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Installation Guide

Biaxial Geogrid

Site Preparation

Engineer shall verify that the subgrade is ready for geogrid deployment, and that Elevations are as indicated on the contract drawnings.

The surface shall be fairly smooth and free of stumps, sharp objects and debris that may Damage the geogrid. Tree stumps should be cut at ground level.

Care should be taken not to disturb any surface hard crust overlying weaker soils. In these cases, the geogrid should be installed directly on the unprepared subgrade.

Recommended structural fill material should be well-graded crushed aggregate fill to provide good stability and low moisture susceptibility.

Geogrid Installation

** Care should be used when handling geogrids, as edges can be sharp. Gloves are recommended when handling and cutting.*

Biaxial geogrids may be anchored in place to maintain the overlaps and alignments. Before fully unrolling the geogrid, anchor the beginning of the roll at the center and corners. Anchoring can be achieved by using small piles of fill aggregate, washer pins, and U-staples driven in the subgrade capturing the apertures of the grid.

(Note: If aggregate material is spread using heavy equipment, the shoving action may create "waves" in the geogrids ahead of the fill. If significant waves occur, the anchoring washer and pin, or U-staples should be removed to dissipate the wave at the end or sides of the geogrid roll)

Unroll geogrids on the subgrade and apply tension to minimize wrinkles.

Geogrid panel overlap requirements, either side-by-side, or end-to-end, shall depend on the strength of the subgrade

Recommended geogrid overlaps

Subgrade CBR	Overlap
>3	1 ft
1 – 3	2 ft
<1	3 ft

Biaxial Geogrid

Geogrid Installation (cont.)

Adjacent geogrid rolls should be overlapped (shingled) in the direction of anticipated fill spreading. This is to avoid the "peeling" of the geogrid at overlaps.

To minimize geogrid wrinkles caused by the shoving action, fill material shall be pushed forward and spread while gradually lifting the blade or bucket.

Geogrids can be easily cut with sharp shears to accommodate manhole covers, curves, etc.

Base Material placement over geogrid
Firm Subgrade

When applying the fill material over relatively competent subgrades (CBR>3), rubber tire trucks (end or belly dumps) can drive directly on the geogrid at very slow speeds and dump the fill material as they go. Operators must not turn or make any sudden stops when driving across the geogrid.

Tracked vehicles shall not be driven directly on the geogrid. A minimum of four inches of fill material shall be placed between the geogrid and tracks.

Base course materials shall be placed in lift thickness and compacted in accordance wit the design requirements.

Any ruts developed during spreading or compacting must be filled with additional fill material to reach the design thickness. Do Not grade out the ruts.

Base Material placement over geogrid
Soft Subgrade

For weak subgrades (CBR between 1 – 3) or very weak subgrades (CBR<1), back dump specified fill materials onto the geogrid where the subgrade is most stable and then spread the fill over the geogrid, out toward the weaker subgrade. Low ground pressure equipment is recommended for spreading fill over soft subgrades. Tight turns, sudden stops, or spinning should be prohibited.

Biaxial Geogrid

Soft Subgrade (cont.)

Loaded haul trucks or heavy equipment should not be driven over the initial fill material, until the total compacted thickness has been achieved and the load can be supported.

Compaction of the fill material shall be conducted without overstressing the subgrade. Static compaction should be used to compact fill materials over soft subgrade.

(Smooth-wheel rollers have typical ground pressures of 45-55 psi and provide 100% coverage. Pneumatic rubber-tired rollers have typical ground pressures of 85 – 100 psi, and provide 70 -80% coverage.)

Any ruts developed during spreading or compacting must be filled with additional fill material to reach the design thickness. Do not grade out the ruts. Rutting is normally indicative of aggregate fill that is too wet, too thin, or not adequately compacted. Grading out will further reduce the fill thickness between the wheel tracks and potentially expose the geogrid.

Repair

Geogrid sections damaged during the installation must be repaired by patching. Remove fill from the surface of the geogrid, extending 3ft surrounding the damaged area. Place a geogrid patch to cover the damaged area, assuring it extends to a 3ft overlap in all directions.

Protection

The geogrid shall be protected from long-term exposure to direct sunlight during transport and storage. Storage of the geogrids shall be in such a manner, as to avoid contact with excessive mud, epoxies, wet concretes and other deleterious materials.

After placement, the georid shall be covered as soon as possible.

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