**GSI W-31 Webinar Entitled:**
**"Testing of Geosynthetics"**

Geosynthetics have been developed to offer a quality-controlled, manufactured alternative to materials traditionally used in geotechnical and civil engineering such as concrete, rocks, and clay. Geosynthetics include geotextiles, geomembranes, geogrids, geosynthetic clay liners, and drainage geocomposites.

Many test methods have been developed over the years to characterize the properties and performance of geosynthetics: physical, mechanical, hydraulic and durability. These methods have been developed under the jurisdiction of ISO and ASTM International and they are described in great detail. The course discusses physical, mechanical, hydraulic and endurance properties from a laboratory perspective. It also discusses index and performance tests and how geosynthetics interact with soils.

The different formulations of geosynthetics and the degradation mechanism for aging polymers is addressed as well as trends. Diagrams and pictures of varies test methods and apparatus used, including the Seeger and Nadler pressure vessel, is discussed during the course. The influence of SIM and TTS data on geosynthetic testing is also explained.

Upon successful completion of the course the learner will be able to:

- Understand laboratory setup and specimen preparation.
- Distinguish between the 4 major testing properties; physical, mechanical, hydraulic and endurance and recognize testing procedures for each.
- Be knowledgeable on different index puncture methods and realize a need for better puncture performance with geosynthetics.

Webinar Benefits

1. Learn importance of Structural Information Model (SIM) and Theory of Technical Systems (TTS) to testing of geosynthetics.
2. Understand the different properties of testing
3. Know how to set up a laboratory and prepare samples properly.
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

Outline

1. Introduction – why we test and standards used
2. Properties of geosynthetics (physical, mechanical, hydraulic and endurance)
3. Specimen Preparation
4. Testing Examples
5. Summary and Conclusion

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 of applications. As director of the Geosynthetic Institute, Dr. George Koerner is also in charge of the laboratory accreditation and inspection certification programs.