

**GSI W-17 Webinar Entitled:
“Geosynthetics in Erosion Control”**

Webinar Overview

The estimated society cost of various types of landslides in the U.S. is estimated at \$2-5B and worldwide might even approach \$10B. The percentage triggered by water induced (either external or internal) erosion is certainly the major contributor. While the mechanisms of soil erosion are well-known (consisting of detachment, transportation and deposition) its control has many different materials possibilities. This webinar will present the various approaches using;

- temporary biodegradables (natural materials)
- long-term polymeric (geosynthetics)
- hard armor systems (rock, concrete, etc.)

Focus will be on the second category and particularly on turf reinforcement mats and product testing including ASTM (small scale), TRI (large scale) and field test sites will be illustrated.

Two design approaches will be shown with numeric examples. They are the USLE method for slopes, and velocity/shear stress methods for channels and ditches. They will be critiqued accordingly.

A summary of the webinar and recommendations (including turf reinforcement mat and geocell specifications) will be offered including an appeal for instrumented field monitoring research and subsequent analytic modeling.

Learning Objectives

Participants will become familiar with the classification methodology for this enormous group of products used under the general term of erosion control and mitigation. The status of testing will be described and illustrated for both index and performance testing. Full-scale field acceptance evaluation will be mentioned. Lastly, design for the two quite different scenarios, slopes versus channel/ditches will be illustrated with numeric examples. Recently approved product specifications for turf reinforcement mats and geocells will be presented along with testing details. Conclusions and recommendations will be offered accordingly.

Webinar Benefits

1. Understand the wide range of available products
2. Learn how to classify them in logical categories
3. Learn how they can and do provide erosion control
4. Learn the different types of available tests
5. Understand the different large-scale performance tests

6. Learn available design methods for slopes versus channels/ditches

Intended Audiences

Public and private owners of housing, industrial, recreational and related projects in terrain where slopes are natural or constructed; consultants and designers in the private sector; regulators and agency personnel at the federal, state and local levels; geosynthetic manufacturers and their representatives; geotechnical and geosynthetic testing organization personnel; contractors and installers of erosion control systems; academic and research groups; and others desiring technically related information on this important aspect of our constructed environment.

Specific Topics Covered

1. Concerns, Mechanisms and Products
2. Test Plots in Cincinnati
3. Large-Scale Laboratory Tests
4. Full-Scale Field Test Sites
5. Design Guidance
6. Summary and Recommendations

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.