GSI W-30 Webinar Entitled:
"Lifetime Durability of Geosynthetics"

Webinar Overview

The need to know the approximate lifetime of Geosynthetics is paramount in deciding what type of geosynthetic will be used and for what application. This webinar numerically quantifies the lifetime of buried HDPE geomembranes. Several other types of geosynthetics in exposed conditions are discussed, including examples involving geotextiles, geomembranes, erosion control materials and geogrids.

This presentation focuses on half-life estimates from both the field and laboratory data. These estimates will be given for geotextiles, geomembranes, erosion control materials and geogrids. The importance of these estimates and the roles that they play will also be discussed.

Learning Objectives

- Understand the importance of geosynthetic durability
- Describe the laboratory procedure simulations with respect to predicting in-situ conditions
- Give covered lifetime results for the most commercially used geomembrane (HDPE) in waste containment applications
- Recognize differences of, and limitations within, laboratory weathering devices
- Give lifetime results for different exposed geosynthetics
- Describe how laboratory results can be transitioned into site specific results
- Understand how all types of geosynthetics can be evaluated accordingly

Webinar Benefits

1. Understanding methodology of predicting lifetime estimates using laboratory incubation
2. Learn how to use Arrhenius modeling
3. Learn the differences between laboratory and field site estimates and how estimated lifetimes can be obtained

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. Covered Lifetime Using Lab Simulation
3. Results for Covered HDPE Geomembranes

4. Exposed Lifetimes Using Weathering Devices
5. Results for Different Exposed Geosynthetics
6. Summary-to-Date (work is ongoing for other situations)

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.