The retaining wall is finished at the top with a crowning precast element, a monolithic cover or a concrete rim.



Block properties		
Concrete	Absorbability	Frost resistance
min. C25/C30	≤ 5%	F150

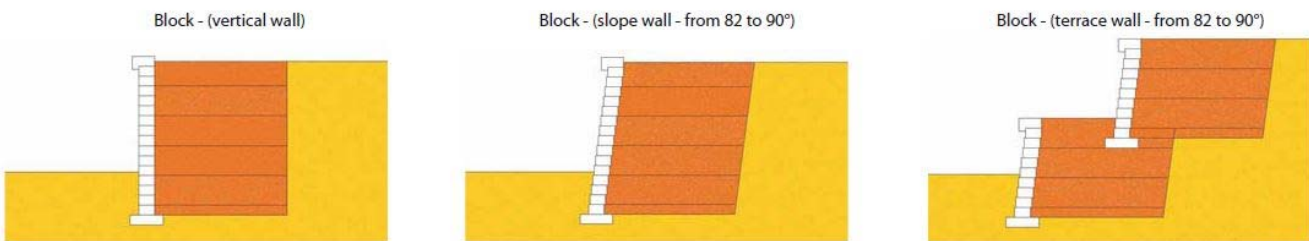


Fig.1 Examples of Block solutions

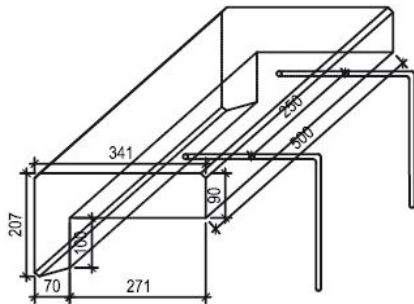


View of the wall the side of backfill



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The crowning element is fastened to a concrete top section using anchors (10mm dia. Reinforcing bar). Dimensions of the EarthTrac MB System are presented in the figure below:



2. Geogrid

The element that reinforces the soil behind the wall is a uniaxial polyethylene geogrid supplied by TENGRID. The properties of the geogrid are given in the table below:

Properties of TENGRID uniaxial geogrid TU							
			TU45	TU60	TU90	TU100	TU120
Mechanical Properties	Testing Method		Requirements				
Tensile strength	EN ISO 10319	kN/m	45	60	90	100	120
Relative elongation at maximum load	EN ISO 10319	%	11.5	13	13	13	13
Tensile force at relative elongation of 2%	EN ISO 10319	kN/m	11	17	26	36	45
Tensile force at relative elongation of 2%	EN ISO 10319	kN/m	25	32	50	72	90
Junction (node) strength	GRI-GG2	kN/m	36	50	80	110	130



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2. Additional Elements

Polythene connector (T-Clip) for connecting blocks with the geogrid; the connector has specifically designed shaped and therefore it should not be replaced with other elements.

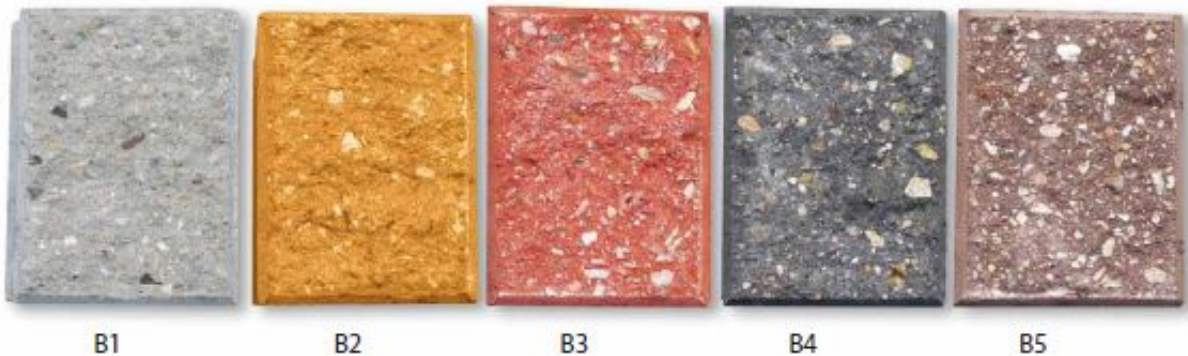
Bodkins (HDPE Rods – 6x40x1050mm) are used to transversely connect two geogrids.



Advantages of using the EarthTrac MB System

- Low cost of building a retaining wall
- Quick and easy installation
- Possibility of forming walls with various shapes (concave and convex)
- Possibility of making blocks of different colours.

Currently available colours



Sample of Our Projects



Anchorage Alaska: 3,500m² of modular block retaining wall for a rail road embankment. Maximum wall height 5m.

Salt Lake City Utah: 25,000m² of modular block retaining wall as part of UTA commuter rail lines extension. Maximum wall height 9m.



Seattle WA: 3,000m² of modular block retaining wall as part of new road interchange. Maximum wall height 8m.

Spokane WA: 2,500m² of modular block retaining walls as part of new interstate extension in association with arch structure. Maximum wall height 7m.



Our Presence



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