

## FGI Offering LIVE Virtual Panel Discussion Webinar - Subgrade Preparation & QA/QC for Geomembranes

Tuesday, December 8, 2020 - Noon CST  
Free to Industry Professionals & Students  
1.0 PDH

This second Live Panel Discussion will assemble five industry leaders to answer questions about subgrade requirements, problems, and acceptance prior to geosynthetics installation and proper CQC and CQA procedures for fabricated geosynthetics. In particular, attendees will gain an understanding for preparing and reviewing CQC and CQA plans, conducting CQC/CQA installation observations and tests, and reporting the CQC and CQA results to relevant parties. This should result in a lively discussion about current trends in subgrade preparation and CQC and CQA procedures.

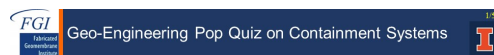


### Panelists:

John Allen, P.E. (Owens Corning)  
Matthew Kemnitz (Leak Location Services)  
Kennedy Garber (Hallaton Environmental Linings)  
Brian Baillie (TenCate Geosynthetics)

Moderator: Timothy D. Stark (University of Illinois at Urbana-Champaign)

### Register For Webinar



## FGI Creates Geo-Engineering Pop Quiz Series

Test your knowledge in the FGI's weekly Geo-Engineering Pop Quiz Series. Each Thursday, Dr. Timothy Stark releases a new video question to the geosynthetics and geotechnical engineering industry. He then provides the answer and brief explanation. Follow us on [Linked In](#) and [Twitter](#) to see the weekly video questions. Or view all of the pop quiz videos on the [FGI Website](#).

### View Pop Quizzes Here

## FGI Creates Two New Calculators

### Geomembrane Defect Leakage Calculator:

This calculator estimates the leakage through geomembranes and composite liners with and without geomembrane defects/holes. The calculator illustrates the importance of intimate contact between the geomembrane and compacted

subgrade or soil liner via different levels of contact. The effect of wrinkles on leakage rates is also quantified using a database of wrinkle dimensions for a number of common geomembranes, which shows the presence of wrinkles can significantly increase leakage rates.

Factory Fabrication Installation Cost Calculator - October 2017  
 By: Timothy D. Stark, Ph.D., P.E., D.GE, F.ASCE  
 Fabricated Geomembrane Institute  
 University of Illinois at Urbana-Champaign

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Input Parameters  
 Calculated

Factory Fabrication Installation Cost Estimates - Large Panels

Price	0.00000	Costs Here - see field data
Deployers/shape factor	1.00	Costs Here - see field data
Panel Width	200.0	e.g., range 0.75 (6ft) up to 1.25 (16ft)
Panel Length	600.0	e.g., 10-40 mil reinforced FHM
Number of Panels	20	e.g., for 40 mil reinforced FHM
Feet of Back Seams	8000.0	e.g., for 40 mil reinforced FHM
Feet of Cross Seams	3000.0	Feet, back seam length (divided by panel width)
Total Seam Length	11000.0	Total seam length (feet of cross seam length)
Length of Tapes Seams	1000.0	Feet, e.g., welded connection to existing liner
Peak Seams Speed	20.0	feet/minute, assumed speed of primary seam welder per minute
Hours per Day	8.0	hours per work day on site
Days to Install per Day	2.0	days to install per work day on site
Set Up Time	1.0	e.g., basic set up for factory production set up, ranging from 1 to 2 days depending on the length of the project
Shutdown Time	2.0	e.g., basic set up for factory production setting assuming shutdown 0.5-2.0x actual shutdown time
Deployment Time	0.1	e.g., days to deploy & install geomembrane panels (assumes 0.25 hour per panel)
Number of Details	4	large penetrations
Time per Detail	1.0	hours
Detail Time	4.0	e.g., added days for detail work
Total Days on Site	6.0	e.g., minimum DC included
Travel Time to Site	0.0	e.g., modification charge
Training Days Pre-Start	0.0	e.g., site specific safety training
Days Total	6.0	e.g., minimum DC included
Non-Work Days	0.0	vacation and other member delays. Depending on quantity of project and location, this ranges from 2-5
Days Released	0.0	vacation and other member delays. Depending on quantity of project and location, this ranges from 2-5
Supervisor	1.0	\$ 80.00 non-member 60
DC Tech	2.0	\$ 40.00 non-member 60
Welding Trade	2.0	\$ 40.00 non-member 80
Laborers	6.0	\$ 20.00 non-member 180
Extra Hours	1.00	\$ 100.00 non-member 10
DC Tech	1.00	\$ 75.00 non-member 10
Welding Trade	2.00	\$ 40.00 non-member 20
Laborers	6.0	\$ 20.00 non-member 60

**Installation Cost Comparison Calculator:**

This calculator estimates the cost of installation, testing, and third party inspection for factory and field fabricated geomembranes. The calculator considers the differences in labor rates, field installation times, length of field seams required, seam and other testing, equipment, workforce size and per diem, and third party inspection costs between factory and field geomembranes to quantify the cost benefits of factory fabrication and modular construction.

[Download the Calculators HERE](#)

[Watch Videos on Using the Calculators HERE](#)

[Download Geomembrane Calculators](#)

**FGI Records New Podcasts**

Join Tim Stark (Professor of Civil Engineering and Technical Director of the FGI) and Jen Miller (Coordinator of the FGI) as they discuss emerging geosynthetics industry trends and news. Podcasts are available for download from the FGI Website or various online streaming services, such as Spotify, Breaker, Anchor FM. New episodes include:



- Episode 16: Panel Discussion on Fabricated Geosynthetics
- Episode 17: Yeager Airport RSS Failure Case History
- Episode 18: Geomembrane Wrinkles in Containment Applications
- Episode 19: US EPA Reconsideration of CCR Regulations Involving Geosynthetics

[Listen to Podcasts](#)



**FGI Project Spotlight: Chambers Dam Reservoir Remediation Phase II**

**Geomembrane Application:** Raw Water Storage  
**Materials Used:** 16oz. Geotextile and 45 mil Black/Tan scrim reinforced LLDPE Geomembrane  
**Size of Project:** 1,833,000 SF  
**Member Company:** Raven CLI Construction

**PROJECT DESCRIPTION**

Phase II of the Chambers Reservoir project consists of upgrading an existing earthen raw water storage reservoir and fabricating and installing a 45 mil Black/Tan - Scrim reinforced LLDPE geomembrane with a 16oz. geotextile underlayment for protection. Furthermore, 6,600 LF of black safety ladders were installed in various spots around the perimeter to ensure safety while accessing or egressing the reservoir.

**LESSONS LEARNED**

The use of the scrim reinforced LLDPE greatly reduced slope creep & wrinkles at the toe of slope that is common for reservoirs of this size. Furthermore, the use of intermittent berms across the floor prevented erosion and subgrade issues from rain events throughout the installation process.

#### HOW THE USE OF FABRICATION IMPROVED THIS PROJECT

Large prefabricated panels provided the ability to maximize production and shorten the overall installation time greatly - something that was crucial to beat owner deadlines and the fall/winter weather common for Colorado.

### FGI's Website - #1 Resource for Fabricated Geosynthetics

- Online PDH Credit Program
- Installation Details & Drawings
- Audio and Video Podcast Series
- Pond Leakage Calculator
- Panel Weight Calculator
- Webinar Library
- Member Directory
- Videos of ASTM Factory & Field Test Methods
- Latest Specifications & Guidelines
- Material and Equipment Guides
- Technical Papers & Journal Articles
- Industry News and Events
- Photo and Video Gallery



#### Visit FGI Website

Fabricated Geomembrane Institute | [fabricatedgeomembrane@gmail.com](mailto:fabricatedgeomembrane@gmail.com) |  
[www.fabricatedgeomembrane.com](http://www.fabricatedgeomembrane.com) | 217 333-3929

STAY CONNECTED



Fabricated Geomembrane Institute | University of Illinois at Urbana-Champaign, Dept. of Civil & Environmental Engineering , 205 N. Mathews Avenue,  
 Urbana, IL 61801

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