GEOSYNTHETICS

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TENCATE Miragrid®

Stable and Secure Soil Reinforcement

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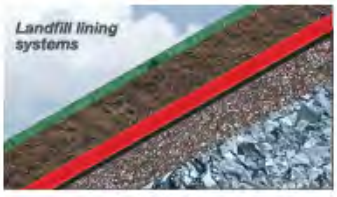
Miragrid® GX

Economic soil reinforcement

= Miragrid® GX



Weak and unstable soils are easily strengthened by the inclusion of Miragrid® GX geogrids. Miragrid® GX geogrids act to structurally increase the load bearing capacity and tensile resistance of the soil beyond its natural limits.

Manufactured from polymer coated high tenacity polyester yarns, Miragrid® GX geogrids ensure the long term structural stability of reinforced soil structures. Miragrid® GX geogrids are structured to meet the demands of most soil reinforcing applications with the following characteristics.

- High tensile strength.
- Low creep characteristics.
- High fibre interlock strength.
- High soil interaction and pullout strength.
- Suitable for long term (>100 years) reinforcement applications.
- Inert to chemical degradation.
- Resistant to prolonged exposure to sunlight.

The ideal solution for many applications

Miragrid® GX geogrids are the ideal reinforcement for all non-cohesive, coarse grained soils. The application areas are widely spread, including reinforced earth structures, bridge abutments, pile embankment, subgrade stabilization, stabilization of railroad tracks, foundations, slope reinforcement in landfill lining systems, hydraulic construction, and many more.

Vertical Block Wall Structures

Miragrid® GX geogrids are specially suited to the reinforcement of vertical and inclined reinforced soil walls with modular block or panel facings. Miragrid® GX geogrids can be easily integrated with a wide variety of facing systems to provide a superior, structurally sound finish. The problem of uneven and unstable blocks, which is a common feature with extruded geogrids, is eliminated with Miragrid® GX geogrids.

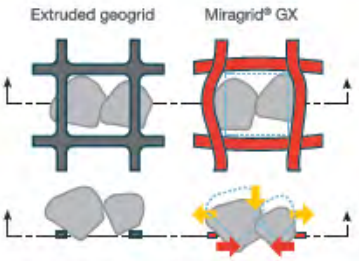
Why Miragrid® GX Geogrids?

- Economic alternative to conventional geogrid products
- Quick and easy installation
- Guaranteed long term performance with low creep tendency
- Flexible structure ensures optimum interlocking with the soil
- Enables practical green-facing systems
- Superior interfacing with concrete block structures
- Independently verified and tested performance properties
- Flexible production facilities to meet a wide varieties of strengths and sizes

Miragrid® GX Geogrids

Miragrid® GX geogrids are supplied in a variety of web dimensions that effectively bind the soil. An optimum compromise between flexibility and stiffness ensures its suitability for installation in a wide variety of soil types and applications.

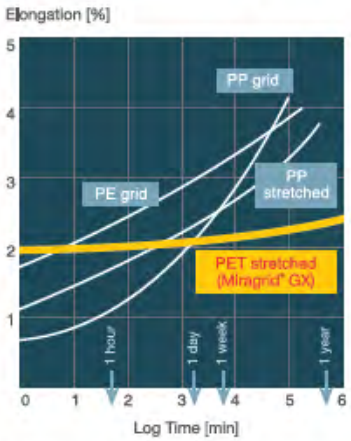
Miragrid® GX geogrids exhibit low creep characteristics and are suitable for inclusion in critical structures with long term performance requirements.



Left: Insufficient interlocking of stiff extruded geogrids

Right: Optimum interlocking is achieved with Miragrid® GX, resulting in an increased factor of safety.

Creep Performance of Miragrid® GX



Reference: "Geotextiles and Geomembranes in Civil Engineering", R Veldhuijzen (ed.), published by A. A. Balkema, Rotterdam, 1985

Perfectly simple

Miragrid® GX is used extensively behind segmental concrete block retaining walls.

A concrete foundation is placed in a well compacted trench with a kicker-step provided to anchor the first row of retaining concrete blocks.

Miragrid® GX is installed within layers of compacted, selected granular fill in tieback lengths determined by the design (usually 0.7 x height of the wall). Miragrid® GX is securely anchored between the blocks.

Tensioning of the Miragrid® GX in the tieback length with stakes is important. Also a groove may be cut in the compacted fill to facilitate better tensioning of the Miragrid® GX when the next lift of backfill is placed and compacted.

The vertical intervals of the Miragrid® GX reinforcement are determined by the design. Miragrid® GX must in all cases be installed perpendicular to the direction of the wall making sure that the principal machine direction strength is mobilised.

A composite Flo-Drain™ should be provided at the interface between the cut slope and the backfill material to intercept groundwater seepage out of the cut face. Weep-hole outlets are provided from the subsoil drain to the wall face.

bidim® is placed against the back of the blocks between these reinforcing layers to prevent internal erosion of the backfill through the block facing.

At the finished height of the wall a concrete surface drain is provided to accommodate stormwater run-off from the slope behind. Alternatively, a length of bidim® may be tied back into the slope to prevent internal erosion.

Normally the concrete retaining blocks are designed to give a finished wall angle of 70° to the horizontal.

Vertical, flexible retaining walls may be constructed using specially designed blocks. The face of the wall is initially set out at an angle of 85° and "pushed over" into a vertical position with compaction of the backfill.