GeoTrel™

Wire mesh facing

REINFORCED EARTH

SUSTAINABLE TECHNOLOGY

GeoTrel™ wire mesh facing solutions for Mechanically Stabilized Earth structures

The GeoTrel™ system is the combination of welded wire mesh facing and geosynthetic reinforcing strips.

The technical performance of this system has been proven on complex projects, even for tall and heavily loaded Reinforced Earth® structures.

The GeoTrel™ system is one of the most cost-effective solutions for reinforced soil structures.

Unique technical features

The GeoTrel™ system is composed of geosynthetic reinforcing strips attached by patented connectors to a wire mesh facing.

The reinforcing strips are available in 2 types either with regular or high adherence edges, chosen according to the pH condition of the intended backfill:

- GeoStrap® reinforcing strip (coated polyester - PET) when the backfill has a pH lower than 9
- EcoStrap™ reinforcing strip (coated polyvinyl alcohol - PVA) when the backfill has a pH higher than 9

The connectors between the strips and the facing have been designed to provide high durability and easy installation. The minimum diameter of the mesh wire is 6mm which provides high performance of our structures during the intended service life.
The GeoTrel™ system is subject to rigorous specifications and quality control. Friction between the soil and the geosynthetic strip was verified through both in-situ and laboratory tests using calibrated extraction systems.
As with all Reinforced Earth® structures, the GeoTrel™ system is designed according to the governing international standard for its location.

In-situ pull-out test

GeoStrap® reinforcing strip

HA GeoStrap® reinforcing strip

EcoStrap™ reinforcing strip

HA EcoStrap™ reinforcing strip

Geosynthetic reinforcing strips

3D view

Road RD31 - Dortan, France

Versatile and flexible solutions

GeoTrel™ structures are designed to match our client requirements, even for complex geometries and project specific constraints. Our structures are already used worldwide, with walls built in excess of 30 meters height for permanent and temporary applications.

- **Permanent Walls:** The galvanized wire mesh facing can be backed by either rock or stone for permanent structures such as mine dump walls and avalanche barriers. The facing can also be vegetated and backfilled with soil for green walls and urban applications.
- **Temporary walls:** The GeoTrel™ system is particularly appropriate for projects requiring temporary phasing walls or as an alternative to natural slopes to solve land use constraints. For these applications, a geotextile is used to retain backfill behind the black-steel wire mesh facing.

Straightforward construction methodology

The GeoTrel™ construction method is similar to traditional Reinforced Earth® structures.

- The first row of panels is installed on a well-leveled and compacted technical fill.
- This first panel row is braced directly to the ground to prevent movement during placement of the backfill.
- The succeeding panel courses are installed as the geotextile backing (if needed), backfill and reinforcements are placed.
- Once installed, each level of reinforcement is vertically spaced 50 to 60 cm apart, which corresponds to a multiple of the backfill layer thickness.
- The backfill is placed and compacted using traditional earth-moving machines

Due to the modularity of the GeoTrel™ system and portability of its components, this solution is readily adapted to remote areas.

Salerno-Reggio Calabria motorway A3 - Italy

Cumbria Electric sub-station - Old Hutton, UK

Wildlife crossing - Brignoles, France

Motorway A1 - Valico, Italy

Storm water bassin - Decines, France

The Reinforced Earth® technique, a major innovation

Recognized as **a major innovation in the field of civil engineering**, the Reinforced Earth® technique provides numerous structural solutions for owners and contractors ranging from retaining walls to bridge abutments.

As the world leader in mechanically stabilized earth, Terre Armée Group has a presence in five continents, and benefits from both local and international expertise.

This wealth of expertise has led Terre Armée Group to develop processes offering common advantages:

- Reliable and sustainable materials
- Savings in terms of time and resources
- Capacity to adapt to complex situations
- Integration into the environment, in particular due to an extensive range of panel finishes

The Reinforced Earth® technique has revolutionized structural design and is applicable for all kinds of structures:

- Transport infrastructures
- Marine & riverine
- Industrial, mining & energy
- Environmental
- Land development and buildings

Nordic Ski Stadium - Prémanon les Rousses, France

Avalanche barriers - Seydisfjörddur & Isafjördur (Iceland)

Our goal is to create, design and supply innovative techniques to the civil engineering industry with a strong commitment to excellence in design, service and public welfare.

Sustainable Technology

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