Problem
During mining operations, additional ore was discovered in their existing ramp system.

In order to access this ore, it was decided to excavate the ore in bulk and backfill with waste material in order to recreate the ramp. It was important to maintain the pit design limits and therefore it would be necessary to design a near vertical wall on the original line of the ramp.

The maximum height of the proposed structure would be 15m with a total length of 150m.

Solution
A number of options were considered, namely a reinforced concrete wall, a Terramesh® reinforced soil structure and a stabilised earth structure.

In evaluating the extreme loads (390 ton dump trucks) and severe blasting stresses that the wall would be exposed to, it was apparent that the Terramesh® structure would be the most suitable option, both technically and economically.

Benefits
Due to its flexible nature, the Terramesh® structure was able to withstand the enormous stresses induced from blasting carried out within 8m of the structure with minimal deformation.

Waste rock fill was sourced directly from the mine and local labour was employed to carry out the packing and lacing operation.

The Terramesh® reinforced soil structure proved to be the most cost-effective solution, with the overall project being about 40% cheaper than the alternative solutions.
Before construction

Date: Feb 2001

3x2x1 Terramesh® Units
5x2x1 Terramesh® Units
7x2x1 Terramesh® Unit
9x2x0.5 Terramesh® Units

TYPICAL CROSS SECTION OF TERRAMESH® WALL (15M HIGH SECTION)

Rock Face
Reinforced Block
Compacted Backfill
Earth Berm

50 kN/m² Loading

min 5000

As part of the ISO 9001 Management Systems, guided research and development programmes, information contained herein is continuously updated. Please confirm with Maccaferri SA (Pty) Ltd the latest version of the Product’s Specification available.