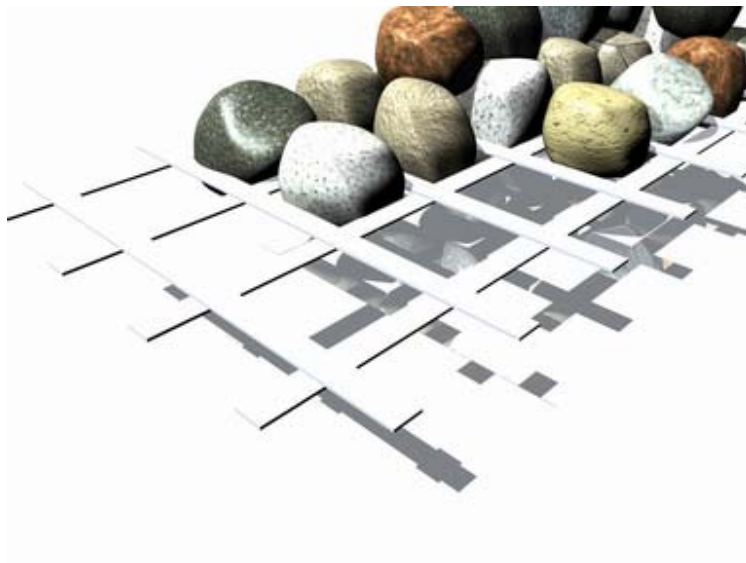


Secugrid[®] & Combigrid[®]

Installation Guidelines: Base Reinforcement Applications

NAUE GmbH & Co. KG



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1.) SCOPE

This installation guide is valid for all Secugrid®/Combigrid® geogrids used in base reinforcement applications. It details the receipt, storage and handling, installation of geogrid and fill placement.

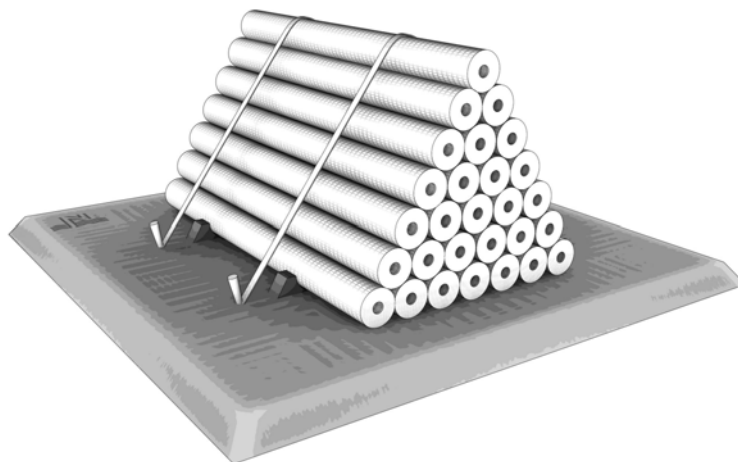
2.) APPLICATIONS

This guide is appropriate for geogrid installation in base reinforcement applications, to include:

- Unpaved roads and/or roads subsequently paved
- Parking areas, unpaved and/or subsequently paved
- Area stabilization for laydown yards, and multidirectional traffic areas
- Reinforcement over subsidence prone areas
- Similar applications

3.) RECEIPT, STORAGE AND HANDLING

Geogrids received shall be verified as being the type, grade or designation required for the project, as defined by the project documents. Material shall be clearly marked, and in good condition before acceptance by the installation contractor.



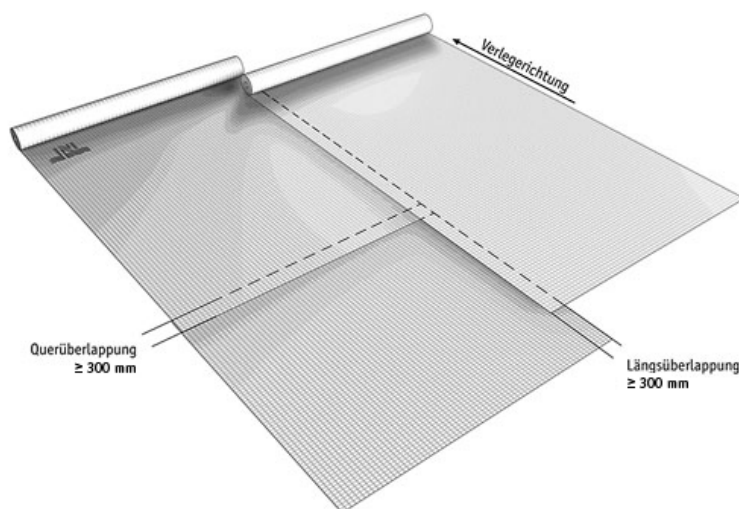
Geogrids are transported and stored in rolls, and may be stacked on top of each other, but no more than seven rolls in height. If stored on the ground, a tarpaulin shall be laid first to protect rolls from collecting dirt from site. A tarpaulin for protection from the elements must cover material stored onsite for a period exceeding two months.

Geogrids may be installed either manually or by use of mechanized equipment. Edges of the geogrid rolls can be sharp, so gloves may be used during hand carrying and placement to prevent injury. Mechanized equipment may be used providing the said installation equipment does not damage the geogrid during this process.

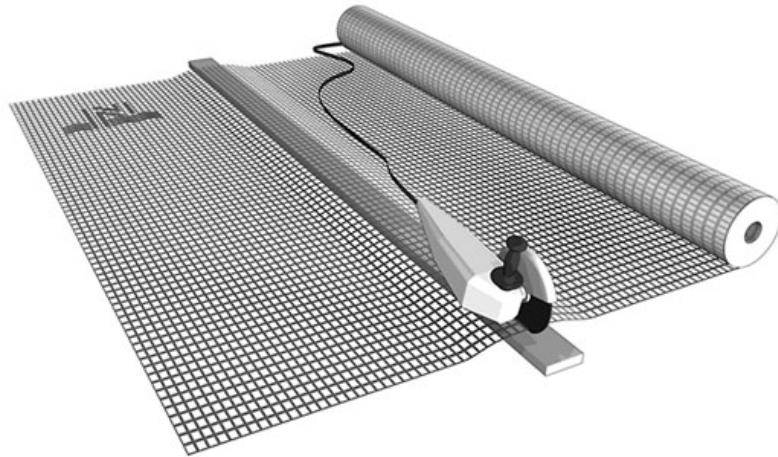
4.) SECUGRID® INSTALLATION

Ground surface shall be prepared prior to placement, providing a level and uniform ground surface, with appropriate clearing and grubbing performed to accomplish this. Additional preparation, as outlined in the project documents may be required.

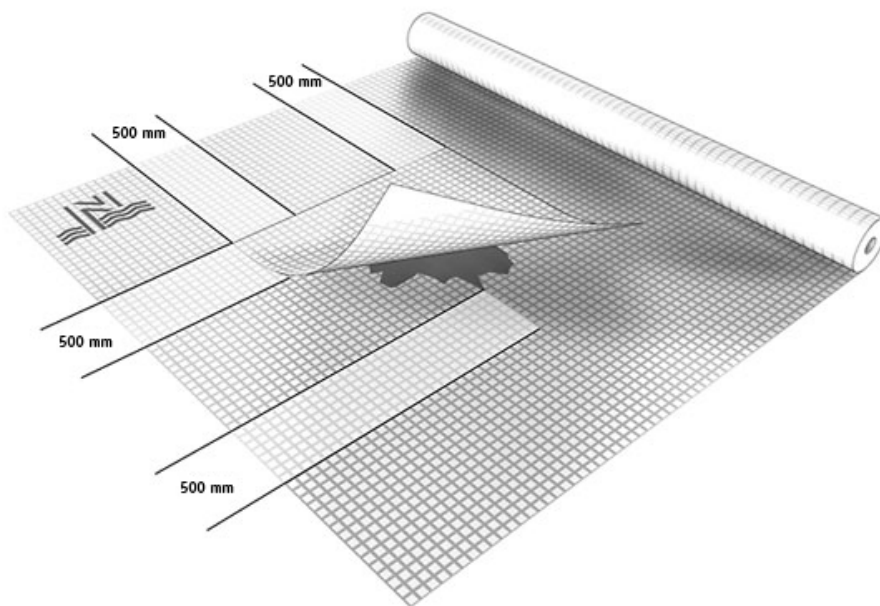
Geogrid shall be placed in the location and orientation specified in the project plans and specifications. Geogrid shall be laid flat and smooth directly on the prepared subgrade. All wrinkles and folds shall be removed. When required, geogrid may be pretensioned to eliminate slack.



Geogrid shall be overlapped a minimum of 300 mm in both adjacent and longitudinal directions, or joined as specified in the project plans. Soft subgrade installations may require a greater overlap, or joining of adjacent rolls using cable ties or other suitable device to maintain the geogrid location and orientation during fill placement. Consult project plans and specifications for more instructions in this regard.



Cutting of Secugrid® (for example with an electric powered rotating disc)



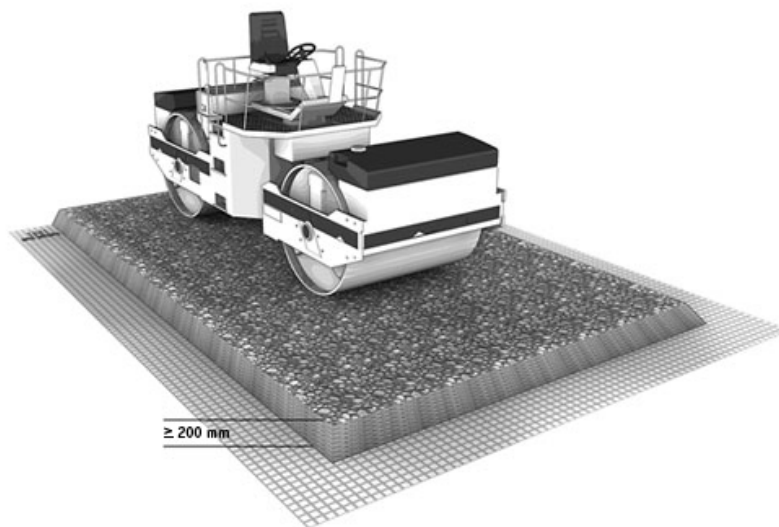
Repair of damage areas

5.) FILL PLACEMENT AND COMPACTION CONTROL

Prior to fill placement the geogrid shall be inspected by the certified inspector, to make sure it is placed in the proper location, and has not been damaged during this installation. Damaged geogrid, as determined by the engineer shall be repaired immediately, either by replacement or by patching to suitably cover the damaged area. Consult engineer for additional requirements.



Typically construction vehicles are not allowed to traffic directly on the geogrid. The subbase or base course shall be placed so a minimum of 200 mm is in place before trafficking may occur. On firm subgrades rubber tired vehicles may be allowed to traverse directly on the geogrid, providing no turning or sudden stops are allowed, and slow speeds are maintained. Contractor shall obtain permission from the responsible engineer before this may occur. Any ruts occurring during fill placement shall be immediately filled in.



Typically granular fill is used for base reinforcement applications. In all cases fill used shall be as required in the specifications, and shall be placed and compacted accordingly. If guidance is not provided, compaction shall be carried out according to the minimum standards set forth by appropriate local guidelines.