

International Association of Geosynthetic Installers

IAGI Newsletter

A Note from IAGI's President - John "Robbie" Robinson

Dear IAGI Members and Friends,

As my term as IAGI President has come to an end, I want to thank all of you who have worked so hard over these past two years. I have enjoyed serving as your President, and I greatly appreciate the dedication of the IAGI Board members and Laurie Honnigford. It is because of your focus and commitment that we have had much success with programs such as the Certified Welding Technician Program and advanced innovative programs such as the Approved Installation Contractor Program.

Now is the time to cast your vote in the 2005-2006 IAGI Board elections. Board Candidates have been selected, and ballots have been sent. See page three of this newsletter for the list of candidates.

This newsletter also contains the latest information on the new Approved Installation Contractor Program. We are proud of this program and all of the work that went into making it possible. See page two for more detail.

2006 will be an exciting year for IAGI. Activities members are working on include the launch of the Approved Installation Contractor program, marketing of the Certified Welding Technician program as interest in this program continues to grow, updating of the HDPE Installation document, planning IAGI's participation in Geosynthetics 2007, a membership survey, starting a long range plan for IAGI, and so much more.

Ours is a dynamic organization, and all of our programs and activities are possible because of the dedication and talents of our members. See page seven for notes from the recent IAGI General Assembly in Las Vegas for more information on what IAGI has been up to over the past year.

Thank you again for allowing me the opportunity to serve

on this wonderful Board. I wish all of you well in your personal and professional lives in 2006.



John "Robbie" Robinson



John K. "Robbie" Robinson will serve on the 2005-2007 IAGI Board as Immediate Past President.



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IAGI introduces new Approved Installation Contractor program



The International Association of Geosynthetic Installers (IAGI) is pleased to unveil its new Approved Installation Contractor program. The goal of this program is to promote industry growth and provide better quality workmanship.

IAGI developed this standard of performance based upon dialogs with member installers, member

suppliers, outside experts in the containment field, and government officials involved in the geomembrane business and who want to establish a benchmark for installation contractors. The Approved Installation Contractor program recognizes geosynthetic installation companies that meet a minimum level of professionalism, ethics and business practices. Participants must meet requirements in the following areas: corporate history and business practices, insurance verification, safety training, and professional competence and experience.

Applications for Approved Installation Contractor status will be accepted by IAGI upon completion of the pilot testing. Applying companies submit the required program criteria, which is then reviewed and verified by a third party.

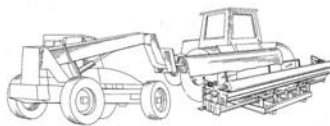
Approved Installation Contractor program requirements will be updated periodically based upon feedback from IAGI members, consultants, legal council and changes in best management practices in the industry. For more information about IAGI or the Approved Installation Contractor program, visit www.iagi.org.

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President

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Resin supply update

The last issue of the IAGI Newsletter included information on Force Majeure as related to natural disasters, such as Hurricanes Katrina and Rita, and resin prices. As the hurricane season has tapered off and clean-up efforts are well underway, resin prices still are changing somewhat, but are beginning to show some stability.

According to an article in the December issue of *Plastics Technology*, storm-induced disruptions in resin supply appear to be calming, and for now, some resin prices seem to have hit a ceiling.

PVC resin prices were flat in mid-November. Thanks to

mild, dry fall weather, construction and pipe demand are still booming. Window demand is still high, but siding has slackened.

Polyethylene prices are increasing as domestic market demand is outstripping available supply. This demand is attributed to the hurricanes and a strong demand across all market segments.

Polypropylene resin prices are strong, but appear to be approaching a balance between supply and demand. According to *Plastics Technology*, plant operating rates are reported to be in the 90-95 percent range.

Vote now for your 2006—2007 Board of Directors

Jan. 1, 2006 is the deadline to cast your vote in the IAGI Board of Directors elections. Ballots were sent to the primary contacts of all IAGI member companies in November. If your primary contact did not receive your company's ballot, please contact Laurie at iagi@iagi.org.

Below is a list of the candidates who have been nominated. Voters also may write-in candidates on the ballots.

Carl Apicella
(Incumbent)
American Environmental Group, Ltd. (AEGL)
Installer

Todd Harman
Hallton, Inc.
Installer

John Heap
Colorado Lining Int'l
Installer

David Leggett
GSE Lining Technology, Inc.
Installer

Brian McKeown (Incumbent)
Clean Air and Water Systems.
Installer

Dave McLaury
(Incumbent)
DEMTECH Services, Inc.
Associate

Dennis O'Brien
(Incumbent)
MPC Containment International
Installer

Anne Steacy
(Incumbent)
Steacy Environmental
Associate

Industry News

Apax acquires Contech

Apax Partners, L.P. has acquired majority ownership interest in Contech Construction Products Inc. in recapitalization valued in excess of \$1 Billion. Contech Construction Products Inc., a leading civil engineering site solutions products and services company, and Apax Partners, L.P., one of the world's leading private equity investment groups, announced that funds advised by Apax Partners will acquire a majority ownership interest in Contech. The transaction, which is expected to close in January 2006, has a total enterprise valuation of in excess of \$1 billion. For more information, contact Laura Brightsen at +1-212-419-2461.

New geosynthetic plant in Africa

WASEW Technologies and the Ethiopian Government have a new JV Geosynthetic plant starting up in January 2006 in Addis Ababa. In the last few years, Ethiopia has bought 10 to 15 million USD worth of geomembranes for agriculture. They are also buying large quantities of pipe for all applications. The new company Geosynthetic Industrial Works PLC has built a new factory with 4000 m² of factory and 1500 m² of offices as stage 1 of the start of a Geosynthetics for Africa initiative. They will produce in stage 1 HDPE pipe PVC pipe HDPE Geosynthetic Netting and Geomembranes. WASEW Technologies is the operating partner and has a large ownership position. For more

information, contact Mike Mathieson at +1-702-353-2607.

Contech donates building to non-profit organization

Contech Construction Products Inc. donated its former corporate headquarters to Abilities First, a non-profit organization dedicated to serving adults and children with special needs. Pat Harlow, chairman, CEO and president of Contech, formally presented the deed

and the keys to the two buildings at 1001 and 1009 Grove Street in Middletown to Tom Wheeler, executive director of Abilities First, at a ceremony Dec. 8, 2005 at Contech's new West Chester headquarters. For additional information about Abilities First, call +1-513-423-9496 or visit www.abilitiesfirst.org. More information on Contech is available at www.contech-cpi.com or by calling +1-800-338-1122.

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Geomembrane Lifetime Prediction: Unexposed and Exposed Conditions

Excerpt from GRI White Paper #6

by Robert M. Koerner, Y. Grace Hsuan and George R. Koerner

Without any hesitation the most frequently asked question we have had over the past 25 years is: "How long will a particular geomembrane last?". (More recently, the same question has arisen but focused on geotextiles, geogrids, geopipe, fibers of GCLs, etc. This White Paper, however, is focused on geomembranes due to the general lack of information on the other geosynthetics.)

The two-part answer to this question largely depends on whether the geomembrane is covered in a timely manner or left exposed to the site-specific environment. Before starting, however, recognize that the answer to either covered or exposed geomembrane lifetime prediction is neither easy, nor quick, to obtain.

Further complicating the answer is the fact that all geomembranes are formulated materials consisting of (at the minimum), (i) the resin from which the name derives, (ii) carbon black or colorants, (iii) short-term processing stabilizers, and (iv) long-term antioxidants. If the formulation changes (particularly the additives), the predicted lifetime will also change. See Table 1 for the most common

types of geomembranes and their approximate formulations.

The possible variations being obvious, one must also address the degradation mechanisms which might occur. They are as follows accompanied by some generalized commentary.

- Ultraviolet - occurs only when the geosynthetic is exposed; it will be the focus of the second part of this communication.
- Oxidation - this occurs in all polymers and is the major mechanism in polyolefins (polyethylene and polypropylene) under covered conditions.
- Ozone - this occurs in all polymers that are exposed to the environ-

ment. The site-specific environment is critical in this regard.

- Hydrolysis - this is the primary mechanism in polyesters and polyamides.
- Chemical - can occur in all polymers and can vary from water (least aggressive) to organic solvents (most aggressive).
- Radioactive - not a factor unless the polymer is exposed to radioactive materials of sufficiently high intensity to cause chain scission, e.g., high level radioactive waste materials.
- Biological - generally not a factor unless biologically sensitive additives (such as low molecular weight plasticizers) are

included in the formulation.

- Stress State - a complicating factor which is site-specific and should be appropriately modeled in the incubation process.
- Temperature - clearly, the higher the temperature the more rapid the degradation of all of the above mechanisms; temperature is critical to lifetime and furthermore is the key to time-temperature-superposition which is the basis of the laboratory incubation methods which will be followed.

For access to the complete findings of this GRI White Paper #6, Geomembrane Lifetime Prediction: Unexposed and Exposed Conditions, visit www.geosynthetic-institute.org.

Table 1— Types of commonly used geomembranes and their approximate formulations (based on weight percentage)

Type	Resin	Plasticizer	Fillers	Carbon Black	Additives
HDPE	95-98	0	0	2-3	0.25-1
LLDPE	94-96	0	0	2-3	0.25-3
fPP	85-98	0	0-13	2-4	0.25-2
PVC	50-70	25-35	0-10	2-5	2-5
CSPE	40-60	0	40-50	5-10	5-15
EPDM	25-30	0	20-40	20-40	1-5

HDPE = high density polyethylene
 LLDPE = linear low density polyethylene
 fPP = flexible polypropylene

PVC = polyvinyl chloride (plasticized)
 CSPE = chlorosulfonated polyethylene
 EPDM = ethylene propylene diene terpolymer

GSI offers continuing education short courses

The Geosynthetic Research Institute (GSI) is offering four short courses in January. Below are brief descriptions of each.

- Course #1—Jan. 19, 2006 Geosynthetics in Transportation/Geotechnical Applications

- Course #2—Jan. 20, 2006 Geosynthetics in Reinforced Walls and Slopes Including Computer Design

- Course #3—Jan. 26, 2006 Geosynthetics in Waste Containment Applications

- Course #4—Jan. 27, 2006

Quality Control/Quality Assurance of Geosynthetics

All four courses will be conducted at the Geosynthetic Institute in Folsom, Penn. For additional information or to register, contact GSI at +1-610-522-8440.



Make sure your freight quotes include your IAGI discount

Q: When I call Yellow for a freight quote, how can I be sure the quote I receive includes our discount? Sometimes it seems really high compared to past shipments.

A: While you are speaking to the customer service rep, ask them what discount percentage is included in your quote. If it is not your IAGI pricing, Yellow will need additional information to recognize you as participating in your association's program, like your company name, dba, and shipping address, etc. However, if you have not used Yellow in the past 6 months, your information may have been purged. If so, just call **IAGI Freight** at (800) 678-9023 and we will happily reinstate your company.

Most commonly, you may have called Yellow from a number that is not your primary phone number. And Yellow's caller ID did not recognize you as a participant. When calling for quotes, it is best to call Yellow from your primary phone number. Yellow's computerized caller ID recognizes

your company name and immediately brings up your discount details along with your shipping & billing information.

Q: How to get discounted quotes using a cell phone or remote phone?

A: Calling from a cell phone, home phone, or unpublished number in the shipping department, will work, too. But you will have to give more detailed information since Yellow's caller ID will not identify you.

To have your shipping department phone number added to ID recognition, you will need to call Yellow from that phone number. After making your 2nd call to Yellow from that number, it will automatically be added to identify your company. Only business phone numbers are added; cell phones and home phones are not.

Accurate identification helps insure the integrity of your benefit. Obviously, you would not want a stranger (or competitor) to call Yellow, posing as you, to be given

your pricing privileges.

The best way to always get good quotes, is to register on www.MyYellow.com, and use Yellow's online services. You may access your account from any computer. To register, just call Yellow at (800) 610-6500 to get your contact ID #, then go online, click on "Register",

and follow the prompts. That opens a whole world of advantages for you.

Just another way IAGI adds value to your membership



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New Members

IGI extends a warm welcome to the following new members:

Advanced Lining Solutions, Inc.

Humberto Delgado
President
P.O. Box 20825
Phoenix, AZ 85036
+1-602-716-5552
hvdle-
gado@advancedlinking.com

Advanced Lining Solutions, Inc. is an installer of geomembrane products, spray coatings and rubber liners.

Servicios De Ingenieria Geosintetica S.A.

(S.I.G.S.A – Costa Rica)
Del Triangulo de Rohrmoser,
400 n 25 e
Payas, San Jose
Costa Rica
geosigsa@ice.co.cr

SIGSA-Costa Rica is a company owned by the Araujo Group and has been in operation for 20 years. It is dedicated mainly to the installation and supply of all types of geosynthetics and to this date, has installed over 68 million square meters of geosynthetics in Latin

America, the U.S.A. and the Caribbean. SIGSA-Costa Rica also has a division of geotechnical engineers dedicated to designing geosynthetic reinforced structures.

Solution Optimum Inc.

Jean-Francois Delisle
4913 Lionel Groulx Suite 73
St. Augustin De Desmaures,
QC
G3A 1V1 Canada
+1-418-623-6888

jfdelisle@solutionoptimum.com

Geosynthetic installers.

Welders Obtain IAGI Certification

Congratulations to **Skellerup Industries** who sponsored Certified Welding Technician testing of their employed welding technicians.

For further information about IAGI's CWT program, contact Laurie Honnigford, Managing Director, IAGI at +1-651-554-1895 or e-mail iagi@iagi.org.

DEMO DAVE'S CORNER

TRICKS OF THE TRADE—EXTRUSION WELDING

TRICK NUMBER 6:
Welding Rod Management
(part 2)

Clean welding rod is a happy welding rod. Here are a couple of tips to help keep your rod clean and dry:



Make sure your rod spool is as close to where you're welding as possible. Avoid dragging rod through puddles of water and through dirt. If conditions are really bad, tie a clean strip of cloth around the rod in several tight knots. The cloth will wipe the rod as it slides through the knot. This is an old trick but it works well.

As I mentioned in my last article there are also spool holders available that mount directly to the extrusion welder. These devices can solve most rod related prob-

lems. Contact Demo Dave for more information.

In my future newsletter columns I will share tips on the following aspects of extrusion welding:

- Extension Cord Management
- Vacuum Testing

Please call Demo Dave McLaury with questions, comments, and suggestions regarding this or future articles. Telephone: +1-530-621-3200 or e-mail demo-dave@demtech.com.

IAGI General Assembly meeting covers current programs and IAGI's outlook for the new year

Chairman John K. "Robbie" Robinson called an IAGI General Assembly meeting to order in Las Vegas, Nev. on Dec. 13, 2005. The meeting was held in conjunction with the NAGS/GSI meetings, and 26 IAGI members attended.

During the meeting, members were updated on IAGI's programs, including the Approved Installation Contractor program. A program in the works for more than three years, it finally is in the last stages of pilot testing and the results are expected by Jan. 31, 2006. The cost for companies to get initial approval is expected to be between \$1000-1500. Annual updates are expected to cost between \$250-500. Once the Board sees what the third party firm will charge to conduct the verification process as part of the Approved Installation Contractor program, the cost will be finalized.

An outline of expectations for companies applying for the program was submitted to the membership. To launch this program, IAGI submitted an abstract about its certification and approval programs to the New York State SWANA program. The abstract was accepted and the hour and a half presentation will be held during the conference scheduled for May 7-10, 2006 in Lake George, N.Y.

"Demo" Dave McLaury reported on the Certified Welding Technician program for 2005. Through November 2005, IAGI tested 309 welders and awarded certification to 246 welders. More tests are scheduled for December 2005 and January 2006. Recognition for this program is increasing as more and more welders seek certification.

Anne Steacy, IAGI treasurer, presented the financial report, indicating that IAGI has a surplus to round out this year. IAGI had \$44,890 of income as of this meeting. Expenses to date are \$37,462.53 with a net surplus of \$7415.65. Steacy reported that IAGI had 89 members in 2005.

As the new year is just around the corner, Robinson focused the meeting on IAGI's goals and objectives for 2006 including:

- Lake George Panel Discussion
- Launch the Approved Installation Contractor (AIC) program
- Market the AIC program
- Begin a long range plan for IAGI. Now it is time to plan for what the next phase of IAGI will be.
- Market the CWT program to engineers asking them to include in their specification the requirement that CWTs be used on their job. The brochure is complete and a letter is in the works.

We will send it to the IAGI database of engineers.

- Update the HDPE Installation document. Todd Harman has volunteered to do the first draft.
- Plan for participation in Geosynthetics 2007 in Washington, DC.
- Formal survey of members. Questions might include: What programs do the members see as most important within IAGI? What other things could IAGI do to help the installer?

Members also took time during this meeting to recognize three IAGI Board members who are leaving the Board of Directors at the end of 2005. Steacy and Carl Apicella presented plaques to John K. "Robbie" Robinson, Lee Taylor and Bill Steinke, thanking them for their years of service to IAGI.

Thank you to all of the members who have supported IAGI throughout the years. We are here to be your association and appreciate your input and contributions.

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Three IAGI Board of Directors members retire

Three Board members will be leaving the IAGI Board of Directors at the end of 2005: John K. "Robbie" Robinson, Lee Taylor and Bill Steinke. All received plaques during the December General Assembly and were thanked for their years of service to IAGI.

Elections for the 2006 IAGI Board of Directors currently are underway. See page three of this newsletter for additional information regarding elections.



Members take time for a photo during the December General Assembly. Left to right: Demo Dave McLaury, Robert Haddox, John Heap, Brian McKeown, Carl Apicella, Anne Steacy, Dennis O'Brien, Lee Taylor, David Leggett, and John K. "Robbie" Robinson.

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