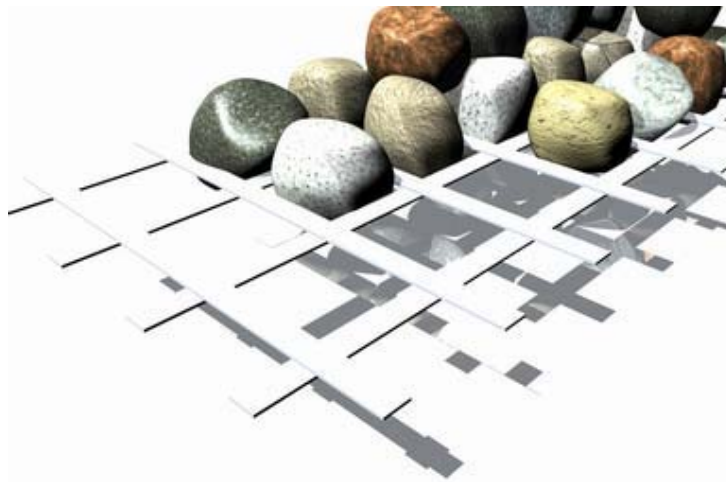


Secugrid® & Combigrid®

Base Reinforcement Applications

NAUE GmbH & Co. KG



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The following installation recommendation contains general installation guidelines. It is presented as a general format, not as a direct substitute for a project specific drainage specification. In the event of a conflict, the requirement of the project specification will supersede these recommendations. This recommendation does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this guideline to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. The information contained herein has been compiled by NAUE GmbH & Co. KG, Germany, and is, to the best of our knowledge, true and accurate. There is no implied or expressed warranty. Final determination of suitability for use contemplated is the sole responsibility of the user. This information is subject to change without notice.

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.

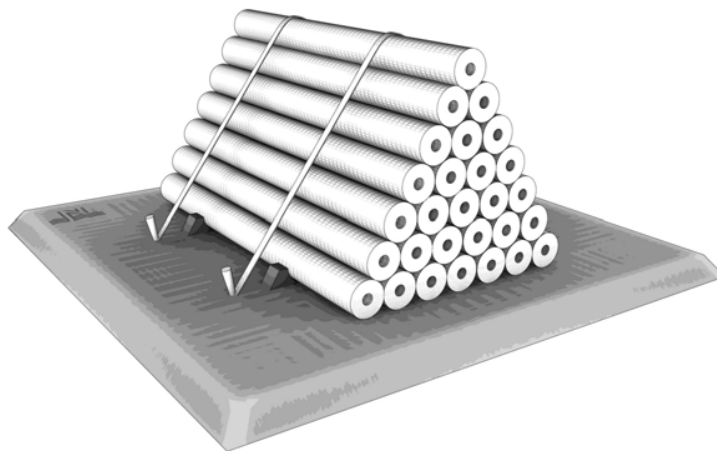
2. APPLICATIONS

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.

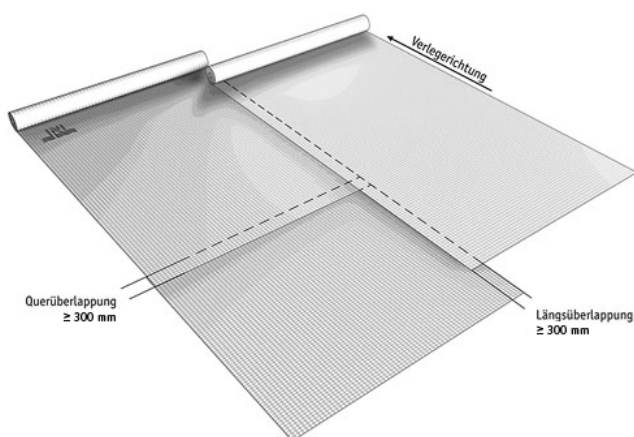


Geogrids are transported and stored in rolls, and may be stacked on top of each other, but no more than seven rolls in height. If rolls are used for lifting purposes the pole length for 4.75 m wide Secugrid®/Combigrid® rolls should be ≥ 3.60 m to avoid bonding of the roll during the lifting process. 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.

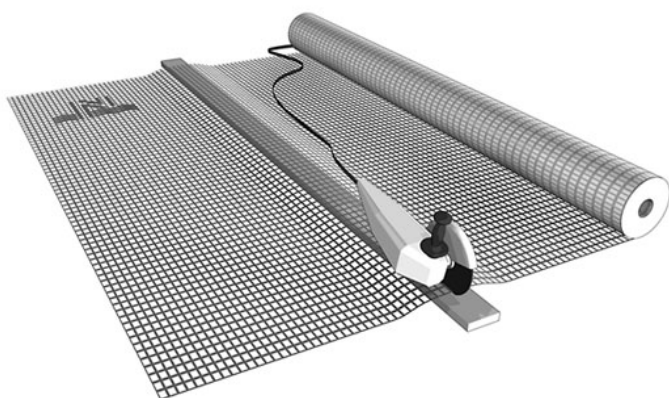
4. SECUGRID® INSTALLATION

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.

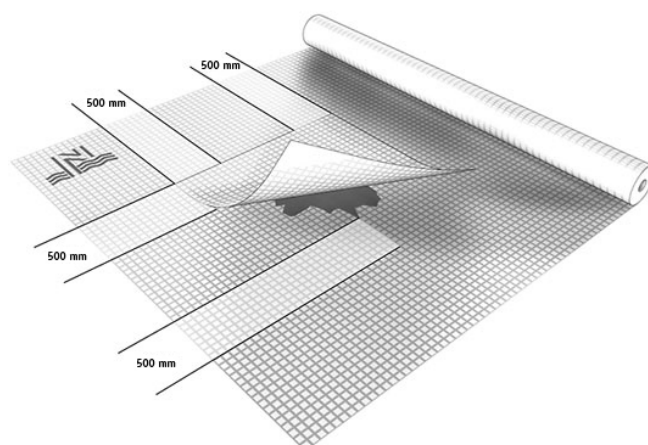


Geogrid shall be placed in the location and orientation specified in the project plans and specifications. Geogrid shall be laid flat and smooth directly on the prepared subgrade. All wrinkles and folds shall be removed. When required, geogrid may be pretensioned to eliminate slack. Should wind lift be a concern, then sufficient measures should be taken and be requested from the responsible specifying or site engineer

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.

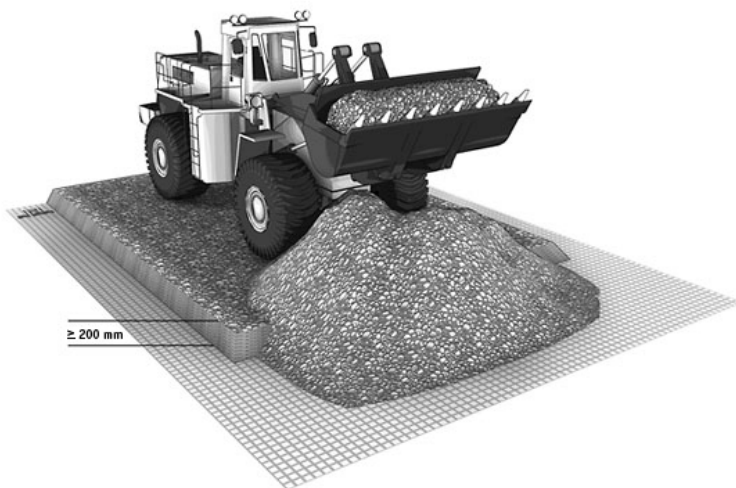


Cutting of Secugrid®
(for example with an electric powered rotation disc)



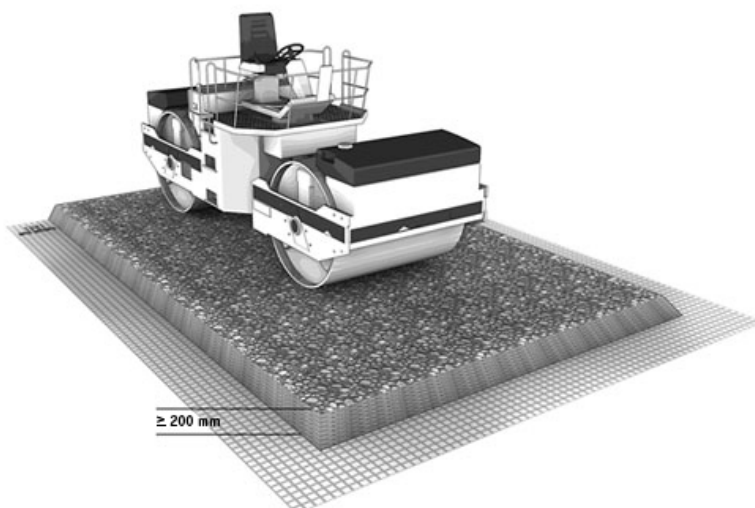
Repair of damaged areas

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. 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.



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