Composites Australia

Connection Magazine

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the smart choice for composites




nuplex composites is a dedicated local manufacturer of polyester and vinyl ester resins, gelcoats and flowcoats, to the Australian composites industry.

With distribution and manufacturing facilities throughout Australia, New Zealand and Asia **nuplex composites** provides the best possible service to customers with a successful track record in product and process innovation.

nuplex composites draws upon vast industry experience, in addition to strategic partnerships with our key suppliers.

nuplex composites supplies a huge range of products to the composites industry which includes:

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- Glass Reinforcements
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www.nuplexcomposites.com

Composites Australia

Letter from the President

As you are no doubt aware, Composites Australia has been expanding its activities during the past few years, including increasing the focus on education and training.

We also look both to provide information on important developments that can assist our members' businesses and to reach out to engineers and others outside the industry who need to learn the properties and benefits of composites. A monthly e-newsletter was recently launched in order to keep members up to date on recent composites industry news.

Of course, the biggest event since the last issue of this magazine was our Conference & Trade Show on the Gold Coast! Your feedback indicates this was another successful event – see the summary on page 4.

There are continuing developments in the industry and these include development of new technology for imparting information. Several of our members, including my company, Colan Australia, cooperated to create the first "app" for our industry – see the article on page 10.

If others are interested in this area with new developments or have ideas but need some assistance to get them off the ground please let us know and we will do what we can to publicise or put you in contact with people who may be able to help.

Training and education, which members have indicated are top priority for them, have been centre-stage in the past year and will continue to be a primary focus.

The association has been working with Manufacturing Skills Australia to advance the steps to establish a Fibre Composite Trade Qualification. Bob Paton and Kevin Hummel from MSA gave a presentation and spoke to delegates at the Conference about the issues involved in this process and the progress being made. We have recently been advised that the MSA Board has determined that the new trade must be declared prior to finalising the qualifications. The matter has now been referred to the relevant industrial parties to determine the need for a new trade to be declared. See the article on page 8.

We are very proud of the steps being taken for professional recognition of the industry, and believe that the role of composites in industry, civil and structural engineering, urban infrastructure, and traditional applications such as boatbuilding and general marine, automotive, general transport, mining, utilities, aerospace, consumer products and construction products will be growing exponentially in years to come.

At the same time, we hear that some members have been experiencing tough times, and we all have empathy and sympathy for this situation. While the GFC didn't appear to hit Australian companies as hard as it did in other countries, there can still be both 'slow burn" and "trickle-down" effects. Some of our members are flat out with work whilst others find themselves in dire straits, or making severe changes. One example: long-time CA member Valspar is no longer in the composites game, and unfortunately quite a few staff in Australia lost their jobs as a result.

Of course, we want all our members to be successful, and indeed the association works to provide services to help them in their businesses. We have a number of initiatives and events coming up (see Events Calendar, page 19) and will also be posting educational videos on the revamped website – which is in the works.

We urge those members who are facing tougher times to be cautious of choosing to reduce their costs by dropping their membership in Composites Australia. Speak to the association if you are having difficulty and we will assess what can be done to assist in the short term so you do not lose access to what the association offers when you need it most!

The industry needs you to help maintain the services of the association and also the invaluable resources of industry training, local and international industry contacts, representation on government committees/standards and workplace health and safety information that the association provides.

Make sure you're getting the most value from your membership: check the CA website to be sure you're listed in the "Find Products" section. Are you on CA's email query list? If not, please contact us for inclusion. We also wish to provide for our members in other ways and appreciate feedback from you as to how we can assist you in your composites business.

Composites Australia's membership year begins every 1 July, and you will have received your invoice for membership for 2011 – 2012 some weeks ago. I urge you to renew your subscription for membership promptly. The benefits of membership are many, and are ever-increasing. Your continued membership is also essential for continued service to the industry – which in turn benefits you further.

Best wishes to everyone for the new financial year.

Genelle Coghlan

The 2011 Board of Composites Australia are:

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"The Guy from NASA" and the "Bob and Scott Show" feature at Conference 2011

The eighth annual Composites Australia and CRC-ACS Conference and Trade Show was held on 17th and 18th March 2011 at the Hyatt Regency Sanctuary Cove on the Gold Coast in Queensland and was deemed a success by those who attended.

Was it the "Bob and Scott show" that did it or "the guy from NASA"? Our three keynote presenters, all from overseas, were rated by attendees as the top presenters in the feedback survey. Mark Shuart, Senior Advisor at NASA Langley Research Center, was "the guy from NASA". Mark, who also participated in a lecture series for Engineers Australia, gave two presentations at the Conference, a keynote talk on aerospace vehicles and another on Advanced Composites Technologies for Heavy Lift Launch Vehicles.

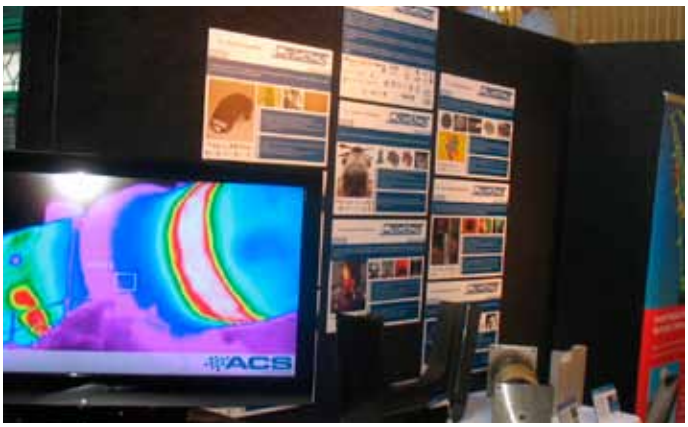
"Bob and Scott" were of course the always-popular Bob Lacovara and Scott Beckwith, who each gave several presentations and who opened themselves up to questions 'on the spot" in an hour-long Technical Forum. Sessions at the event were very well-attended, all the way through to the Friday afternoon finish.

It is clear the event has support from industry and continues to be very worthwhile for those who attend. In addition to attending as delegates, visitors could register for the Trade Show only, or as 'dinner only" registrants.

Figures indicate that many companies were sending more than one delegate, a welcome trend back toward pre-GFC times. Companies who send more of their people often report that staff come back with a renewed interest in the industry and excitement about the latest developments. The event attracted delegates from six countries and all states of Australia.

Keynote speaker Mark Shuart, from NASA, presented a paper on **"Composite Research & Technology for Aerospace Vehicles"** which discussed current applications for composite primary aerospace structures, describing composite structures from the Boeing 787, Delta IV, and Atlas V as well as proposed composite primary structure applications for heavy lift launch vehicles. Delegates heard that NASA's Lightweight Spacecraft Structures and Materials (LSSM) Project has the potential to develop composite materials and structures technologies for the largest composite aerospace structures ever made.

Our second keynote speaker, Bob Lacovara of Convergent Composites in the US, spoke on **Composites: Business for the Future**, which examined emerging technologies which will drive the composites business into the future, including opportunities for the use of composites in housing, bridges and transport.



Over the two-day program, more than 30 presentations, two tutorials and three forums were delivered on an array of subjects from the academic sector, bio-composites, repair technologies, tooling and infusion and more, along with themes helpful to those managing fabricating businesses. Some talks were summarised in the February issue of this magazine. If you missed it, you can still see everything tat was on the Programme at www.compositesconference.com/program.html

In addition, five different practical demonstrations and three equipment demonstrations took place in the marquee or trade area. The demonstrations included vacuum infusion technology, rapid tooling and adhesive bonding. Non-destructive testing and automated cutting machines were also on display.

For the first time, and based on the success of the "Fabricators Friday" concept, a one-day registration option for the Thursday was offered, designated "Engineers Thursday", to attract more engineers to attend the conference. The Thursday schedule featured presentations such as "An Introduction to Composites for Engineers" (Phil Teakle), "Composites for Architectural Elements" (Floreana Coman), "The 10 Basic Steps in Designing Effective Composite Components" (Rik Heslehurst), and the Corrosion Forum. This initiative was successful and w ill be continued for future conferences.

Factory Tour

The factory tour of Riviera Marine was offered to all delegates on a first-come first-served option limited to 40, and it quickly "sold out". The tour took place on Friday morning, and was reported as being very impressive..

Trade Show

There were a number of companies exhibiting for the first time, and several live machinery demonstrations took place at the booths.

On the first day of the event, GlasCraft Australia hosted a product launch with drinks and refreshments in the trade area to introduce their new GlasCraft RS Chop Gun, said to be the lightest and smallest gelcoat gun available and the quickest blade change on the market.

As with all CA events, the conference provided delegates with the opportunity to mix and mingle with industry people – a big plus for those who attended.

In our feedback survey, 86.2% stated that the conference and/or the Dinner provided a useful means of meeting valuable contacts; the other 13.8% stated that even if they didn't meet new contacts, they nonetheless renewed old contacts and acquaintances.

Welcome Drinks, held the night before the Conference, has become a very popular event for all those who arrive early, as well as exhibitors and locals. This year's event was no exception, with nearly 100 mixing, mingling and networking on the hotel's beautiful outdoor Fountain Terrace for drinks, finger food, and meeting and chatting with colleagues.

As usual, the conference dinner was a highlight of the two-day event. Greeted by a mariachi-style band with two accompanying feature dancers, the nearly 150 composites practitioners and guests clearly enjoyed themselves.

The presentation of the Annual CA Industry Award took place at the Dinner, along with the draw for the door prize. The winner of the Industry Award, David Mercer of Penguin Composites in Tasmania, was present to accept his award. Education Committee head Phil Bovis presented him with the certificate and cheque as Penguin Composites CEO John van der Woude looked on proudly. The door prize, 3 nights' accommodation at the Hyatt, was won by Mainul Islam of the University of Southern QLD (CEEFC).

As always, Sponsors were important contributors to the conference, and in return reaped recognition benefits for themselves. The CRC-ACS was again CA's conference partner. The CRC's new entity, Advanced Composite Structures Australia Pty Ltd (ACS-A) was also a sponsor through its Silver Sponsorship of Composites Australia.

The Queensland Government provided major support, helping to provide the marquee for the demonstrations, and hosting a quadruple booth space for their Queensland Business Lounge.

Additional financial / sponsorship support was received from:

- Fiber Glass International – our gold association sponsor; also contributed the much-admired satchels for delegates (and pens), as well as providing a speaker (Chris King of Nuplex NZ)
- Hitco Carbon Composites – our Programme sponsor
- Owens Corning Australia – our USBs sponsor
- Colan Australia – our lanyards sponsor
- Composite Solutions – donated a Fabricators Friday prize

Rob Hutchinson of Composite Solutions donated the Fab Friday prize: a CCBM (Closed Cavity Bag Moulding) Start-up Kit. "And the winner is:" Andrew Steadman of Derek Gee!

The 2012 Conference will be held in New South Wales – negotiations for the venue are in progress as we go to print.

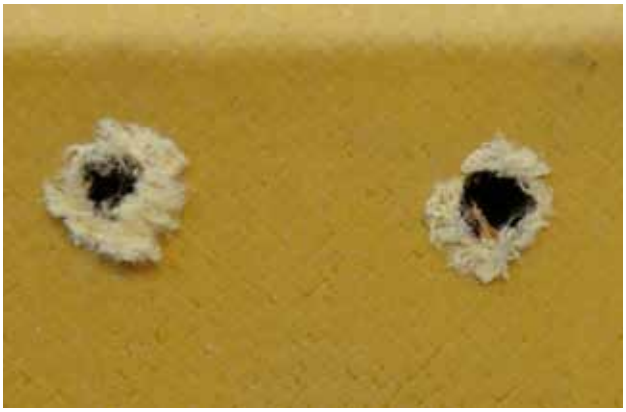
Mechanically Fastened Joints in Composite Structures

Composite Engineer's Viewpoint by Rik Heslehurst PhD, MEng, BEng(Aero) FIEAust, FRAeS, CPEng

Part 3 – Fastener Hole Preparation

The drilling of fastener holes in composite materials is not a simple process. Because of the nature of the composite material several issues arise when drilling and general machining is undertaken. The abrasive nature of the fibre system will increase drill bit wear and reduce the drilling operation speed. Also, the heat generated during drilling must be carefully controlled as well as the potential of hole damage if the drilling feed speed is too high.

There is a range of drill bit types specially designed for composite materials. These drill bits will be different for glass, boron, carbon (graphite), Kevlar, etc and as such the fibre vendors will provide advice on the drill bit type. Composites Vol. 21, Introduction to Post-Processing and Assembly, F.C. Campbell, pp. 615-673, ASM International, 2001, gives a good overview of the types of drill bits for various composite materials. An example of the effect of using a standard carbide drill bit on Kevlar fibre composites is illustrated below, where fuzzing of the Kevlar fibres is obvious. To aid in the drilling of composite structures control of both drill speed and feed speed is required. The following table gives some recommendations for drill speed and feed speed in some of the common fibre composites.



Drilling Operation Damage of Kevlar Structure
(photo by Rik Heslehurst)

The drilling process can or will generate heat and for composite materials excessive heat will damage the resin system of the fibre/resin system. Hence control of the heat generated is required. The use of oil based coolants is **not recommended** based on potential long-term degradation of the matrix from absorbed oil contamination. The recommended process of cooling the drilling operation is to use water or chill air. In combination with the use of water or chilled air is to regularly retracting the drill from the hole. This aspect of the drilling process is known as peaking.

Recommended Drill Speeds and Feed Speeds in Graphite or Carbon Composite Materials

(Source - ASM Int Engineered Materials Handbook, Vol 1)

Maximum Hole Diameter mm	Feed Speed mm/rev	Rotational Speed rev/min
3.967	0.025-0.040	2,800
4.763	0.025-0.040	2,800
6.350	0.025-0.040	2,800
7.938	0.045-0.055	1,800
.525	0.045-0.055	1,800

Finally the most common problem of the drilling process is hole damage. Hole damage can be seen as exit hole damage (delaminations of backside plies), internal delaminations and fibre resin pull out. All three damage types are overcome with appropriate drill speeds and feed speeds. Back side delaminations can also be controlled with back side support boards or specially designed drill bits.

Drilling Operation Damage of Kevlar Structure
(photo by Rik Heslehurst)

In the next article we will discuss fastener installation – likewise to hole preparation, fastener installation requires careful consideration not to damage the composite laminate and thus reduce bearing strength in composite structures. I also welcome questions, comments and your point of view. Feel free to contact me via r.heslehurst@adfa.edu.au. I may publish your questions and comments, and my response in future newsletters.

Changes in supply to the Australian composite industry a-foot

By Kerryn Caulfield, Executive Manager, Composites Australia Inc.

Even before the floods in December and January, business confidence was already softening, according to the quarterly business survey released by the National Australia Bank earlier this year.

The downturn of the past two years has been unkind to many end-markets served by the composites industry, but none has been harder hit than marine. A multitude of cheap imported vessels are having a dire effect on Australia's motor yacht industry, in what has become a marine recession. Proposed changes to the GST allowing boat buyers to sail new, Australian-made recreational boats in our waters for up to 12 months without paying GST on the sale price should go a small way to ameliorating the pain. However, the high Australian dollar and the surplus of marine stock in the U.S. that has enabled any would-be importer to suddenly become a boat trader appear to be with us for some time.

In contrast, a recent round of conversations with fabricators provided evidence of quiet confidence in all markets other than marine. In her presentation to the Australian composites industry, Fredrique Mutel, President and CEO of JEC, predicted that the marine market would soften and contract. In parallel, Mrs Mutel forecast growth in the aerospace, building and construction, and transport industries. Indeed, there is evidence that the transport industry is providing much business to composite fabricators.

The exception however was in the mining industry, which remains a constant frustration to composite fabricators, who see Australia's mining boom as a missed opportunity for composites. It is well known that the extremely corrosive environment of the mining industry lends itself to composite solutions.

Those businesses that are feeling the zephyrs of a positive cashflow are reporting to be challenged by the eternal issue of skilled staff, and have found themselves competing with an unprecedented exodus of staff to the high-paying mines.

These shifts have initiated change in the composites industry supply chain, notably seen in Valspar's decision to close its composite operations after its acquisition of Australian paint manufacturer Wattyl Ltd., and in the recent restructuring within the Nupol and Fiberglass International stables, the media release for which be seen below.

The latter, bless their socks, have at least elected to consolidate. Most would say that the decision by any business to eliminate duplication of resources is a clever move.The newly rationalised Nuplex Composites will still offer the widest product range and the most extensive network of strategically located distribution centres (spanning from Cairns in Northern Queensland to Canning Vale in Western Australia), not to mention its over-the-counter sales as well. And for that, we are eternally grateful.

Nuplex Announces Restructure of Composites Business

Nuplex Industries has announced that it plans to consolidate its Composites business in light of current market conditions.

Sam Bastounas, Regional President ANZ, has advised:

"In recent years we have been supporting three routes to the Australian composites market via the FGI, Nupol and NSR business units. This structure has proven to be an effective commercial model that has enabled us to service the needs of our customers.

In the last 2 years we have witnessed a sizeable contraction in the Australian composites market as customers have either moved off shore or simply stopped manufacturing locally. As a consequence the current business model is no longer viable and we need to rethink our strategy in Australia with the requirement to develop a structure that will support our growing composites businesses in Indonesia and Vietnam.

Given these challenges and the need to improve profitability in Australia it has been decided to merge the FGI and Nupol composites businesses into a single business that will be known as Nuplex Composites".

The NSR brand will continue serve the product needs of our independent distributors.

Nuplex Composites will maintain its industry leading position as the primary local manufacturer and technology developer in Australia & New Zealand. The above changes will allow greater customer focus, eliminate duplication of resources and place Nuplex Composites on a much better footing to grow the composites business.

For further details please contact your account representative or the following contacts:

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Proposed Trade Certificate for Fibre Composites – Update

(See more at www.mskills.com.au)

Background:

Composites Australia (CA), representing the fibre composites sector, along with the Queensland Department of Employment, Economic Development and Innovation, approached Manufacturing Skills Australia (MSA) in 2009 for assistance in having the sector gain trade recognition by developing a Trade Certificate III for the fibre composites sector. The development of a qualification to support a trade requires wide national consultation with industry and the industrial parties.

MSA contracted Training and Performance Solutions (TaPS) to undertake work on this project. A draft of a traditional trade qualification, incorporating some 18 new fibre composites specific units of competency, was developed to act as an example of what this might be like and to serve as a trigger for, and focal point of, discussion for this possible trade.

The draft was launched at the Composites Qualifications & Training Forum at the Composites Australia & CRC-ACS Conference, on 18 March 2011. Subsequently, copies were sent to all those present at the launch and also to all those on the fibre composite trade project database. In addition, the drafts were placed on the MSA web site. Since then, the feedback has been reviewed and incorporated into a revised draft qualification.

To view draft documents and feedback report visit: www.mskills.com.au

The feedback may be summarised as follows:

- 75% agreed there is a need for this trade qualification. Among those who disagreed, comments included "I believe we have own people who do the same job every day so no need to train them to do other things" and "already have a trade in Qld".
- 88% agreed that the draft, and also its structure, meets the needs of the sector. Those who said it did not commented that it "doesn't cover manufacture of vessels, pipes" and that it was "too rigid, needs more units" One comment was "Not yet but with work there would be a better outcome", while another respondent asked if the structure was the same as any other trade.
- 88% also agreed that the grouping of units was okay as is. Comments dissenting included "not enough to meet sector needs" and that "more specialisation" was needed.
- Only 50% agreed that (1) the draft contained adequate units for sector, and (2) the units were appropriate for jobs. The primary comments amongst the 50% disagreeing were, as above, "not enough to meet sector needs" and "more specialisation".

Current Status:

The MSA Board has considered the revised draft and has agreed that until a trade has been declared, MSA is not in a position to finalise the structure of the qualification. MSA is referring the matter to the relevant industrial parties to determine the need for a new trade to be declared, before continuing work on the proposed qualification.

Next steps

Declaration of a trade is state based and needs to be done with the support of the industrial parties. These parties are the principal organisations who are respondents to the relevant federal industrial award. In this instance, the responsibility will be requested of Ai Group and AMWU. It is expected that if their investigation warrants a new trade to be declared then it will be processed in one state and then flow to others. The mechanism differs from jurisdiction to jurisdiction and depends on the relevant industrial legislation in place in the particular state.

The referral to Ai Group and AMWU has occurred and MSA is awaiting their response.

US President Launches Initiative Investing in Advanced Technologies, Including Composites

the Advanced Manufacturing Partnership at Carnegie Mellon University. Plans are for the enterprise to facilitate a new generation of U.S.-made high-technology products – and to help ease high U.S. unemployment.

"This partnership is about new cutting-edge ideas to create new jobs, spark new breakthroughs, reinvigorate American manufacturing today. Right now," stated the President.

The president stressed the need to invest in the country's future while still working to curb deficit and debt. The initiative does not involve new government spending.

"If we want a robust growing economy we need a robust growing manufacturing sector," he said. "I ran for president to get us back to where we need to be. I have a larger vision for America."

continued next page

US President Launches Initiative Investing in Advanced Technologies, Including Composites (continued)

The White House said that in the past, major new technologies have been commercialized into vast industries with the help of government-university-company partnerships. Examples include telephones, jet engines and the Internet.

It hopes for similar achievements by speeding development of new technologies such as next-generation robotics, advanced composite materials and bio-manufacturing.

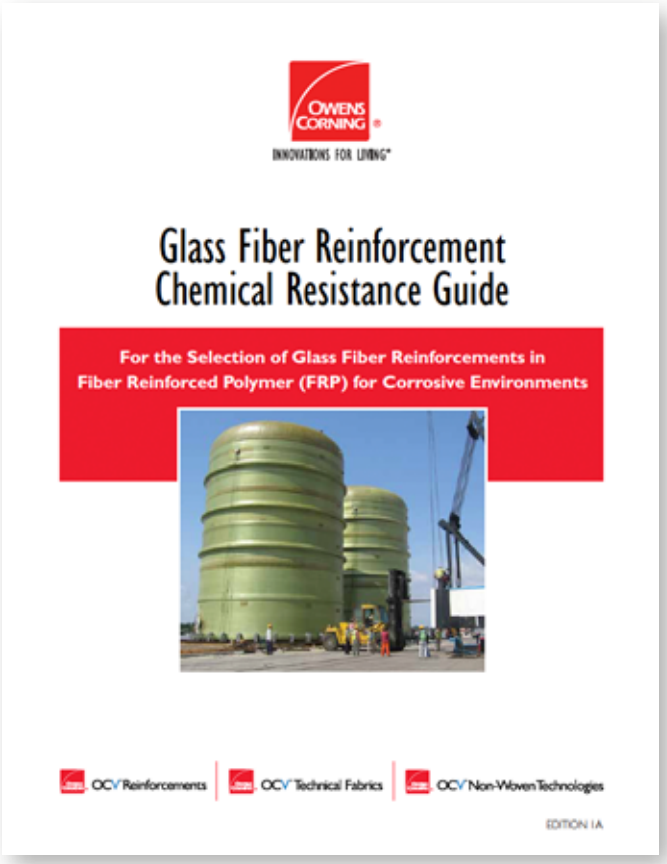
Although manufacturing no longer has a dominant role in the U.S. economy,"We have not run out of stuff to make. We've just got to reinvigorate our manufacturing sector," Obama said. "We've launched an all-hands-on-deck effort."

The Advanced Manufacturing Partnership, aims to invest more than $100 million to help enable U.S. companies to discover, develop, manufacture and deploy advanced materials twice as fast as they are capable of today.

Owens Corning Introduces Guide for Glass Fiber Reinforcements in Corrosive Environments

Guide helps end-users, engineers and fabricators select the optimum glass fiber reinforcement for applications exposed to corrosive chemicals.

Owens Corning, the leading global producer of glass fiber reinforcements, has announced the availability of the first-ever chemical resistance guide for glass fibers. The guide provides information to help end-users, engineers and fabricators select the optimum glass fiber reinforcements for use in fiberglass-reinforced polymer (FRP) applications used in corrosive environments.



"We talked with specifiers and end-users and realized that the corrosion market was missing an important tool," said Vice President of Innovation for the Composite Solutions Business Ashish Diwanji. "This guide will help FRP designers balance cost and performance when selecting the best glass fiber to meet their needs."

The Glass Fiber Reinforcement Chemical Resistance Guide contains test results, examples of specifications and information about industry standards for glass fiber compositions used in FRP applications. The results were compiled from tests conducted in the laboratory and knowledge gained in the company's field experience and illustrates the effect of various chemicals on different glass fibers. Examples of writing specifications are provided to ensure accuracy and consistency. The company included industry standards for glass fibers used to resist corrosion because selecting the right glass fiber is a key factor in corrosion resistance and can lower the risk of failure.

Owens Corning is the world's leading producer of corrosion-resistant glass fibers including its patented Advantex® glass which meets ASTM D578, ISO 2078, and DIN1259-1 standards. Advantex® glass has enhanced corrosion-resistant properties and tests indicate it performs well when exposed to corrosive chemicals.

There is a proliferation of applications where corrosion-resistant properties are required, such as the new equipment for pollution control, mining, chemical processing, desalination plants and a variety of saltwater marine applications including tidal energy installations.

"Owens Corning is in a unique position to present the guide because of our material science competencies in corrosion, glass and surface chemistry," said Diwanji. "These competencies enabled us to invent most of the glass fiber types used today in FRP."

The Glass Fiber Reinforcement Chemical Resistance Guide can be downloaded from the company's website at www.owenscorning.com/composites/aboutAdvantex.asp.

Contact:

Beth Rettig, +1-419-248-6777w

How I Landed in Aviation

Dr. Terry Tolleson is the founder of Blue Tuna Training and Documentation in Rockwall, TX. He sends out an e-newsletter on training and related matters, primarily for the aviation industry. Your CA office found this column of particular interest and hopes you enjoy it too; we reprint it with Terry's permission. There are so many pathways to a career!

This past week my wife Patsy and I celebrated 38 years of being married. This first year was a bit rocky and leads to my story about landing in aviation. Driving down a highway in Tulsa Oklahoma late one night on August 31, 1973, a drunk runs a stop sign and we tbone them. They were going over 90 we were moving about 50 mph. As the cars spun locked together I flew out and was caught between them, as I flew out, my wife was thrown out behind me. She landed in a field, her left knee almost tore off. My right arm was broke, my right leg was broke in three places and nailed into the ground. Laying in a pool of my own blood and bones the ambulance driver finally arrived and as he bent over me he passed out with a heart attack. The assistant loaded the driver of the other car, his friend who was dying, my wife and the ambulance driver who was coding out and left my body for a later pickup because it looked like I was not going to make it.

8 weeks and six surgeries later I left the hospital with my right leg gone. Leaving the hospital was somewhat emotional. As the healing began and I was fitted for a leg - I went to a Oklahoma Rehab center and tested to see what type of job I could do. Weeks later when I returned all the test pointed to bench work like electronics and they had the perfect place for me to go. Spartan School of Aeronautics. About 24 months later I landed my first job in a small autopilot company in Tulsa. From there my body continued to mend over the years I worked for some very large aerospace companies, until years ago when I founded Blue Tuna. It was the Oklahoma Rehab organization that really gave me the boost when I heard them say, "We will pay for your books, your tools and your tuition - I was thrilled."

It is very painful to see young men and women coming back from the war with broken bodies and many very despondent. My hope is there are organizations that catches these soldiers and helps them like my own state and Spartan did for me.

How did you land in aviation? With a grateful heart.

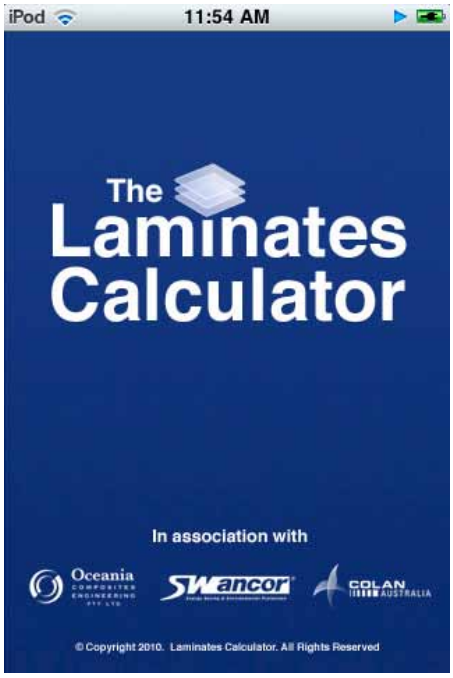
Sincerely,

Terry Tolleson, Blue Tuna Docs

For more information on Blue Tuna's human factors training visit www.bluetunadocs.com.

Have you got a story to tell about how you got into the composites industry? Please email it to info@compositesaustralia.com.au!

First iPhone App for the Composites Industry – allows you to select and price composite laminates from your iPhone.



A free iPhone App called TLC – The Laminates Calculator is now available. The world's first App designed to promote the composites industry and make business easier for manufacturers worldwide.

The App, which is free to download from the iTunes App Store, was developed by CA Member Colan Australia, Oceania Composites Engineering and Pacific Resins. It is believed to be the first of its kind in allowing users to build laminates from over 30 pre-loaded resins and reinforcement records. It also allows unlimited user defined material records. Laminates built from ply layers can be amended dynamically when needed and can be saved or e-mailed as required, making it simpler to construct and cost actual laminates. It's ideal for mainstream fabricators.

The App is very easy to use and comes complete with worldwide contact information to allow users to contact their local material supplier directly from the application.

For further information please contact:
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State News

South Australia

New Owners for Fibrelogic Pipe Systems

In statements released both by Fibrelogic and by RPC Technologies, it has been announced that, effective 23 June 2011, the business assets of Fibrelogic Pipe Systems Pty Ltd's business have been purchased by RPC Pipe Systems Pty Ltd (a new joint venture between RPC Technologies and Nuplex Industries).

Fibrelogic is Australia's leading manufacturer of continuously wound glass reinforced plastic ('GRP') piping. It produces market leading products from its state-of-the-art manufacturing facilities in South Australia and is a supplier of GRP building materials for the water industry.

Under the new ownership, RPC Pipe Systems will continue to conduct business from its headquarters in Lonsdale, SA, under the Fibrelogic brand. Management structures, systems and personnel in the Fibrelogic business will remain largely unchanged but under new management.

Tony Caristo, Managing Director of both RPC Technologies Pty Ltd and RPC Pipe Systems Pty Ltd stated that "the acquisition of Fibrelogic marks a milestone for RPC Technologies, by significantly increasing our composites capacity and capabilities, and improving our product offering within the piping and industrial markets. The synergies between Fibrelogic Pipe Systems and RPC Technologies are complementary, and it is with this view that we foresee a strong working relationship for the benefit of all. We are extremely excited about the potential business opportunities which lie ahead of us"

It is believed that Fibrelogic, which has a strong and well-respected market position, will benefit from RPC Technologies' engineering and project management expertise combined with Nuplex Industries' world class resin technologies and processing. The companies foresee solid growth prospects to benefit all.

With significant new water and waste water management and mining expansion opportunities becoming available in South Australia (e.g. Olympic Dam Project), as well as in other areas throughout Australia in the coming years, RPC Pipe Systems foresees considerable scope for longer term growth.

Supplementing Fibrelogic's continuous winding GRP pipe manufacturing capabilities with RPC Technologies' heavy industry GRP fabrication engineering and Nuplex's supply capabilities presents a unique service proposition of immense benefit to the Australian market.

The Fibrelogic acquisition and joint venture with Nuplex complements RPC Technologies' other extensive GRP manufacturing capabilities and interests in the industrial, defence and transport industries.

By acquiring the business and assets of Fibrelogic, RPC Pipe Systems will be one of the leading players in the Australian GRP piping market.

Company Profile:

RPC Pipe Systems is a South Australian company owned and controlled by way of joint venture between RPC Technologies and Nuplex. RPC Technologies Pty Ltd has world leading engineering expertise in heavy industrial fabrication in fibreglass. Fibrelogic and RPC Technologies have evolved largely in tandem, and have often worked on the same major projects, hence complimenting the service in relation to water and waste water management supply, engineering and/or manufacturing support. Thus, this a natural evolution of the business.

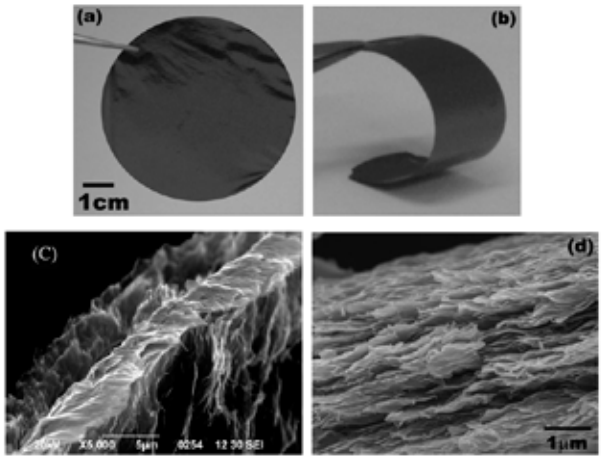
Delegates toured the impressive Fibrelogic plant during the Composites Australia & CRC-ACS Conference 2010 in Adelaide,

State News

New South Wales

News from the University of Technology Sydney:

Graphene – Composite Paper Stronger Than Steel?



a) Digital images of as-obtained graphene paper via vacuum filtration, (b) flexible graphene Strip, (c) and (d) Cross-section Field emission scanning electron microscopy (FE-SEM) view of the fractured graphene paper

UTS Scientists have reported remarkable results in developing a composite material based on graphite that is a thin as paper and ten times stronger than steel.

Based on preliminary research done at the University of Wollongong, a UTS research team supervised by Professor Guoxiu Wang has reported reproducible test results and developed nanostructural samples of graphene paper which has improved mechanical properties.

Graphene paper has the potential to revolutionise the automotive, aviation, electrical and optical industries.

Graphene paper (GP) can be processed, reshaped and reformed from its original raw material state - graphite. Researchers at UTS have successfully milled the raw graphite by purifying and filtering it with chemicals to reshape and reform it into nano-structured configurations which are then processed into sheets as thin as paper.

These graphene nanosheet stacks consist of monolayer hexagonal carbon lattices and are placed in perfectly arranged laminar structures which give them exceptional thermal, electrical and mechanical properties.

Using a synthesis method and heat treatment, the UTS research team has produced material that exhibits improved mechanical properties over existing GP, including better bending, rigidity and hardness. Compared to steel, the prepared GP is six times lighter, five to six times lower density, two times harder with 10 times higher tensile strength and 13 times higher bending rigidity.

Researcher Ali Reza Ranjbartoreh said, "No one else has used a similar production and heat testing method to find and carry out such exceptional mechanical properties for graphene paper."

"The exceptional mechanical properties of synthesised GP render it a promising material for commercial and engineering applications.

"Not only is it lighter, stronger, harder and more flexible than steel it is also a recyclable and sustainable manufacturable product that is eco-friendly and cost effective in its use."

Mr Ranjbartoreh said the results promise great benefits for the use of graphene paper in the automotive and aviation industries, allowing the development of lighter and stronger cars and planes that use less fuel, generate less pollution, are cheaper to run and ecologically sustainable.

He said large aerospace companies such as Boeing have already started to replace metals with carbon fibres and carbon-based materials, and graphe ne paper with its incomparable mechanical properties would be the next material for them to explore.

The production of GP from graphite also provides a remarkable amount of added value for the mining, material processing and manufacturing industries in Australia. In the last decade, metals have increasingly and rapidly been replaced with carbon-based materials.

Australian mines have immense graphite resources making the new material a favourable option to industry as an economical, home-grown and world-class technological advancement for mass production and industrial application.

The findings of the UTS research group have been publishew in the article "Advanced mechanical properties of graphene paper" in the **Journal of Applied Physics**.

Byline: by Lisa Aloisio

State News

Queensland

Revolutionary roof tile powers solar hopes

A ROOF tile that could revolutionise the adoption of solar power in Australia is now undergoing two separate industry trials as its owner prepares for a market launch later this year.

The KISSTile, which was a finalist in the 2006 Australian Design Awards, is now undergoing final testing at Bond University's Institute of Sustainable Development and Architecture and through Townsville City Council's Solar City program.

The KISSTile transforms the humble concrete roof tile into a technical package that generates both solar power and solar hot water for buildings.

The technology is now patented in 28 countries and KISSTile owner B-Pod Holdings is now looking for potential partners for the Australian and international markets.

B-Pods Holding chief executive officer Jason Perkins said he hoped he would secure partnerships within the next three months and the company was preparing to ramp up its manufacturing operations.

"We want to secure a major corporate partner for the Australian market to take advantage of their market size and existing marketing and distribution channels to ensure that the roll-out of the KissTile is efficient and effective.

"This is a world-beating technology product and it is already attracting significant interest around the world.

"We are obviously intending to export the product and we will be looking to raise capital in the near future to help fund our goals."

Queensland energy giant Ergon Energy has already thrown its support behind the product and provided $220,000 to fund the current study.

And Bond University Vice Chancellor Robert Stable is using the Australasian University Building Educators Association conference to launch the trials and to reveal the product to 60 of the nation's leading building experts and academics.

Mr Perkins said one of the keys to product was that its low profile

State News

design overcame one of the major reasons why less than 10 per cent of Australian homes are fitted with solar panels.

"Our research shows that one of the major reasons why Australians are not installing solar panels is because they are ugly," said Mr Perkins.

"The KISSTile is designed to look very much like a modern roof tile and not take away from the design of the house."

Another key advantage the product has is that is does not have a direct competitor.

"Because BPod has gained the international patents over the technology, the nearest competition we have will be people selling separate packages of roof mounted solar power cells and roof mounted solar hot water systems," said Mr Perkins

"Because the KISSTile is a three-in-one product, it delivers value for money that other competitors can't beat."

For further information contact public relations consultant Marshall Hall on 0404 195 896 or via email on marshall@consultinghall.com

Welcome New Members

Composites Australia Welcomes New Members:

- Evapco Australia (Corp 3, NSW), Damon Owen, Composites Development Manager.
- Aeronaut Automation (Supplier 2, NSW), John Clark, MD
- Australasian Solvents and Chemicals Company (Supplier 2, QLD), John Jacka, Account Manager
- Jennmar Australia (Supplier 2, NSW), Jeremy Arndt, Production Engineer

New Member Profile: Global (HOBAS) Pipe

HOBAS is a worldwide leader in the supply of high performance Centrifugally Cast- Glass Reinforced Plastic (CC-GRP) Pipe Systems for applications such as potable water, waste water, hydropower penstocks, cooling water lines, irrigation and drainage. The unique and patented centrifugal casting manufacturing process makes HOBAS pipe particularly well suited to deep trench high stiffness applications and installation using pipe jacking. HOBAS has been used by water authorities throughout Australia and New Zealand for decades.

HOBAS GRP Pipe Systems can be used for all installation methods (open cut, jacking and relining, above ground and sea outlets). HOBAS products include circular and non-circular pipes, various coupling systems, shafts and manholes, tees, bends and other tailor-made fittings and accessories. HOBAS GRP Pipe Systems are available in diameters from 150 mm to 3500 mm in various pressure and stiffness classes.

12/3 Westside Ave, Port Melbourne, VIC 3207.
Ph. (03) 9646 1110

New Member Profile: Aeronaut

Aeronaut is Australia's largest manufacturer of automated cutting systems for industrial textiles and composites, specialising in heavy duty machines up to 10 m wide and 45 m long with cutting technologies including rotary blade, oscillating blade, laser and ultrasonic.

Aeronaut manufactures machines from basic single tool to versatile multi-tool cutters to suit any budget or application.

Aeronaut's Tangent nesting software imports and nests CAD patterns to reduce waste while preserving fibre alignment.

Aeronaut's cutting systems are used on cloth and pre-preg for aerospace, ultralight aircraft, wind power, marine, automotive, fishing rod, tube, golf club and mast making industries.

www.aeronaut.org
sales@aeronaut.org
Ph (612) 9450 0800

Press Releases

Release of draft legislation on GST-Free Export of Boats

Australian boat manufacturers and coastal tourism operators will benefit from proposed changes to the GST allowing boat buyers to sail new, Australian-made recreational boats in our waters for up to 12 months without paying GST on the sale price.

Assistant Treasurer Bill Shorten released for comment draft legislation to extend, from 60 days to 12 months, under certain circumstances, the period in which eligible boats can be exported from Australia GST-free.

"The measure will enable buyers of new Australian-made boats to take an extended sailing holiday in Australia and become familiar with their boat, before either sailing it out of Australia or having it shipped overseas," Mr Shorten said.

"It also assists Australian boat builders to overcome the disadvantage they face in this market because of Australia's relative geographic isolation. This legislation should provide a boost for boat builders in regional areas and contribute to greater economic activity in regional ports."

This measure was announced in the 2010-11 Budget. The change is in effect from 1 July 2011.

The exposure draft legislation and explanatory material is available on the Treasury website at http://tinyurl.com/boatlaw

Press Releases

DIAB doubles capacity in Kunshan, Greater China

Staying true to its strategy to serve its customers locally and following the increased demand from the Chinese market, DIAB completed phase four of the Kunshan manufacturing facility on Wednesday the 18th of May. By the completion of phase four DIAB once again doubles its capacity in Greater China.

DIAB CEO Anders Paulsson commented on the importance of DIAB presence and expansion in China: "Greater China is one of our most important markets and by expanding our capacity we can follow the tremendous development and growth that China is experiencing. The DIAB set up in Greater China, with a local sales company as well as expanded manufacturing capacity, enables us to improve our services to not only the increasing demand within wind and renewable energy but also larger development projects in infrastructure, transportation and aerospace"

The DIAB facilities in Kunshan supplies the full range of DIAB high performing core materials, kits and a full range of finishing as well as the DIAB range of value added services.

For more information contact:
Jan Andersson, Group Vice President, Marketing
E-mail: Jan.andersson@se.diabgroup.com
Phone: Mobile: +46 (0)70-6164311 • Office: +46 (0)430-16300

Flex Molding Process™ Training Continues

MVP Distributor Training in Flex Molding Process™ Conducted in Australia

Kent, WA – Magnum Venus Plastech, in our continuing commitment to providing our customers with the tools, customer support and expert technical training they have come to expect, recently conducted a Flex Molding Process™ training for our distributors in the Pacific Rim.

Twelve distributors from 6 countries attended this three day comprehensive training hosted by Australian distributor MVP-Australia.

The training that they received was the same training offered to customers around the world. It includes intensive classroom instruction on the infusion process and the ins and outs of converting from open molding to closed molding using Flex Molding Process™; extensive hands on training in producing a flexible membrane counter-mold; the intricacies of the new Patriot™ Systems that have been developed for Flex Molding Process – including the Patrtiot™ Pro Innovator Injection System and the Patriot™ Duo 1:1 Silicone System – a true transfer of technology.

All Magnum Venus Plastech distributors will have completed this course and are ready to assist their customers in making the change to Flex Molding Process. All MVP distributors in over 200 countries world-wide have sales representatives and technical services personnel who are experts in the technology and training offered by Magnum Venus Plastech.

To learn more about Flex Molding Process, or any of the products offered by MVP, please visit the Web site at www.mvpind.com.

Hands on instruction in building silicone membrane

Rebuilding After the Earthquake – With Composites

The Composites Association of NZ is sponsoring a seminar to showcase the capabilities of New Zealand composite fabricators to assist in the rebuilding and restoration of the heritage of Christchurch.

"The Role of Fibre Composites in Earthquake Zone Rebuilding" will be held in Christchurch on 19 August.

Notable examples of composites playing an important role in rebuilding and rehabilitation can be found around the globe in cities such as San Francisco, Kobe and Mexico City.

The rebuilding of a stronger, more sustainable Christchurch will similarly benefit from the use of lighter and stronger fibre composite materials, especially in retrofitting and strengthening existing buildings and in the heritage replication.

The seminar will include examples of how composites have been used successfully to replace or work in conjunction with traditional construction materials, both in New Zealand and overseas, along with case studies and examples of local design and manufacturing capability.

See www.composites.org.nz for more information.

Press Releases

Airtech Advanced Materials Group Introduces the NEW Premium AQD SS 545CL Stainless Steel Quick Disconnect

The new Premium AQD SS 545CL quick disconnect is made from stainless steel with high temperature "O-Rings" for service to 500°F (260°C). The unique locking system will prevent accidental openings. The stainless steel construction along with an increased number of ball bearings provides a smoother operation and long service life.

The Premium AQD SS 545CL quick disconnect has two way shut-off fittings. When they are disconnected, the air flow is shut off in both the plug and the socket. This allows your vac valves to remain under vacuum pressure after the vacuum source has been disconnected. Parts can then be moved from the bagging area to the curing area without loss of vacuum. The Premium AQD SS 545CL is a rugged, dependable disconnect that can be installed in minutes when used with Airtech Vac Valves. The Premium AQD SS 545CL comes with a threaded female fitting designed to receive our Airflow autoclave and oven hoses.

Please contact our customer service department for further information:

airtech@airtechintl.com
Phone: 714.899.8100
Wesite: airtechonline.com
Press Contact: Holly Nguyen hnguyen@airtechintl.com
Tel : 714 899 8100 / Fax : 714 899 8179

Australian Carbon Fibre Industry Receives Expert Guidance

International experts provide guidance to help the Australian carbon fibre industry become world class

VCAMM and Deakin University, leaders in the Australian development of carbon fibre technology and expertise recently organised "Carbon Fibre - Future Directions", an international conference designed to position Australia as a power player in the carbon fibre composite materials market in the future. International experts shared their knowledge with Australian companies and researchers and helped to devise a path that would help Australia become integral to this high technology field.

The fully subscribed event held in Geelong earlier in March attracted both industry experts from high profile aerospace manufacturers and materials producers as well as members of academia who have had expensive involvement with the development and application of carbon fibre materials.

The Geelong location was chosen as it provided excellent access to local facilities as well as to the Avalon International Airshow. Of specific interest was the recently established Australian Carbon Fibre Research Facility or ACFRF (http://www.acfrf.com.au/), a multimillion dollar carbon fibre production facility at Deakin University's Waurn Ponds Campus. The ACFRF will be the world's first open access carbon fibre production facility that will attract both international and local projects. The facility is supported by the Victorian Government, through its Victorian Science Agenda (VSA) Strategic Fund and represents a joint venture between the VCAMM Ltd and Deakin University.

After touring the ACFRF, Mr. Chris Wilkinson, Engineering Director for Spirit AeroSystems Europe commented: "This facility in Geelong will place the region, and indeed Australia at the forefront of carbon fibre research".

Brad Dunstan CEO of VCAMM, one of the organisations responsible for the event was extremely pleased with the outcome and said that, "It was an outstanding success with all the speakers and all the delegates agreeing that this region is well-placed to becoming a leader in developing new composite materials to meet the rapidly growing demands of the 21st Century".

Professor Lee Astheimer, Deakin University's Deputy Vice Chancellor (Research) could also only see positives coming out of the event and that "this collaboration will see us working together on a range of projects that will take not just Australian Universities, but the whole carbon composite industry, along the road to creating a sustainable way of living in this century and beyond".

International visitors were impressed with what they saw and the potential for developing technological leadership. Although they came primarily to impart knowledge to Australia, many have also commenced international discussions with Australian companies and researchers that will no doubt see the potential for Australia to become more heavily involved in the carbon fibre industry of the future.

Carbon Fibre - Future Directions was sponsored by, VCAMM, Deakin University and the Victorian State Government.

Interviews with keynote speakers are available on the VCAMM Youtube channel at http://www.youtube.com/vcammau.

Events Schedule 2011

The following Composites Australia (CA) events are scheduled for 2011. Please contact Ann Byrne at the CA Secretariat for further details and registration. Don't forget to check the website for regular updates: **www.compositesaustralia.com.au/briefings.htm**

Wednesday 13 July 4.00pm – 7.30pm	**Trade Night** Rik Heslehurst – workshop: "Bolted or Bonded Composite Structures - Which is Best" Zbigniew Stachurski, Australian National University: "On the Void Reduction Mechanisms in Vibration Assisted Consolidation of Fibre Reinforced Polymer Composites"	Wollongong, NSW Chifley Wollongong 60 - 62 Harbour Street | Wollongong NSW 2500
Monday 1 August 9.30am - 4.30pm	**Workshop for Presenters** "The Techniques & Skills of Competent Presenting" A one-day interactive workshop delivered by Kirk Peterson of Performance Shift.	Melbourne VIC Stamford Plaza Melbourne 111 Little Collins Street
Thursday 25 August 5.00pm – 7.30pm	**Trade Night** Presentations: • Matt Haskett, School of Civil and Environmental Engineering: "The Need for More Advanced Techniques for FRP Reinforced Concrete Design" • Peter Eagles, Etamax Engineering: "Filament Winding Simulation" • "Introduction to RPC Pipe Systems (trading as Fibrelogic) & **Factory Tour**	Lonsdale (Adelaide), SA
Thursday 15th September 9.00am – 1.30pm	**Tour of Composites in Geelong** RPC Technologies VCAMM / Deakin University Sykes Racing / Concept 2 Australia	Bus transport to sites Geelong, VIC
Thursday 20 October 5.00pm – 7.30pm	**Trade Night** In conjunction with Challenger TAFE and Nuplex Composites Includes Graco RS Gun demonstration by Pumpline	Challenger TAFE Henderson, WA
Thursday 1st December 5.00pm – 8.30pm	**AGM / Trade Night / CA Christmas Party** **CA Golf Day on Friday 2nd December – save the date**	Gold Coast Venue TBC

This schedule is subject to availability of venues, speakers, resources and equipment and may change from time to time. Composites Australia is not liable for any loss or expenses incurred due to changes in the programme.

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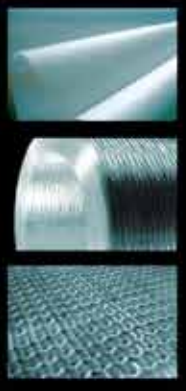

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