

**GSI W-21 Webinar Entitled:
“A Brief Overview of Geosynthetics and Their Major Applications”**

Webinar Overview

Geosynthetic materials presently represent a \$8B worldwide industry. They are made from various polymers which begin as natural gas or oil which is fractionated into specific gases, in turn polymerized into the resins used to make geosynthetics. Each of the various types of geosynthetics are described and illustrated.

Transportation and geotechnical applications are first presented wherein filters, wall/slope reinforcement, wick drains and erosion control are described. Geoenvironmental applications including landfill liner/cover systems, vertical barriers, surface impoundment liners and heap leach liners are next. This is followed by hydraulic engineering applications including waterproofing of dams and canals, reservoirs liners and floating covers, tunnel waterproofing and pipe remediation. Finally, private development applications are described. This includes building foundations, recreational facilities, agriculture, aquaculture, shale gas operations and disposal of coal combustion residuals.

Concluding remarks as to sources of information and summary comments conclude the webinar.

Learning Objectives

Participants will gain insight as to how polymers and geosynthetic resins are made. This leads to the individual types of geosynthetics currently in use. Having the materials, the plethora of applications follow. They are grouped into four categories: transportation/geotechnical, geoenvironmental, hydraulic engineering and private development. Concluding comments will then assess the entire status of these exciting new materials.

Webinar Benefits

1. Understand the basic source materials for use in manufacturing geosynthetic materials
2. Understand and categorize the various geosynthetic materials insofar as their primary function is concerned
3. All applications, of which there are many, will be assembled into four general categories for ease of communication and are presented accordingly
4. Appreciate the current status of the situation and the vast array of opportunities that exist

Intended Audiences

- New employees (and those interested) in geosynthetic materials
- Those involved and interested in infrastructure applications
- Those involved and interested in geoenvironmental applications
- Those involved and interested in hydraulic engineering applications
- Those involved and interested in private development applications

Specific Topics Covered

1. Geosynthetic materials
2. Transportation and geotechnical applications
3. Geoenvironmental applications
4. Hydraulic engineering applications
5. Private development applications
6. Concluding remarks

Webinar Instructor

Dr. Robert M. Koerner's (Professor Emeritus of Civil Engineering at Drexel University and Director Emeritus of the Geosynthetic Institute) interest in geosynthetics spans over thirty years of teaching, research, writing and advising. He holds his Ph.D. in Geotechnical Engineering from Duke University. He is a registered Professional Engineer in Pennsylvania, a Distinguished Member of ASCE, a Diplomate of the GeoInstitute and a member of the National Academy of Engineering. Bob has authored and co-authored about 700 papers on geosynthetics and geotechnical topics in journals and at national and international conferences. His most widely used publication is the sixth edition of the textbook entitled "*Designing with Geosynthetics*". He is the founding director of the Geosynthetic Institute which is a nonprofit research and development organization dedicated to the proper use of geosynthetics in its myriad applications. The institute also provides laboratory accreditation and inspection certification programs.