
Special Specification 3031

Geogrid Base Reinforcement



1. DESCRIPTION

Furnish and place geogrid base reinforcement in accordance with the lines and grades shown on the plans or as directed.

2. MATERIALS

Furnish geogrid as follows.

- Geogrid Base Reinforcement Type 2 for the control section, meeting the requirements of DMS-6240, "Geogrid for Base/Embankment Reinforcement." Use roll widths and lengths shown on the plans or as approved.
- Geogrid Base Reinforcement Type 3—meeting the requirements of Table 1 when tested in accordance with Tex-621-J. Provide the Engineer with 5 samples from separate rolls, in accordance with Tex-735-I.

Provide geogrid that is resistant to damage during construction and has long-term resistance to chemical and biological degradation caused by the materials being reinforced. Package the geogrid in rolls of the length and width shown on the plans or as approved. Deliver each roll in one continuous piece, without discontinuities in the ribs, and packaged in a suitable sheath, wrapper, or container to protect the geogrid from damage due to ultraviolet light, moisture, and normal storage and handling. Identify each roll with a tag or label securely affixed to the outside of the roll on one end. Include the unique roll number, serially designated, the lot number or control number, the name of producer, the style or catalog designation of product, and the roll width and length on each label.

If any individual sample selected at random from 100 rolls or fraction thereof fails to meet any specification requirements, reject that roll. Take two additional samples, one from each of two other rolls selected at random from the same 100-roll lot or fraction thereof. If either of the additional samples fails to comply with any requirements in this section, reject the entire quantity of rolls represented by that sample.

**Table 1
Geogrid Requirements**

Property	Test Method	Type 3
Aperture shape	Visual Observation	Triangular
Aperture size, in. – nominal ¹	Tex-621-J	1.5
Ribs per node	Visual Observation	> 4
Rib thickness , in. nominal	Tex-621-J	
MD ribs		0.05
CMD ribs		0.05
Junctions		0.15
Rib shape	Visual Observation	Rectangular
Junction strength (efficiency) (%) Min	Tex-621-J	93
Tensile Modulus@ 2% elongation ² . (lb./ft.) Min MD & CMD Directions ³	Tex-621-J	13,400

1. Nominal rib pitch between parallel ribs and the center of the base to the center of the opposite node to characterize height of an equilateral triangle
2. Determined as a secant modulus without offset allowances.
3. MD and CMD for drawn products, refer to the more (CMD) or less (MD) highly drawn ribs where the aperture dimensions are unequal.

3. CONSTRUCTION

Prepare the subgrade as indicated on the plans or as directed. Set string lines for alignment if directed.

Install geogrid in accordance with the lines and grades as shown on the plans. Place base material in lift thicknesses and compact as shown on the plans or as directed. Do not operate tracked construction equipment on the geogrid until a minimum fill cover of 6 in. is achieved. Rubber tire construction equipment may operate directly on the geogrid at speeds of less than 5 mph if the underlying material will support the loads.

Where excessive substructure deformation is apparent, correct grid placement operations as recommended by the manufacturer or as directed.

- 3.1. **Geogrid Placement.** Orient the geogrid such that as it is unrolled, the length is parallel to the direction of the roadway. Overlap geogrid sections as shown on the plans or as directed. Use plastic ties at overlap joints or as directed.

Placement of geogrid around corners may require cutting and diagonal lapping. Pin geogrid at the beginning of the backfill section as directed. Keep geogrid taut at the beginning of the backfilling section but not restrained from stretching or flattening.

- 3.1.1. **Longitudinal Joints.** Overlap longitudinal joints by a minimum of 1 ft. Space longitudinal ties 10–20 ft. or as directed.
- 3.1.2. **Transverse Joints.** Overlap transverse joints by a minimum of 1 ft. Space transverse ties 4–5 ft. or as directed.
- 3.2. **Damage Repair.** As directed, remove and replace Contractor-damaged or excessively deformed areas without additional compensation. Lap repair areas a minimum of 3 ft. in all directions. Tie each side of repair

grid in at least 3 locations, but do not exceed normal construction spacing; tie spacing for odd shapes will be as directed. Repair excessively deformed materials underlying the grid as directed.

4. MEASUREMENT

Geogrid base reinforcement will be measured by the square yard of roadway placement as shown on the plans, with no allowance for overlapping at transverse and longitudinal joints.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" are paid for at the unit bid price for "Geogrid Base Reinforcement" of the type specified. This price is full compensation for furnishing, preparing, hauling, and placing materials, including labor, materials, freight, tools, equipment, and incidentals.