Index 501 Geosynthetic Reinforced Soils

Design Criteria

PPM, Vol. 1, Chapter 31 and ***Soils and Foundations Handbook***, Chapter 8**.**

Design Assumptions and Limitations

For reinforced slopes and reinforced foundation over soft soils applications (application usages 1 & 2), refer to ***PPM***, Vol. 1, Chapter 31.

For reinforced embankment and construction expedient applications (application usages 4 & 5), refer to Chapter 8 of the ***Soils and Foundations Handbook***.

Plan Content Requirements

For all usages, provide the description of the application for which the geosynthetic selected from Index 501 must be approved.

Additional plan content requirements are as follows:

Control drawings are required which depict the geometrics (plan and elevation view) of the area being reinforced. These designs are generic and are not based upon any one specific product or supplier. For reinforced slopes the designer shall design the slopes using the maximum reinforcement spacings allowed. For soft soils the designer shall design the reinforcement and provide the minimum total strength required.

The plans shall depict the required reinforcement strength based on the maximum allowed spacing of these materials, the extent and the number of layers of geosynthetic reinforcement, vertical spacing of geosynthetic reinforcement, orientation of geosynthetic facing details, details at special structures or obstructions, typical construction sequence, and top and bottom elevations of the geosynthetic reinforcement. Product names are not to be shown in the plans. Surface treatments and any other required design parameters or limitations shall also be shown in the plans.

When specifying Reinforcement Grid (Pay Item 145-71), for reinforced embankment and construction expedient applications a geogrid strength and the application usage must be provided to assist the contractor in selecting an applicable product. Provide the required geogrid strength as follows:

- For reinforced embankment applications include the required Ta values for both layers (as determined using the equation in Note 2 on Sheet 1) for the geosynthetic material.
- For construction expedient usage, provide the required strength of the geosynthetic at either 2% strain or 5% strain, whichever is most appropriate for the project.

Payment

Item number	Item description	Unit Measure
145-1	Geosynthetic Reinforced Soil Slope	SF
145-2	Geosynthetic Reinforced Foundation Over Soft Soil	SY
145-71	Reinforcement Grid, Biaxial	SY