

**GSI W-5 Webinar Entitled:**  
**“Geosynthetics in Hydraulic Applications”**

Purpose and Background

By 2040 it is estimated that two billion people (25% of the world’s population) in 60 countries will have inadequate fresh water. This alarming prediction suggests that water must be hydraulically transferred from locations of excess to those in need. This webinar will make the point that geosynthetics (primarily geomembranes) will play a pivotal role in this regard. From waterproofing dams, to canals, to reservoirs liners and covers, to tunnels and then pipes, the webinar proceeds in like manner.

Each specific application is explained and illustrated insofar as the latest technology is concerned. Even bold new initiatives of fresh water being transported by sea in mega-geomembrane bags will be illustrated.

Each section of the webinar has its own summary leaving a conclusions and recommendation section for the end. Here the state-of-the-practice will be presented along with the suggested “key to acceptance” status being mentioned.

Learning Objectives

Since everyone is aware of the inadequacy of fresh water in many areas, along with an abundance in other areas, the distribution/transportation of it over long distances without leakage becomes critical. This webinar focuses directly on the geosynthetic options that are involved. Participants will learn about waterproofing of existing and new dams as well as parallel applications with canals, reservoir liners, reservoir covers, tunnels and pipelines. The current status of these myriad applications will be presented from the perspectives of market penetration, obstacles to use, incentives and level of acceptance.

Webinar Benefits

- Learn of the statistics of the fresh water crisis
- Learn about waterproofing of existing and new dams
- Learn about waterproofing of existing and new canals
- Learn about waterproofing of reservoir liners
- Learn about floating covers for reservoirs
- Learn about waterproofing existing and new tunnels
- Learn about different methods for trenchless pipe construction and remediation

### Intended Audiences

Public and private owners of dams, canals, reservoirs, tunnels and pipelines insofar as our hydraulic infrastructure is concerned. Federal, state and regional hydraulic, geotechnical, and geoenvironmental engineers; engineers from municipal districts and townships; private and municipal land developers; general civil consulting engineers; testing laboratories servicing these organizations; manufacturers and representatives of geosynthetic materials; contractors and installers of geosynthetic materials; academic and research groups; and others desiring technically related information on this important aspect of our hydraulic infrastructure.

### Specific Topics Covered

1. Background
2. Waterproofing of Dams
3. Canal Linings
4. Reservoir Linings
5. Reservoir Covers
6. Tunnels and Pipes
7. Conclusions and Recommendations

### 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 650 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.