

MACCAFERRI

GEOSYNTHETICS



Rapid
• Economical
• Modular

• Versatile
• Green
• Innovative

System Components

Maccaferri MacWall

The **MacWall** system consists of 4 structural elements designed for easy installation and flexible use:

- the high mechanical strength modular split face concrete block,
- the connecting bar and polymeric positioning element,
- the low deformation, high strength polyester biaxial Paragrid Geogrids protected by a sturdy polyethylene coating (LLDPE) available with longitudinal strength ranging from 30 to 200 kN/m,
- the Mac Pipe high capacity flexible drainage system.



Connecting System

Geogrids are anchored to the face using mechanical friction by means of a modular winged-profile polymeric bar allowing continuous connection. The geogrids are simply wrapped around the bars and the assembly is then placed in the special groove made in the individual blocks at the production stage.

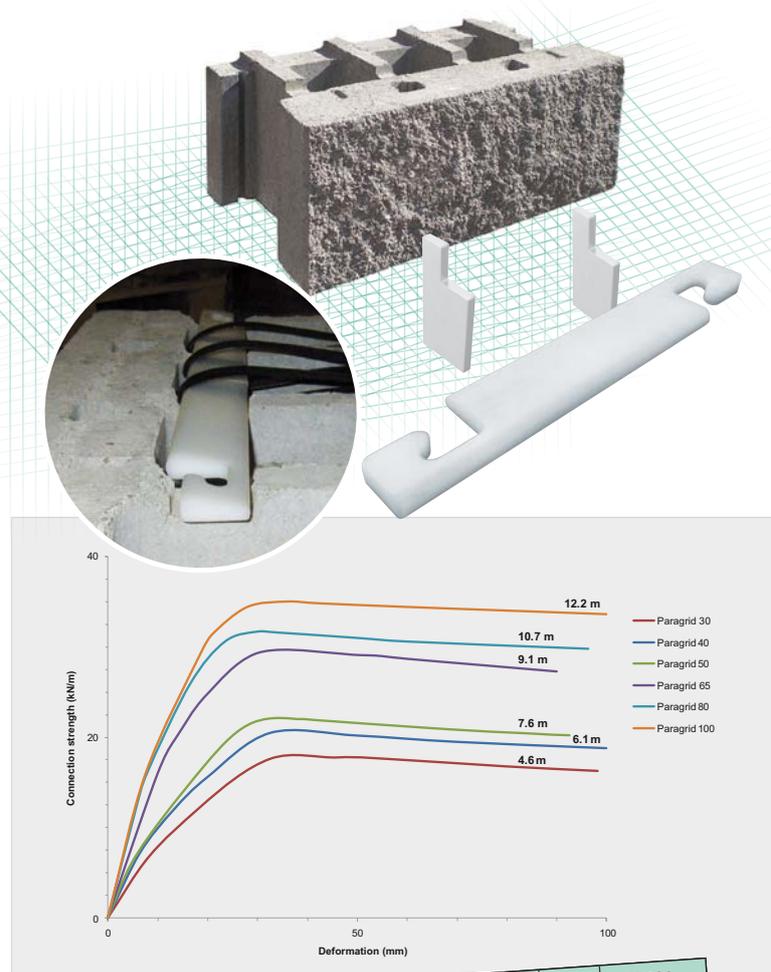
Analysis of the results of connecting tests carried out by qualified international laboratories allowed the definition of the cross-section and shape of the friction element, optimising its load distribution and mechanical-chemical properties, measuring its effectiveness in terms of the grid designed resistance load percentage.



The innovative MacWall system was invented to cater for the increasing demand for high-tech containment structures and retaining walls with reduced labour costs and fast construction times. The high level of design flexibility and in-depth analysis of the various components produced a rapid, economical, modular, versatile, green and innovative system

Block Features

- The block produced in accordance with Category 1 CE marking requirements, with 2+ certification, is made of selected raw materials in cutting edge plants and subjected to strict quality controls, guaranteeing:
 - resistance to exhaust gases and sodium chloride,
 - sound absorbing capacity able to reduce reflected energy and acoustic impact,
 - resistance to frost and thawing,
 - possibility of using lightweight concrete,
 - easy handling and positioning of blocks, whether manually or using dedicated powered lifting equipment, with the possibility of laying blocks vertically or with limited offsets to obtain a face with an 86° angle,
 - wall closing caps supplied,
 - wide range of colours for perfect blending with the surroundings or for mixed-colour architectural decorative effects. System advantages.



Advantages of System

The MacWall incremental modular block wall system outperforms the traditional reinforced concrete structure because it guarantees:

- construction costs 30 to 60% lower, thanks to its practical, rapid construction,
- easy construction even without mechanical equipment and using unskilled labour,
- attractive appearance and high level of customisation possible,
- durability of all components, giving a project working life of up to 120 years even in chemically aggressive soils,
- dedicated calculation Software both for internal and global stability checks.

PARAGRID		30/05	40/05	50/05	65/05	80/05	100/05	WALL HEIGHT
Connection efficiency (%) vs long term tensile strength (100y, 20°C) MD, for a fill with apparent opening size $D_{90} = 23$ mm	TC	64%	53%					25 kPa <2.5 m
	TD	78%	64%					
	TC	68%	59%					50 kPa up to 2.5 m
	TD	82%	72%					
	TC	75%	67%	56%				70 kPa up to 3.5 m
	TD	90%	81%	68%				
	TC		68%	60%	58%			90 kPa up to 4.5 m
	TD		82%	73%	71%			
	TC				63%	55%	49%	110 kPa >6 m
	TD				76%	63%	55%	

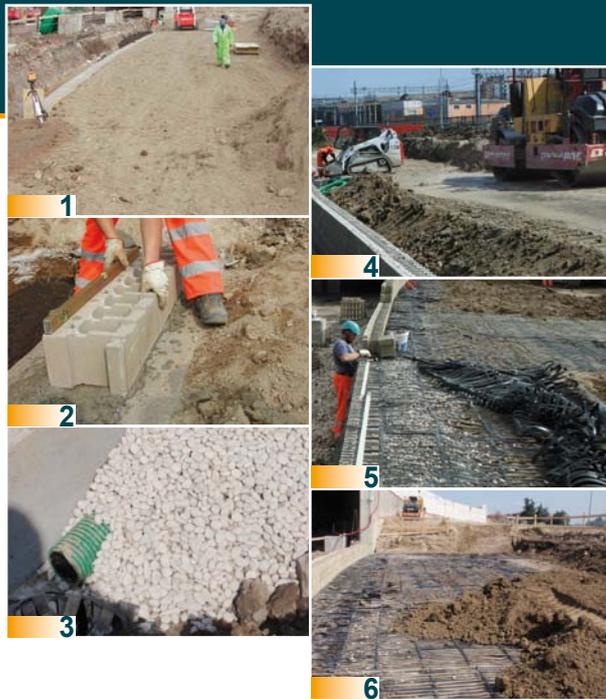




MacWall System

6-step MacWall System

- 1 excavation and foundations
- 2 positioning the first row of blocks on the lean concrete foundation mat
- 3 drainage system installation at the base
- 4 laying and compaction of fill soil
- 5 installation of geogrid bar reinforcing system
- 6 laying of subsequent blocks



Available block finishing



Bureau Veritas Certified Quality System Company with SINCERT's and UKAS's accreditation



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