



PRODUCT INTRODUCTION:

CCI-UAG (Uni-Axial Geogrid) is a high-strength geotechnical material primarily composed of polymer. It incorporates specific additives for UV resistance and anti-aging properties. Through unidirectional stretching, the originally scattered chain-like molecules are reoriented into a linear state, resulting in a high-strength geotechnical material. It greatly surpasses traditional or existing reinforcement materials and is an ideal synthetic material for civil engineering reinforcement and strengthening.

PERFORMANCE FEATURES:

- 1. High Tensile Strength:** Uni-axial geogrids are typically manufactured from high-strength polymers like polyethylene (PE) or polypropylene (PP), offering excellent tensile strength to withstand heavy loads and stresses.
- 2. One-Dimensional Reinforcement:** Unlike bi-axial geogrids, which provide reinforcement in both primary directions, uni-axial geogrids reinforce primarily in one direction, making them ideal for applications where reinforcement is primarily needed along a single axis.
- 3. Aperture Geometry:** The aperture shape and size of uni-axial geogrids are designed to interlock efficiently with soil particles, enhancing soil-geogrid interaction and improving stability.
- 4. Rib Configuration:** Uni-axial geogrids feature ribs or longitudinal elements that provide the primary reinforcement. These ribs are carefully designed to distribute loads effectively and prevent soil movement.
- 5. Wide Range of Strengths:** Uni-axial geogrids are available in various strengths to accommodate different soil conditions, project requirements, and load-bearing capacities.
- 6. Chemical Resistance:** They exhibit resistance to chemicals typically found in soils, ensuring long-term performance even in harsh environmental conditions.
- 7. UV Resistance:** Many uni-axial geogrids are treated with UV stabilizers to withstand prolonged exposure to sunlight without degradation, extending their service life.
- 8. Flexible and Lightweight:** Despite their high strength, uni-axial geogrids are lightweight and flexible, facilitating easy handling, transportation, and installation on-site.
- 9. Engineering Properties:** Manufacturers provide detailed engineering properties such as tensile strength, modulus, and elongation characteristics to aid in design and specification for specific applications.
- 10. Customization Options:** Uni-axial geogrids can be customized in terms of width, length, aperture size, and tensile strength to meet the unique requirements of each project.
- 11. Quality Assurance:** Reputable manufacturers adhere to strict quality control measures and may provide certifications and test reports to ensure compliance with industry standards and specifications.
- 12. Compatibility with Various Soils:** Uni-axial geogrids are compatible with a wide range of soil types, including cohesive and granular soils, making them versatile for different construction projects.

APPLICATION:

- Uni-Axial Geogrid is a high-strength structural material suitable for roadbed reinforcement in highways, municipal roads, railways, airport runways, etc.
- Suitable for dam reinforcement in rivers, lakes, and seas.
- Applicable for fences in orchards, vegetable fields, livestock areas, and land. It offers safety, convenience in use, and easy assembly and disassembly, while maintaining an aesthetic appearance.
- Suitable for reinforcement projects of reinforced soil retaining walls in highways, municipal roads, railways, airport runways, and riverbanks and coastlines.

SCOPE OF APPLICATION:

- Mainly used in retaining walls, bridge abutments, and steep slope projects.
- Retaining walls and bridge abutments are structural bodies subject to external loads: active earth pressure, dynamic loads on the upper part of the structure, temperature stresses, etc. Under the long-term tension of reinforcement materials and the repeated action of dynamic loads, the molecular structure of the material undergoes fatigue, leading to performance degradation and accelerated aging of the geogrid. To prevent significant deformation of the structure due to creep of the reinforcement material, unidirectional geogrids made from high-density polyethylene (HDPE) should be selected.

TECHNICAL PARAMETERS:

FOR POLYPROPYLENE UNI-AXIAL GEOGRID

Item	TGDG35	TGDG50	TGDG80	TGDG120	TGDG160	TGDG200
Tensile Strength, kN/m \geq	35	50	80	120	160	200
Tensile Strength with 2% Strain, kN/m \geq	10	12	26	36	45	56
Tensile Strength with 5% Strain, kN/m \geq	22	28	48	72	90	112
Elongation Rate, % \leq	10%					

FOR POLYETHYLENE UNI-AXIAL GEOGRID

Item	TGDG35	TGDG50	TGDG80	TGDG120	TGDG160
Tensile Strength, kN/m \geq	35	50	80	120	160
Tensile Strength with 2% Strain, kN/m \geq	7.5	12	21	33	47
Tensile Strength with 5% Strain, kN/m \geq	21.5	23	40	65	93
Elongation Rate, % \leq	11.5%				

SIZE OF PACKAGING:

For Polypropylene

- 3m*50m

For Polyethylene

- 1m*50m, 2m*50m

For Non-woven geotextile

- 5.8m*50m

STORAGE:

- **Dry and Clean Environment:** Store geogrids in a dry and clean environment away from moisture, direct sunlight, and extreme temperatures. Exposure to moisture can lead to degradation and reduced strength.
- **Covered Storage Area:** If possible, store geogrid rolls indoors or under a covered area to protect them from rain, snow, and other weather elements. If outdoor storage is unavoidable, cover the rolls with waterproof material.
- **Flat Surface:** Place geogrid rolls on a flat surface to prevent deformation or damage to the product. Avoid stacking heavy objects on top of the rolls, as this can cause distortion and compromise performance.
- **Proper Handling:** Handle geogrid rolls carefully during transportation and storage to avoid tears, punctures, or creases. Use appropriate lifting equipment and avoid dragging the rolls across rough surfaces.
- **Avoid Exposure to Chemicals:** Keep geogrids away from chemicals, solvents, oils, and other substances that may cause damage or deterioration. Store them in an area free from potential contaminants.
- **Stacking:** If stacking geogrid rolls, do so in a stable manner, with heavier rolls at the bottom and lighter rolls on top. Ensure that stacks are not too high to prevent collapse or damage to the rolls at the bottom.
- **Labeling and Identification:** Properly label each roll with relevant information such as product type, specifications, production date, and manufacturer details for easy identification and inventory management.
- **Regular Inspection:** Periodically inspect stored geogrids for any signs of damage, deterioration, or environmental exposure. Address any issues promptly to prevent further degradation.