

SPECIAL SPECIFICATION**5172****Geogrid for Base**

1. **Description.** Furnish and place geogrid in accordance with the lines and grades shown on the plans or as directed.
2. **Materials.** Geogrid is a polymer based geosynthetic structure formed by a network of integrally connected tensile elements with apertures designed to interlock with surrounding fill material. Furnish geogrid that meets the requirements of Table 1, when tested in accordance with Tex-621-J. Use the class shown on the plans. Use roll widths and lengths shown on the plans or as approved. Deliver each roll of geogrid in suitable packaging to protect it from environmental degradation; each roll will be one continuous piece without discontinuities in the ribs. The Engineer will obtain at least 1 sample of the geogrid per project and test as needed to verify compliance with Table 1.

Table 1
Geogrid Requirements

| Property | Class A | Class B |
|---|------------------------|------------------------|
| Aperture Size, in. (mm) | 1.0 - 2.0 (25 - 51) | 1.0 - 2.0 (25 - 51) |
| Percent Open Area, min. | 70 | 70 |
| Thickness, in. (mm), min. | | |
| MD ² ribs | 0.03 (0.77) | 0.05 (1.27) |
| CMD ² ribs | 0.025 (0.64) | 0.045 (1.15) |
| Junctions | 0.06 (1.50) | 0.10 (2.54) |
| Tensile Modulus @ 2% elongation ¹ , lb./ft. (N/m), MD & CMD ² , min. | 14,000 (204,260) | 20,000 (291,000) |
| Junction Efficiency, % of rib ultimate tensile strength, MD & CMD ² , min. | 90 | 90 |

1. Determined as a secant modulus without offset allowances

2. MD refers to the ribs oriented, in use, parallel to the roadway and CMD refers to the ribs oriented, in use, perpendicular to the roadway.

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 without a minimum fill cover of 6 in. Rubber tire construction equipment may operate directly on the geogrid at speeds of less than 5 mph if the underlying material supports the loads. Where excessive

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

A. Placement. Orient the geogrid length as unrolled parallel to the direction of 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.

1 Longitudinal Joints. Overlap longitudinal joints by a minimum of 1 ft. Space longitudinal ties 10 ft. to 15 ft. or as directed.

2. Transverse Joints. Overlap transverse joints by a minimum of 1 ft. Space transverse ties 4 ft. to 5 ft. or as directed.

B. 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 will be measured by the square yard of roadway placement as shown in 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" will be paid for at the unit price bid for "Geogrid for Base" of the type specified. This price is full compensation for furnishing, preparing, hauling, and placing materials including labor, materials, freight, tools, equipment, and incidentals.