

The cost comparison is based on a standard frost free asphalt road section compared to a geosynthetic reinforced design.

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A soil excavation and replacement with crushed gravel material is compared with a geogrid reinforcement which improves the bearing capacity of the soil.

Road length 1,000 m; road width 9.50 m
3 layered asphaltic overlay

Description	Solution 1	Solution 2
Wages	74,115	65,936
Equipment	10,189	41,608
Material	310,407	281,933
Subcontractor	84,875	56,645
General site equipment	3,356	3,327
Salary and other site costs	44,625	39,525
General costs	50,447	43,438
Risk and profit	12,612	10,860
Total, net	630,597	542,970
V A T	100,896	86,915
Total, gross	731,493	629,885

approx. 630,000 Euro with geogrid f. Naue cost advantages

The geosynthetic reinforced solution is more than 100,000 Euro cheaper than the conventional solution. Especially the short construction period and the low reinforcement material costs are convincing for the cost savings.

approx. 100,000 Euro cost savings

The comparison clearly shows the advantages of the Secugrid reinforcement solution. The use of geogrids under roads is a real alternative to expensive conventional solutions by means of soil excavation and placement of expensive crushed gravel material in road constructions.

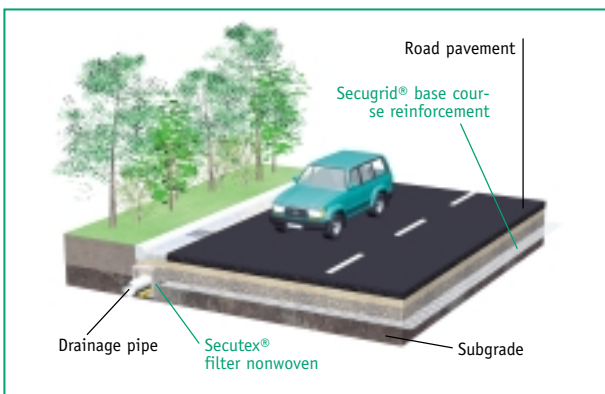
Combigrid® + Secugrid®



Cost comparison

How cost effective the use of Secugrid® reinforcement can be compared to a conventional method is proven by the following cost analysis. The comparison was carried out on a standard road design with an asphaltic overlay over a soft subsoil with an insufficient CBR value. The tender considered the construction of a site access road which was then turned into a classified road with an asphalt overlay (total road length 1,000 m; width 9.50 m). The conventional method considered a soil replacement with crushed gravel material, whereas the alternative method recommended the use of a Secugrid® reinforcement to reduce the use of crushed gravel material.

Base course reinforcement with Secugrid®



The Secugrid® reinforcement alternative was calculated with a cost saving of 100,000 Euro compared to the conventional method, and this with at least the same performance. The fast installation process of the geogrids and the reduced costs for the soil replacement material were

Summary of tender for considered solutions

Description	Solution 1 Conventional	Solution 2 Secugrid® geogrid solution
Wages	74,115	65,936
Equipment	50,189	41,608
Material	310,407	281,933
Subcontractor	84,845	56,645
General site equipment	3,356	3,327
Salary and other site costs	44,625	39,525
General costs	50,447	43,438
Risk and profit	12,612	10,860
Total, net	630,597	542,970
VAT	100,896	86,875
Total, gross	731,493	629,845

the main cost savings. The cost comparison allows a clear statement for the use of Secugrid® reinforcements. Many successfully installed applications show that the use of Secugrid® geogrids under roads is a real alternative to expensive conventional solutions by means of soil exca-

Combigrig® as soil reinforcement and separation layer for the bus terminal Melle, Germany



vation and placement of expensive crushed gravel material in road constructions.

Products

Secugrid® is a geogrid made of flat extruded monolithic bars with welded junctions. It is used for soil reinforcement in earth works, road constructions, segmented wall constructions, landfill and hydraulic engineering.



Combigrig® is a combined product of Secugrid® and a needlepunched Secutex® nonwoven geotextile. This multi-tasking product fulfills three functions at once: separation, filtration and reinforcement.



Reference: Temporary Road in Espelkamp, Germany

A temporary roadway had to be built over a length of 1 km over a soft soil with a CBR 3 %. The design asked for a CBR on the top level of the road of CBR 24 %. The first

Combigrig® over an extreme weak soft soil (Espelkamp, Germany).



approach therefore requested a minimum of 70 cm of crushed material 0/80 mm to allow this value. An alternative solution from the awarded contractor suggested a Combigrig® geogrid and only 45 cm of fill material, based on the Naue calculation diagram and saved the owner roughly 10,000 Euros just on the fill material.

Info

For more information about our **Secugrid®** and **Combigrig®** reinforcing products "The New Strength of Soil" please check our website: www.secugrid.com.

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