

GUIDELINES: TRANSPORTATION, STORAGE & INSTALLATION

TerraGrid® Aggregate Confinement Geogrids

The following information is offered in good faith to assist end users with the transportation, storage and installation of **TerraGrid** aggregated confinement geogrids.

Safety & Handling: Composed of polypropylene, carbon black and additives, **TerraGrid** geogrids are not chemically hazardous to the health of those handling these materials. Should these products be involved in a fire, care should be taken to not A) handle hot or molten product or B) inhale smoke from the burning material. Protective gloves should be worn to avoid cuts or abrasions as the product edges and punctured holes can be sharp. Care should be taken when walking on these products as they can be slippery, particularly when wet.

Storage: The rolls of geogrid should be stacked safely in a secure location on firm ground until ready for use. The rolls may be stored parallel or cross stacked up to five (5) rolls high. In either case, all stored material must be adequately chocked to prevent roll movement and/or stockpile collapse. Products may be stored, uncovered and subject to sunlight, for up to 6 months. For extended storage needs, i.e., in excess of 6 months, the products should be covered from sunlight or stored indoors. If left outside, we suggest use of a light colored cover (white preferred).

Transportation: Depending on local regulations concerning manual lifting, rolls of product may be transported by manual lifting or machine. For manual transport, local regulations must be followed and, if allowed, proper lifting practices must be used. For machine transport, rolls may be carried carefully across the forks of a forklift or by means of inserting a round 'carpet boom' inserted into the central hole of the roll. Conventional flat forks must not be inserted into the central holes of the rolled products.

Subgrade Preparation (supplemental to project specification requirements): All voids, wheel ruts or other deep depressions that will create a void beneath the geogrid when unrolled require filling or leveling. Similarly, large soil clods, stones, sticks or trash require removal prior to placement of **TerraGrid** geogrids or underlying geotextile. In essence, **TerraGrid** geogrids should be allowed to follow contours of the prepared soil surface or geotextile.

All overlaps should be shingled in the direction of fill placement.



Geogrid Placement: Should the direction of unrolling or in-place orientation not be specification delineated, **TerraGrid** aggregate confinement geogrids may be unrolled and oriented as needed to optimize geogrid use. Typically for linear projects, e.g., roads/trackbeds, the direction of unrolling is parallel to the road/track centerline.

Traffic load stress transfer between adjacent geogrid rolls is accomplished through overlaps and accompanying aggregate 'strike-through' into both layers of the geogrid apertures. Suggested overlap widths are as follows and pertain to both roll edges and roll ends:



CBR \geq 4: 8"-12" minimum.
 $2 \leq$ CBR < 4: 1' to 2' minimum
 $1 \leq$ CBR < 2: 2' to 3' minimum
 CBR < 1: Contact your *Hanes Geo Components Representative* for project specific installation guidelines

GUIDELINES: TRANSPORTATION, STORAGE & INSTALLATION

TRANSPORTATION, STORAGE & INSTALLATION: TerraGrid Aggregate Confinement Geogrids

Geogrid Placement (continued)

Unrolled or partially unrolled geogrids may require 'adjustment' to remove slack or excessive 'bulges' or restore overlap alignment prior to or during placement and spreading of overlying aggregates. Adjustment requirements are minimized by:

- Reducing the length of geogrid unrolled prior to fill placement. A good benchmark is to unroll only sufficient product to enable spreading of the next transported fill load to occur unencumbered by the yet unrolled geogrid.
- If required, place small deposits of the aggregate on top of the unrolled geogrid to hold its position until primary fill placement commences. Plastic zip or cable ties may be used in lieu of or in addition to the fill material deposits.

Cutting Geogrids to Size

- In the unrolled state: use snips, a disc cutter or a **sharp** utility knife.
- In a rolled state: Careful use of a concrete cut-off saw results in clean, straight cuts.

Geogrid Repairs

To preserve stress transfer when the geogrid has been damaged, simply use a patch of the same geogrid material. The patch should rest directly over the discontinuity and extend a minimum of 3' beyond the damaged area in all directions.

Placement of Overlying Aggregate

- Aggregate should be dumped at either the leading edge of the geogrid or above an already placed and spread fill section.
- Aggregate spreading should be completed using tracked equipment for most projects. Spreading with wheeled equipment may be allowed provided the initial aggregate lift is sufficient to prevent subgrade overstressing.
- A minimum 6" initial aggregate lift is suggested prior to any trafficking or compaction. This thickness may increase significantly with weaker subgrades and/or heavy haul vehicles with high (highway) tire pressures.
- During fill spreading, the bulldozer blade or skid steer bucket should be angled back to enable the aggregate to 'roll' rather than 'slide' into position within and over the geogrid.
- Aggregate spreading and compaction over soft and/or wet subgrades using steel-tracked equipment may create pore pressure increases and reduced subsoil strength. Rubber tracked, skid-steer equipment should be considered for these conditions.

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No construction equipment should be allowed to operate directly on a geogrid prior to fill aggregate placement

Geotextile/Geogrid Combinations: Should the combined use of a geotextile and geogrid be specified, the geogrid should always be placed above the geotextile (unless project documents specify otherwise).



Geogrid 'buldge' In Advance of Fill Placement

Aggregate dumping and spreading operations often create geogrid 'buldges' in front of the advancing aggregate. Typically, the softer the subgrade, the more pronounced the buldge. Within reason, such buldges assist in aggregate strikethrough, creating good interlock between aggregate particulates and the geogrid. If buldges become sufficiently tall to produce geogrid 'folding' instead of buldge propagation at constant height, or problematic in maintaining required overlaps, geogrid cutting and overlapping is required. An alternation solution using lower ground pressure equipment is often effective and more economical.

