

## **GSI W-32 Webinar Entitled: “Sustainability with Geosynthetics”**

### Webinar Overview

There is a tremendous amount of infrastructure throughout the world. As it ages it gives us an opportunity to evaluate how well it was made and what was the benefit -cost of the project as a whole. In an effort to continuously improve, we have many case histories to critique. An added consideration to the overall success of the project is its relative sustainability, which refers to a comparison of the amount of energy (referred to as ‘embodied carbon’) of a design option compared to an alternative design option. With the increasing emphasis on sustainability for civil engineering design and construction projects, geosynthetics are not only viable, but also competitive in road construction and repair applications. Geosynthetics (with specific emphasis on relative sustainability) should be used to reduce or replace conventional construction materials, such as concrete, steel, clay, sand, gravel, graded soil filters, and rip rap. Geosynthetics are a classification of synthetic materials that have been successfully utilized in geotechnical engineering transportation and environmental applications in the United States and throughout the world for over 50 years (Koerner,..). Geosynthetics include a wide range of products such as geotextiles, geonets, geomembranes, geogrids, geosynthetic clay liners, geofabric, geocells, geopipes, and geocomposites.

### Learning Objectives

- Understand construction management with geosynthetics
- Learn to design and build more efficiently by using geosynthetics
- Understand the most important factors affecting long term performance of projects

### Webinar Benefits

1. Learn benefit cost analysis of Geosynthetics
2. Understand levels of embodied carbon (EC) generated from conventional construction  
Material design
3. Understand comparable levels generated from equivalent geosynthetic designs
4. Apply knowledge to environmental, transportation, hydraulic and geotechnical applications

### Intended Audiences

- Consulting engineers and designers
- Geosynthetic testing laboratory personnel
- Federal, state and regional environmental engineers
- Private and municipal land developers, architectural and landscape designers
- Manufacturers of geosynthetic materials
- Contractors and installers of geosynthetics

## Specific Topics Covered

1. Background and Methodology
2. Sustainability related to Geosynthetics
3. Models for sustainability
4. Applications in environment, transportation, hydraulic and geotechnical.
5. Summary-to-Date (work is ongoing)

## Webinar Instructor

Dr. George R. Koerner is the current director of the Geosynthetic Institute, a position that he has held since 2014. George's interest in geosynthetics spans his entire professional life from undergraduate work in the 1980's to the present. He holds his PH.D. in Civil, Architectural and Environmental Engineering from Drexel University in Philadelphia. George's master thesis was on direct shear testing of geosynthetic interfaces and his doctoral dissertation was on landfill leachate clogging of soil and geosynthetic filters. Both are regularly cited to this day.

Dr. George Koerner is a Professional Engineer in both Pennsylvania and New Jersey, and is an ASQC Quality Auditor. During his 30-years of geosynthetic activities, Dr. Koerner's output has been tremendous and he has to his credit the following publications:

- Books Edited or Co-Edited – 15
- Journal Papers – 18
- Symposium and Conference Publications – 40
- Book Chapters and Published Reports – 4
- Miscellaneous Articles – 30

The Geosynthetic Institute is a nonprofit research and development organization dedicated to the proper use of geosynthetics in its myriad applications. As director of the Geosynthetic Institute, Dr. George Koerner is also in charge of the laboratory accreditation and inspection certification programs.