

## **GSI W-27 Webinar Entitled: “Applications and Design of Geotextile Tubes”**

### Webinar Overview

Geotextile tubes are large factory fabricated textile tubes with multiple access ports for introduction of the infilled material which is generally dredged and in slurry form. Sand or gravel is used for erosion control, whereas soil fines and sludges are used for dewatering and/or decontamination. The tubes themselves have progressed up to 5 m in diameter and the applications have grown accordingly.

After an overview, a nine-part design procedure is presented which represents the current state-of-the-practice. It then proceeds with details of adding decontamination materials to the slurries for the purpose of properly handling contaminated river and harbor sediments. Several economic examples are presented. The summary will counterpoint the various applications against one another.

### Learning Objectives

Participants will learn the fabric manufacturing details, including testing, as well as design idiosyncrasies of geotextile tubes. The design has indeed progressed to where confidence of success is readily achieved. Current extensions into adding deflocculants to reduce “filter cake” formation and neutralizing hazardous constituents of fine-grained sludges will be explained accordingly.

### Webinar Benefits

1. Understand manufacturing details, including seams, of textile tubes
2. Understand the various applications for geotextile tubes
3. Learn details of the complete design process through nine separate items
4. Learn about chemical deflocculating materials
5. Learn about additives to neutralize contaminants
6. Counterpoint applications-to-design-to performance of this exciting field of geosynthetic engineering

### Intended Audiences

Public and private owners of locations subject to erosion, as well as contaminated harbor and riverbed sediments 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. Concept and Background of Geotextile Tube
2. Various Applications
3. Design Considerations
  - 3.1 Your Partner, The Dredger
  - 3.2 Movement of Tubes
  - 3.3 Tensile Strength of Fabrics
  - 3.4 GeoCOP Computer Code
  - 3.5 Fabric Strength
  - 3.6 Tensile Strength of Seams
  - 3.7 On-Site Performance Tests
  - 3.8 Chemical Coagulants
  - 3.9 Additional Design Details
4. Dewatering “plus” Decontamination
5. Summary 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 forty 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 750 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.