

JUNCTION STRENGTH IN MSE STRUCTURES

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This Technical Note is to address Junction Strength regarding the use of TenCate Miragrid® polyester geogrid in MSE structures.

Miragrid® geogrid complies with the most recent edition of AASHTO LRFD Bridge Design Standards. The TenCate Technical Note “Determination of the Long Term Properties for Miragrid® XT Geogrids” dated May 18, 2010 may be found on our website and is used to demonstrate compliance with the FHWA NHI Reports and the AASHTO NTPEP report on Miragrid®.

http://www.tencate.com/TenCate/Geosynthetics/documents/Tech%20Notes/TN_ltdsmiragrid0510.pdf

Junction Strength is not a required design parameter in MSE Structures.

Miragrid® is a PVC coated polyester (PET) geogrid with “bundled high tenacity PET fibers in the longitudinal load carrying direction” as described on Page 2-17 of the FHWA NHI-10-024 Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes manual.

In the reinforced backfill zone, stress transfer between the soil and Miragrid® takes place through friction on the geogrid. Design in MSE structures is based on soil interaction coefficients determined from ASTM D6706 Pullout Test Method. Junction Strength is not utilized in MSE design in accordance with FHWA / AASHTO design requirements. The soil interaction properties for Miragrid® are shown on page 8 of the TenCate Technical Note “Determination of the Long-Term Properties for Miragrid® XT Geogrids” dated May 18, 2010. As listed in the technical note, the Coefficient of Shear Stress Interaction and Coefficient of Direct sliding varies from 0.7 to 0.9 dependent on soil type. These values are consistent with all geogrid types and in compliance with FHWA/AASHTO standards.

Miragrid® has been reviewed as part of the AASHTO NTPEP program as shown in NTPEP Report 8505.3 Final Product Qualification Report for Miragrid® XT Geogrid Product Line dated March 2008. This report is available on the NTPEP website.

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