



Reduce Access Road and Crane Pad Costs by 50% Using Tensor® Geogrids In Wind Farm Applications

THE CHALLENGE

Wind farms are traditionally found in remote locations. In many cases, the underlying soil conditions are unfavorable, characterized by soft clay, silt or peat with high groundwater tables.

This presents a particular challenge to the contractor when constructing access roads with heavy vehicle traffic. An even greater test occurs in areas where the wind turbines are located. Heavy lifting equipment, required to position the turbines, exerts high pressures on the underlying soft subgrade.

THE TENSAR ADVANTAGE

By incorporating Tensor Geogrids, a mechanically stabilized layer is created for the haul/access roads and working areas. Construction savings of up to 50% can be realized. This results in less excavated material needed to be taken away from the site, and less aggregate needed to be imported, placed and compacted.

LESS AGGREGATE: Accepted design methodologies have demonstrated that the required aggregate thickness can be reduced by up to 60%. With Tensor geogrid, there is little to no undercut and it's possible to build these structures at grade.

INCREASED SPEED OF CONSTRUCTION: The installation process for geogrids is extremely straightforward. Using less aggregate leads to quicker installation when compared to other solutions that use conventional soil stabilization techniques.



AVOID OVER-EXCAVATION: Traditional stabilization often involves expansive excavation and disposal of the uppermost subgrade soils. With Tensor geogrid, there is little to no undercut and it's possible to build these structures at grade.

ELIMINATE UNCERTAINTIES ASSOCIATED WITH CHEMICAL STABILIZATION: Apart from the obvious environmental concerns, chemical treatment of the subgrade requires optimum temperatures and dry weather conditions be met. This can lead to delays in the construction.

LOWER COSTS: Using less aggregate with an increased speed of construction yields significant cost savings on wind farm projects. These cost savings increase with greater traffic loads and weaker subsoil conditions.



MAXIMIZE TIME AND COST SAVINGS WITH TENSAR+ DESIGN SOFTWARE

Tensar+ design software incorporates the benefits of Tensar geogrids into industry-accepted design methodologies. Based on rigorous full-scale testing, it provides specification generation along with educational resources to help users make more informed decisions. You can easily compare design alternatives, automatically generate a performance spec, calculate time, cost, carbon savings, and other sustainability metrics.

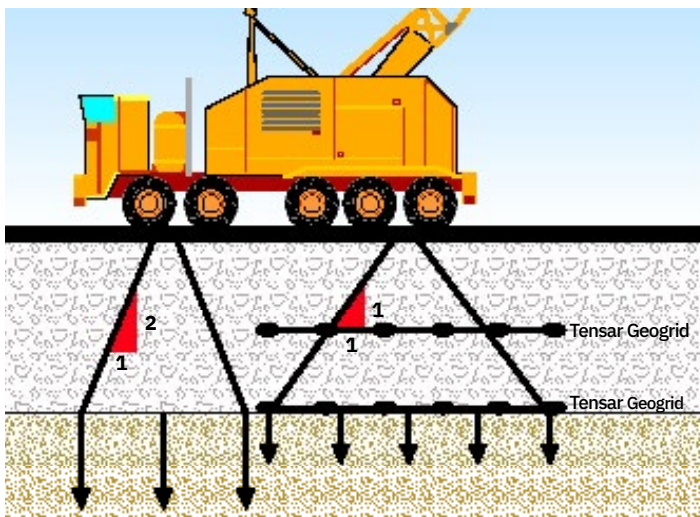
For the wind farm developer, Tensar+ Software allows the removal of uncertainties associated with the cost and reliability of access road construction. This is particularly important when dealing with heavy loads and weak soils, as it also allows the developer to minimize the cost of these components.

HEAVILY LOADED AREAS

The locations where turbine components are unloaded and lifted into position often present the greatest challenge to avoiding subgrade failure. In these areas, multiple layers of Tensar Geogrids can be used to strengthen the aggregate section.

The stiffened aggregate results in an enhanced load distribution beneath the large static and dynamic loads imposed by the lifting equipment. This increases the factor of safety against a bearing capacity failure in the subgrade.

Put Tensar+ to work on your next project. Access this free, cloud-based software by visiting TesarPlus.com



Wider load spread results in less stress on the subgrade. Tensar Geogrid

MAPLE RIDGE WIND FARM LOWVILLE, NEW YORK

THE CHALLENGE: Over 23 miles of access roads were required to build the 120 wind turbines included in Phase I of this wind farm project. Unfavorable ground conditions were encountered and the initial solution using a geotextile had proven unsuccessful. The contractor needed a fast solution.

THE SOLUTION: Tensar’s local representative was able to offer an engineered, cost-effective solution to the soft ground problems within 24 hours of visiting the site in response to the contractor’s “SOS” call. In total, 453,000 square yards of Tensar Geogrid have been used successfully on this site.



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