



# Guidelines for the Transportation, Storage and Installation of E'GRID geogrid products

The following information is offered in good faith to assist end users with the transportation, storage and installation of E'GRID geogrids. As installation damage is one of the key factors that effects the integrity of the installed product it is recommended that the following guidelines be adhered to as closely as possible:

- **Safety & Handling:** E'GRID Polypropylene and High Density Polyethylene geogrid products are manufactured from materials that are not hazardous to health. Special precautions are therefore not necessary.

Should the products be involved in a fire, care should be taken not to handle hot or molten material or inhale smoke.

For handling the material it is recommended that protective gloves are worn to avoid any cuts or abrasions as the mesh can be quite sharp, particularly at cut edges. Take care when walking on the product as it can be slippery when wet.

- **Storage:** The product should be stacked safely in a secure location on firm ground until ready for use. The rolls may be parallel or cross stacked up to 5 rolls high. Stacks must be adequately chocked to prevent collapse. Products may be stored un-covered out-of-doors during normal construction periods of a few weeks. Extended storage, e.g. of excess material between projects, should be covered or indoors.
- **Transportation:** Depending on local regulations concerning manual lifting, rolls of product may be transported on site by hand or machine. For manual transport, good lifting practice and local regulations must be followed. For machine transport, rolls may be carried carefully across the forks of a fork-lift-truck or by means of a round "carpet boom" inserted in the central core hole of the roll. Conventional flat forks must not be inserted into the central core holes of rolls of product.
- **Subgrade Preparation:** It is possible to lay the geogrid directly on undisturbed vegetation e.g. grasses and reeds should levels so permit. Any woody plant vegetation such as bushes or shrubs, as well as large rocks or other similar obstacles must first be removed. On very soft ground it can be advantageous to cut vegetation flush with the ground to leave the root-zone and soil crust undisturbed. All voids, wheel ruts or other deep depressions require to be either filled or leveled to provide a smooth surface.
- **Product Installation:** The geogrid should be rolled out and allowed to follow the contours of the ground. Generally the direction of laying will be specified in the contract or design documents. If the direction is not

specified then different considerations apply to the use of Biaxial and Uniaxial geogrids. Biaxial may be placed on the subgrade either parallel to a road centre line or at right angles to it. Uniaxial geogrids should generally be placed at right angles to the line of the face of the wall or slope being reinforced by them. All geogrids should be tensioned by hand to remove slack and to ensure that any mechanical joints are taught. Small deposits of fill material will generally be required on top of the geogrid at this time to hold it in position until the main fill placement commences. No construction traffic may be allowed to travel directly on the geogrid prior to fill placement.

- **Geotextile/Geogrid combinations:** Should the joint use of a geotextile separator and geogrid be specified over very soft ground then the geogrid should always be placed on top of the geotextile.
- **Product Continuity:** For Biaxial geogrids the simplest and quickest method of ensuring product continuity is to overlap adjacent layers. Roll edges and ends should have a minimum overlap of 300mm. Over soft or uneven soils these overlaps may require to be increased up to as much as 600mm. Care should be taken to ensure that the overlaps are maintained during fill placement. Should a mechanical joint be required then please consult the manufacturer for further details.

Uniaxial geogrids may be joined end-to-end by the use of "bodkin" joints. Bodkins of the appropriate size, shape and material supplied by the manufacturer should be used.

- **Cutting to size:** Product may be cut to length or width using either snips or a disc cutter.
- **Placement of Cover Fill:** Fill material should be end tipped at either the starting edge of the geogrid or on top of already placed fill before being spread to the required depth using a tracked machine. A minimum fill layer thickness over the geogrid of 150mm is recommended prior to any trafficking or compaction.
- **Fill Selection:** A selection of fill types may be used with E'GRID geogrids. Ideally the use of a graded aggregate is recommended, with Type 1 or Type 2 sub-base as per the UK Highways Agency's Specification for Highway Works being the preferred material.
- **Fill Compaction:** Compaction of the sub-base material should follow in accordance with the appropriate clause of the project specification.

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