



GRS Fortrac® Natur S

System Description





GRS Fortrac® Natur S retaining wall system

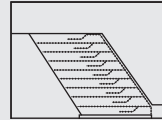
Cost-effective, eco-efficient solutions based on geosynthetic reinforced soil (GRS) system

Summary

GRS Fortrac® Natur S is a plantable system solution for the installation of geosynthetic reinforced retaining structures. The stability of the retaining structure is guaranteed by the successive layers of Fortrac® geogrids with intermediate fill.

Wide-ranging options in terms of batter, contouring and slope face design ensure that GRS Fortrac® Natur S retaining walls blend perfectly with their setting. The flexible geogrids and custom-fabricated steel mesh units facilitate the use of standard earth-moving plant for soil placement and boost the efficiency of site operations. This translates into substantial cost savings compared to conventional construction methods.

The system is normally used for slopes with heights from 1.5 m to over 20 m and batters between 45° and 90°. Given the system modularity and availability of Fortrac® geogrids in a variety of strengths, solutions can be developed to meet virtually any structural and design requirements. The diverse applications of the GRS system include: noise bunds, lateral earth pressure containments, avalanche protection dams, bridge abutments,



Geosynthetic Reinforced Soil

KEY DATA

The Project "Trento"

- 60 m high geogrid-reinforced slope
- Fortrac® 110/30-20 geogrids, with tensile strength of 110 kN/m in main direction of tension
- Fortrac® 45/20-20 geogrids, with tensile strength of 45 kN/m in main direction of tension
- Hydroseeding with special mix of grass seed, water, fertilizer and adhesive compound



Placement of fill ▲

ramps, road widening schemes, extra-steep embankments, reinstatement after embankment slips, and site extensions.

For batters not exceeding 70°, the system can be readily planted with vegetation. Steeper front batters may necessitate additional irrigation measures to establish a permanent vegetation cover. Maintenance-free front facings (e.g. GRS Muralex® system) offer an alternative option. HUESKER will provide you with a comprehensive support service from the start of design to final completion.

System components:

- HUESKER Fortrac® geogrids as reinforcing elements, with tensile strengths and embedment lengths as required by structural calculation
- Preformed steel mesh angles plus tensioning hooks as lost formwork
- Vegetation and/or erosion control mats

HUESKER will be pleased to provide you with expert advice on the choice of system components, the requirements placed on the fill material/soil and any necessary hydroseeding.

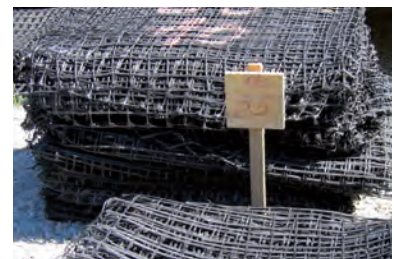
Installation of system components



The steel mesh angles are installed as lost formwork on a subgrade of adequate bearing capacity along the line of the future wall. The vegetation and/or erosion control mats are then secured to the steel mesh angles. Fortrac® geogrids are subsequently incorporated layer by layer in the lengths required by the structural calculation. The fill material specified by the structural design is placed and compacted in accordance with good practice. Existing site material or regionally sourced soils can often be used.

The flexible, extra-high-modulus Fortrac® geogrids allow rapid, trouble-free installation, even in difficult terrains and for complex geometries. The typical work sequence is described in separate installation guidelines, which we should be glad to send you. HUESKER can, upon request, recommend suitable contractors to perform the works.

Expert installation of Fortrac® geogrids ▼





Planting of slope face

The design of vegetated retaining walls needs to take account of local climatic and site-specific factors, such as slope batter, orientation and water balance. To achieve a permanently vegetated surface appropriate to the location, the appointment of a specialist contractor is generally advisable.

Continuous irrigation is usually required for slope batters exceeding 70°. The placement of planting soil in the front part of the GRS structure is recommended.

The slope face may be vegetated by incorporating a ready-seeded erosion protection mat made from coconut. Hydroseeding is a further option.





Technical service

HUESKER's engineers will be glad to assist you with the structural calculation and the sizing of specific GRS structures. They will provide comprehensive advice from preliminary design to on-site installation.

HUESKER liaises closely with clients and designers so as to ensure that all relevant factors are taken into account. Specialist designers can also be involved for the preparation of detailed structural design and production information.





Benefits at a glance

The GRS Fortrac® Natur S retaining wall system offers numerous advantages over standard solutions:

Financial:

- Short construction times
- Simple design concept
- Modularity
- Low construction costs
- Low maintenance requirement
- Ductile behaviour

Ecological:

- Reduced bulk materials transportation
- Reuse of site soil
- Sensitivity to landscape setting

Apart from offering advice on products and applications, HUESKER Synthetic can also supply customized specification texts for tendering purposes. Upon request, we shall also be glad to provide you with further information, data sheets, certificates and test reports on the retaining wall system.



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