

International Association of Geosynthetic Installers

# IAGI Newsletter

## A Note from IAGI's President - Dennis W. O'Brien

Professionals in our industry are active participants and dedicated to on-going improvement.

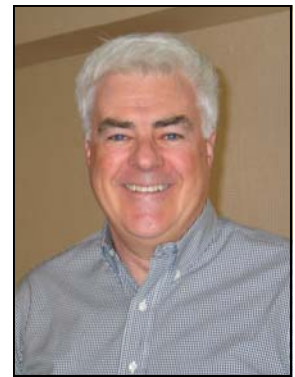
I'm pleased to announce that IAGI recently has awarded Approved Installation Contractor (AIC) status to three member companies: American Environmental Group Ltd.; Layfield Environmental Systems Ltd.; and Atlantic Poly Liners Inc. These companies passed the AIC application process and have proved that they are committed to better quality workmanship. Congratulations to all! Additional companies are currently in the review process and I anticipate announcing more AIC companies in the next newsletter.

Another sign of industry support, more than 1,000 people visited with 75 exhibitors at Geosynthetics 2007 in January. At the conference, IAGI presented "What the IAGI Approved Installation Contractor Program Can Do For You" on Jan. 17 to an eager crowd full of inquiries about this attention-grabbing company designation.

IAGI also held its General Assembly at Geosynthetics 2007. During the General

Assembly, both members and non-members came together to exchange updates on the current projects of our association, to discuss ideas for the future advancement of IAGI, and to share in industry fellowship. I'm encouraged by our General Assembly participation and was thrilled to share the happenings of our great association.

The PVC geomembrane industry is making a push to complete their own Certified Welding Technicians exam. It is expected that the PVC CWT will be released around early Fall 2007. IAGI has been asked by companies that primarily install PVC to develop this test so they can participate in the AIC program. If you wish to contribute to this test development or have questions about it,



**Dennis W. O'Brien, IAGI President**

contact Laurie Honnigford at [iagi@iagi.com](mailto:iagi@iagi.com).

IAGI is proud to work diligently with its members to continue the growth of our industry and this profession.

*Dennis W. O'Brien*



### Inside this issue:

<b>AIC Education</b>	<b>2</b>
<b>GeoAmericas 2008 Update</b>	<b>3</b>
<b>Industry News</b>	<b>4</b>
<b>Geomembrane CQA: Poke Some Holes</b>	<b>6</b>
<b>How Would You Like Your IAGI News?</b>	<b>7</b>



**Manufacturer of Quality Seaming  
and Testing Equipment**

Spare Parts and Service for Most Brands  
Technical Services

**(888) 324-9353 or (530) 621-3200**

[www.demtech.com](http://www.demtech.com)

Ask Demo Dave about our trade-in program.

## Approved Installation Contractor's greatest education



As with any specification's initiation, there exists something of a chicken and the egg scenario. In the case of the Approved Installation Contractor (AIC) program, we need to deliver the information to contractors and engineers so they can

incorporate an AIC-approved contractor in their project specs. And you need enough companies ready to perform the work before engineers will spec AIC installers.

These items are occurring simultaneously.

Many IAGI members have already initiated or passed the AIC approval process. While this occurs, all members might tout the benefits of this program to the general contractors and engineers who will benefit greatly from it. They'll have AIC to lean upon in their specs.

But they need to know about

it—why it exists and why it will help them. As installers, you are uniquely positioned to explain the program's benefits to them.

The conversation between communities of installation contractors and the people they do business with—all those GCs and engineers—is continuous and provides many opportunities for raising awareness of the AIC program and how it delivers greater technical and financial security in the execution of a project. We hope you will join this program and its education mission.

### The Benefits

The program's intent is clear: make not just experience but professionalism, readiness and financial stability a core element in the job bidding and approval process. This reduces risk for everyone involved—owner, general contractor, design engineer, installer, etc.

What the AIC program does is highlight and verify—through an independently audited process—the best businesses, the fittest businesses (in financial and technical soundness) for performing the installation work. This is similar to how engineers routinely use independently created specifications, such as GRI-GM13, for selecting the best materials to install at their project sites.

The AIC gives the engineer a professional check in the

job bidding process. Incorporated into a specification, an AIC-approved company requirement strengthens the engineer's due diligence by providing him proof of a company's qualifications.

### What does AIC mean?

"AIC approval tells an engineer he has certified welders—technicians capable of doing the job," said Anne Steacy of Steacy Environmental, Houston. "It tells him he has a bondable company. He may not require bonding, but he has a company that a bonding company has done diligence on. The installation contractor's financial status has been checked. They're bond-worthy, which means they should have the ability to finish a job even if there's a hiccup."

As anyone in construction knows, some jobs invariably have hiccups.

So AIC takes the experience requirement one step further. It's certainly not uncommon for engineers to spec the need for installation contractors who have installed, say, two million square feet of liner at three or four sites.

But knowing the financial security of the firm is not so easy. For critical sites, such as a landfill where the liner system and process accounts for a large percentage of the

### LEAK LOCATION SERVICES, INC.



Geomembrane Leak Location  
Using Electrical Leak Location Methods  
www.llsi.com (210) 408-1241

AIC, continued P. 3

## GeoAmericas 2008 update

GeoAmericas 2008, the First Pan-American Geosynthetic Conference and Exhibition, continues to gather steam. Conference organizers of this bilingual event received more than 300 abstract proposals as of the end of January 2007. This is a huge milestone for what is shaping up to be an ambitious, needed and welcomed endeavor.

GeoAmericas highlights:

- 13 accepted training lectures will be conducted in English
- 9 accepted training lectures will be conducted in Spanish
- Strong educational focus targeted to the user
- Short courses for introductory, experienced and veteran geosynthetic users
- Training and technical lectures
- GRI 21 - Hot Topics in Geosynthetics: Geosynthetics in Agriculture and Geosynthetics in Aquaculture to be hosted in conjunction with the

IAGI technical training session

### IAGI's Session

IAGI will present a technical training session titled "The Good, the Bad, and the Ugly: What does a geomembrane installation look like?"

This session is directed toward engineers, government officials, inspectors on geomembrane installations, and general contractors. English and Spanish-language instruction will be provided. Session objectives include educating attendees on containment design details that result in a good installation and those details that compromise the quality of the installation; what good seams, pipe boots, patches and trenching looks like; a hands-on practicum on what inspectors should look for in a good installation; and a discussion of design details that can cause problems during installation and ways to avoid those types of design items.

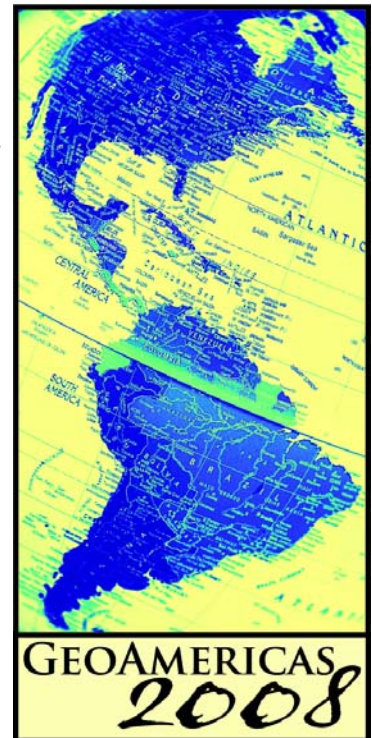
### A Better Practice

IAGI's session exemplifies

the spirit of GeoAmericas 2008, which is to address all things geo—not just research or general training or a single application. It's a recognition of the broader practice and how these varied professionals can interact and improve our individual and cross-over disciplines.

The bilingual structure of the conference will greatly help improve communication and education between the North and South Americas and bring our practices closer together. This bodes well for future developments for a global geosynthetics field and at work in a hemisphere with such great disparity in civil infrastructure and how these disparities are being addressed.

For more information on the conference, please visit [www.geoamericas.info](http://www.geoamericas.info).



### AIC, continued from P. 2

construction cost, this security is welcomed. AIC included in project specs delivers that along with the experience and technical (certified) expertise that's also desirable in a major installation.

Further, the AIC sets a baseline for installation contractor experience but

grants the engineer crucial flexibility to make the specification more stringent. So the AIC is the basic professional security, independently audited, needed to perform the required work. And where the project calls for narrower, tougher requirements, the AIC program grants that flexibility—further supporting

the general contractor and engineer.

These are benefits they need to know about. For more AIC program information visit [www.iagi.org](http://www.iagi.org), or contact Laurie Honnigford, at +1-651-554-1895 or [iagi@iagi.org](mailto:iagi@iagi.org).

## Industry News

### Geosynthetic specification resource

geosynthetica.net announces geosIndex.com, a free-access specification



resource with geosynthetic product data. The site in-

cludes all major classes of materials and applications, such as geomembrane barriers for heap leach pads, geocomposites for runoff management, and erosion control materials. Also, geosIndex allows users to sort product data by key values: puncture resistance, flow rates, longevity, and

much more. This global resource posts data for ASTM, CEN and ISO specification users.

The site is fully functional and data is being added rapidly.

geosIndex's moderators welcome feedback from IAGI's membership on additional elements and functions that would be of good use to industry clients, such as contractors, owners, design engineers and CQA professionals.

For more information on the site, inclusion in it, or to offer feedback, please contact Elizabeth Peggs, elizabeth@geosynthetica.net, +1 561 655 2060, or visit [www.geosindex.com](http://www.geosindex.com).

tractor doing his first geomembrane liner project. The decorative pond was in a park on top of a landfill. Clearly it was in the interest of the installer to find all leaks before the potentially geomembrane-challenged soil-mover had access to the liner. However, just as clearly, it was in the owner's interest to find all leaks in the finished liner as-covered, because most damage (~74%) is done during the covering process.

The installer selected the former option. Four small leaks were found at pipe penetrations and were satisfactorily repaired.

A few days later the site was revisited, just at the right time, after soil had been placed on the liner and before filling with water. The soil was probably from the landfill. It contained many fragments of glass as large as 3 or 4 in. It is highly probable, almost certain, that there will now be many holes in this liner. The installer made a wise choice of when to do the survey. The project engineer was not specific enough in the project specifications as to when to perform the survey.

In cases like this, theory is one thing but practice can be quite different—especially when issues of liability and risk are present...but are often ignored....

Industry News, continued P. 5

### For Your Geomembrane Needs



500 Garrison Road  
Georgetown, SC 29440  
[www.Agruamerica.com](http://www.Agruamerica.com)

Anne Steacy  
Regional Sales

Telephone: 713 432 0322  
Fax: 713 893 6278  
Cell: 713 203 9600

E-mail: [as-agru@sc.rr.com](mailto:as-agru@sc.rr.com)

## The World's Finest Geosynthetic Installation Equipment

Wedge Welders,  
Extruders, Test Equipment,  
and More



800-575-8171 [www.concordgeotech.com](http://www.concordgeotech.com)  
603-659-0909 [sjhobbs@concordgeotech.com](mailto:sjhobbs@concordgeotech.com)

... there was the wise installer who was required to perform an electrical leak location survey on the installed liner (no geotextile protection) but with no stipulation of before or after the cover soil was placed on the liner by an earthwork con-

Industry News, cont. from P. 4

Ian D. Peggs, Ph.D., P.E., is president of I-Corp International, Inc. Peggs can be reached at [icorp@geosynthetic.com](mailto:icorp@geosynthetic.com).

**AMCOL International introduces new PVC product lines**

CETCO Lining Technologies Group, manufacturer of environmental products and quality geosynthetic materials, announces the addition of prefabricated PVC panels to its portfolio of products for engineered liner systems for waste and liquid containment applications. These geomembranes provide performance, installation, and price benefits over other alternative geomembranes in applications such as landfill caps, animal waste lagoons, and wastewater treatment facilities. In addition, they can be combined with CETCO's Bentomat® GCLs as part of a high-performance composite liner system. These products will be marketed by the Lining Technologies Group field staff of experienced Technical Sales Managers.

In addition to liners for engineered applications, CETCO is also introducing Akwaguard® Pond Liners to complement the existing Akwaseal® Pond Liners introduced in 2005. The Akwaguard® liners are prefabricated PVC panels, while the Akwaseal® Liners are a two-in-one system incorporating both sodium bentonite clay and geomembrane water

barriers. Both of these are well suited for applications such as landscape and golf course ponds, canals, fishery ponds, stormwater impoundments, artificial wetlands, and irrigation and stock ponds.

CETCO is a wholly-owned subsidiary of AMCOL International Corp., which supplies environmental products and technical knowledge to a wide range of highly specialized markets, including wastewater treatment, lining technologies, drilling products and building materials that serve as waterproofing agents. For more information, contact Brett Danforth at +1-847-818-7952 or e-mail [brett.danforth@cetco.com](mailto:brett.danforth@cetco.com).

**GSE Lining Technology hires new business line manager**

Rick Taylor has accepted the position of Product Line Business Manager for GSE Lining Technology's StudLiner product line. GSE StudLiner is a high density polyethylene (HDPE) concrete embedment liner used in a wide range of applications to protect concrete from corrosion, erosion and mechanical damage.

Taylor will be joining Jim Henke who has a great deal of experience with both StudLiner and in the concrete corrosion protection industry. With over 30 years of experience in the Geosynthetic industry, Taylor has

worked in all phases of the industry from construction, design and distribution. Taylor obtained his Masters Degree at the American Graduate School of International Management in Phoenix.

In his new position, Taylor will be responsible for the promotion, specification and sales of GSE's concrete protection liners. He will also be instrumental in the expansion of outside manufactures representatives and installers. Taylor can be reached at GSE's Houston, Texas headquarters or at his Henderson, Nev. office at +1-800-959-0121 or e-mail [rtaylor@gseworld.com](mailto:rtaylor@gseworld.com).



**PWT**  
Plastic Welding Technologies  
INTERNATIONAL

**Greg Yaple**  
President

*Mobile:*  
(530) 409-6672  
(530) 957-5426

**Call (800) 635-6693**  
*for new info/instructional DVD*

email:  
[info@plasticweldingtechnologies.com](mailto:info@plasticweldingtechnologies.com)

on the web:  
[www.plasticweldingtechnologies.com](http://www.plasticweldingtechnologies.com)

6125 Enterprise Drive #10  
Diamond Springs, CA 95619  
Ph. (530) 622-2791  
Fax (530) 622-2704



**What is your company's news of the day?**

Submit your company's news releases and/or photos for publication to [laurie@honnigford.com](mailto:laurie@honnigford.com). Watch for the next IAGI Newsletter to see your news in print.

## New Members

### Chesapeake Containment Systems, Inc.

Ryan Kamp – President  
4622 Wilmslow Rd.  
Baltimore, MD 21210  
Phone: +1-888-505-4637  
Fax: +1-443-303-1682  
rkamp@ccsliners.com  
www.ccsliners.com

Installers of geosynthetics and HDPE pipe for solid

waste and liquid containment.

### EC Applications, Inc.

Christopher P. Fore, VP  
700 E. Taft Ave., Suite 5  
Orange, CA 92865  
Phone: +1-714-921-9848  
Fax: +1-866-475-1225  
www.ECApplications.com  
cfore@ecapplications.com

Whether providing general contracting, geosynthetic installation or erosion control, ECA is committed to excellence, quality and responsiveness. With our depth of experience we know how to save you time and money.

## Welders obtain IAGI Certification



Congratulations to **Aquatan Lining Systems; Colorado Lining Intl.;** and **Comanco Environmental** who sponsored Certified Welding Technician testing of their employed welding technicians.

IAGI developed a welder's

certification program so installers could define standards of proficiency, recognize the knowledge, experience and skills of installers, and reward those who qualify with industry recognition.

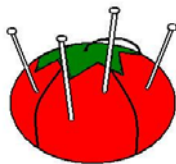
For further information, contact Laurie Honnigford, Man-

aging Director, IAGI at +1-651-554-1895 or e-mail [iagi@iagi.org](mailto:iagi@iagi.org).

## Geomembrane CQA—Let's poke some holes: Installation 4

by Glenn T. Darilek, P.E.

We continue with this series, which presents some thought-provoking maxims related to geomembrane CQA with the invitation to poke holes in these "pincushions." In this installment we are encouraged by some new responders. Their responses are below.



### Pincushion 7

For all practical purposes, if a sample passes the peel test, it will always pass the shear test. Eliminating the shear test would save time, allow a smaller sample size and less repair of the sample

area, and provide lower cost to the facility owners and rate payers, with no decrease in geomembrane seam performance.

### **Richard Thiel, P.E.**

I define a passing shear test as one that will achieve good elongation and necking in the parent material next to the weld. A minimum of 100-200% is commonly required, and a passing peel test as one that simply does not peel (or only has a very small amount of peel). I do not measure strengths at all (which could be the subject of another pin cushion). Given those definitions, a bad seam for shear (one that does not elongate but still has plenty of strength)

could be caused by overly aggressive grind marks or by overheating and crystallizing the resin in the weld zone. In both of these cases the peel test may pass (on both no-peel and by old-fashioned strength criteria), but the shear test would fail the elongation requirement. Therefore - both peel and shear tests should be required. (Note: I have not found peel tests to be good tests for requiring elongation.)

### **Jack McHugh**

I have done hundreds if not thousands of trial welds for liner QC, always trying to find the perfect weld temperatures. With the right

Pincushions, continued P. 7

**Pincushions, continued from P. 6**

temperature and speed or weld thickness, peel and shear values can be very close together. On trial welds of fusion welds I have always lobbied for five peels to one or two shears. The quality of the weld is seen in the peels, and the sheet strength is shown in the shear. So the peel and shear values show a ratio of weld quality. I have heat-tacked two pieces of liner together and passed the shear test values in specs! As far as destructive testing in labs I think with the quality of sheet nowadays, the shear on fusion welding is mostly wasted time. Years ago when sheet thickness varied so much, and texturing heat damaged sheet so badly, shear testing was a last chance to catch bad material. But the argument could be made that if shear testing was dropped completely that manufacturers may get lazy again.

As far as shear testing on extrusion welds in the lab, I advocate the usual five peels and five shears. Improper grinding or abrading of the surface can really damage the sheet. The only shear failures I have seen in the field were caused by very deep scores in the liner that got covered by the outside edge of the extruded bead but did not really bond. So the shear test was actually pulling on about half the sheet thickness. But the peel passed because the thick center of the weld bonded to both sheets and was pulling on the full sheet thickness folded over.

**Pincushion 8**

Common practice is to use an inferior extrusion weld to replace the intervening seam between the site of a failed destructive test and the locations on each side where the seam passed. This practice is likely to result in having a long extrusion weld with less strength than the dual-track fusion weld it replaced.

**Richard Thiel, P.E.**

The pincushion has a certain truth, although I would not use the term "strength," but rather something like 'durability' or 'robustness.' However, if the destructive test really did find a bad seam, then "inferior extrusion weld" might in fact be superior to the defective fusion weld.

**Jack McHugh**

The shear strength of the extrusion weld should still exceed the design specifications so I think it should be acceptable. What concerns me is the practice of some liner installers to cut off the fusion weld flap and extrude right on the fusion weld, that heat degradation has the potential to get really weak. A good installer has the tech pull a bone as each seam is completed, and if it is obvious the machine malfunctioned, like the wedge was not in the back position, the seam can be cut out and welded again. Obviously if several other panels were welded, that would not be an option. But fusion welded caps may be cheaper in the long run if the repair is very long, but of course the ends have to be extruded.

Thank you to the responders for poking those holes. Now here are some new pincushions for comment:

**Pincushion 9**

CQA measures should not just maximize any particular quality parameter simply because it is attainable (at a cost). Quality assurance measures must be selected to only verify the proper performance of the installation at an economical cost.

**Pincushion 10**

Like most other engineering designs, seam strength requirements should be based on an analysis of the worst case stresses for a seam and add a safety factor. If these levels are very easily attainable, the strength requirement can be increased to a higher value that is practically always attainable.

Please provide your brief responses to glenn@ltsi.com. Responses will remain anonymous if requested.



**Geosynthetic Services Division**  
*Proud to be the IAGI Same-Day-Service  
 Seam Testing Laboratory*

**FORENSIC ANALYSIS \*TECHNICAL SUPPORT\***

IAGI Chain-of Custody Forms Available at  
[www.GeosyntheticTesting.com](http://www.GeosyntheticTesting.com)  
 Contact: [JDettman@tri-env.com](mailto:JDettman@tri-env.com) Ph: 800-880-8378 ext.137

## How would you like to receive your IAGI News?



International Association of  
Geosynthetic Installers  
PO Box 18012  
St. Paul, MN 55118  
USA

Phone: +1-651-554-1895  
Fax: +1-651-450-6167  
E-mail: [iagi@iagi.org](mailto:iagi@iagi.org)

The IAGI Newsletter is published four times annually and is an important IAGI member benefit. This publication contains the latest news on the work of our association as well as information about what's happening with our member companies and the industry as a whole.

With increasing technology and the need for information to be available where you want it, when you want it, we decided it is time to ask you how you prefer to receive your IAGI Newsletter.

Please select an option from the choices below and e-mail [chris@honnigford.com](mailto:chris@honnigford.com) with your preferred IAGI Newsletter format/delivery by April 1, 2007.

- A. Hard copy mailed (as currently delivered).**
- B. E-mail reminder to read newsletter online.**
- C. E-mailed pdf of newsletter.**
- D. Other (Tell us your ideas.)**

Responses will be noted in an upcoming issue. Whether or not that issue is snail mailed or electronic will be up to you. Thank you for taking the time to respond.

USA  
St. Paul, MN 55118  
PO Box 18012

