**GSI W-28 Webinar Entitled:**
**"Geomembrane Puncture"**

## Webinar Overview

The need for geomembranes to remain free of holes while in service is paramount to their long-term good performance as hydraulic barriers. It is imperative that we protect the geomembrane from puncture by stones, falling objects and gravel to assure continuity. This has been recognized for many years but we are amazed at how casual we see even the technical community address this issue during design and construction.

There are presently several methods available for selecting geomembranes with good puncture resistance and the subsequent variety of geosynthetics to protect them. This presentation, focuses on a range of both short-term and long-term tests focused on geomembrane puncture. The presentation will conclude with establishing the maximum amount of geomembrane strain at yield where no breaks or holes produced in in the geomembrane is identified.

## Learning Objectives

Participants of this webinar will be exposed to various test methods, both short term and long term, which are used to determine puncture resistance in geomembranes. Illustrations will be used to help understand how to perform these test methods.

## Webinar Benefits

1. Understand various types and differences of geomembranes and geosynthetics.
2. Understand the many applications used for hydraulic barriers
3. Learn the essential test methods for geomembrane puncture
4. Learn how to properly run these tests.
5. Understanding the maximum amount of geomembrane strain allowed

## Intended Audiences

- Consulting engineers and designers
- Geosynthetic and soils testing laboratory personnel
- Field CQA and CQC personnel for both materials and installation practices
- Owners and operators of solid and liquid waste facilities as well as many other public facilities
- Federal, state and local regulators in both environmental and transportation sectors of their respective mandates

## Specific Topics Covered

1. Overview and Applications
2. Index Puncture Tests
3. Static vs Dynamic puncture
4. GSI Hydrostatic puncture study – 3 parts
5. BAM cylinder test
6. Deformation Strain limits
7. Case histories of field exposed geomembranes
8. 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 applications. As director of the Geosynthetic Institute, Dr. George Koerner is also in charge of the laboratory accreditation and inspection certification programs.