



COMPOSITES
ASSOCIATION
OF NEW ZEALAND

INDUSTRY MAGAZINE OF NEWS AND VIEWS

Issue 24

www.composites.org.nz

MARCH 2019



‘Submissions on the Government’s plans are open until 27 March – so I will be urging **ALL** members to get involved as the future of our industry and composites manufacturing in New Zealand may depend on it.’

— Susan Lake, member CANZ Executive

Govt overhaul of polytechnics and ITOs

What does it mean for **US?**

“As President of CANZ, I heartily endorse Susan Lake’s viewpoint, printed in this issue of Flexi. And, like Susan, I urge all CANZ members to make submissions as invited by the current 27 March deadline.

“Few issues impact as widely on our industry as the issue of training our workforce. CANZ values the excellent work done by NZMAC ITO in this area in the past and hopefully going forward. For this to happen, I urge our members to be vocal.”

— Glenn Campbell, President CANZ.

VIEWPOINT
By Susan Lake
Member of CANZ Executive

IT IS positive that the Government has acknowledged the skill shortage and realised that vocational training requires a fundamental rethink. This is a goal that the Composites Association should get behind given our ongoing and growing skilled labour shortage.

On the face of it, the Government’s overhaul of New Zealand’s 16 polytechnics into one central institution — the New Zealand Institute of Skills and Technology — may seem long overdue. Many of these polytechs are poor performing, do not serve industry and of late some have even failed to deliver courses which prepare graduates for the workforce.

Unfortunately, so far the proposals appear to also suggest dismantling of the Industry Training Organisations (ITOs) including the New

Zealand Marine & Composites ITO which serves our members. Specifically, the current draft of the proposal suggests stripping ITOs of one of their key roles in administering — including field-officer support to apprentices and employers. Further, it is proposed that the ITO function of Qualification and Assessment standard setting be rolled into new entities called Industry Skill Bodies.

The proposal may well serve large industries and skills such as construction, electrical and plumbing well, but the risk is that such an amalgamation will force measures that assess the value of a qualification on numbers and “bums on seats” as opposed to quality.

Composites manufacturing will always be a niche training sector with specific and diverse requirements that are constantly evolving. While some basic skills around material handling could be taught off the job, the key to developing successful employees is on-the-job training, in industry, with the guidance and support of a training organisation that listens and understands our evolving requirements. And these employees are necessary for the growth of our industry.

We should be training more and bringing in fewer skilled labour from

Continued on P2

ALSO IN THIS ISSUE...



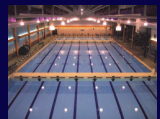
New composite manufacturing concept

2



Southern Hemisphere’s first electric passenger ferry

4



Understanding flowcotes — Tech Talk with Glenn

5



CAMX 2019 — join the tour with Zac

6



- Divinycell PVC Structural Core
- H, HP, HM Grade
- Various Finishing Options for processing
- Kitting

STRONGER LIGHTER SMARTER



New Zealand Composites
Advanced Structural Material Supplier

Talk to us about Advanced Composite Material Supply

- Dean 021 300 151
- pannett.d@extra.co.nz
- nzcomposites.com

New composite manufacturing concept

By Professor Simon Bickerton,
University of Auckland

For three weeks in January the Centre for Advanced Composite Materials (CACM) and several North Island manufacturers played hosts to visitors from the University of Kaiserslautern, Germany. Staff members of the Institut für Verbundwerkstoffe (IVW) are working on a collaborative research project with Tom Allen and Simon Bickerton of CACM, exploring a novel composites manufacturing concept. An industry workshop and a series of industry visits were attended by IVW researchers David May and Miro Duhovic, and technology transfer expert Matthias Bendler.

The IVW is a large, well equipped research centre with more than 140 employees, focussed on all aspects of the design and manufacture of composite materials and products. CACM and IVW have a long history of staff exchange reaching back to the 1990's, and this project is reinvigorating and strengthening that relationship with some of our younger researchers. Funds for a two-year project have been provided by the Royal Society of New Zealand and the German Ministry of Education and Research, primarily to enable interaction between the researchers. The preliminary results of this research have been encouraging and both groups are looking to attract funding for a larger project, working closely with New Zealand industry, and IVW's industrial partners in Europe.

The project (referred to as ReTention) focuses on a non-woven textile saturated with resin, laid into a mould containing a structural preform, with resin being transferred into the preform by compression. The workshop, on January 24, allowed the researchers to present this concept to representatives from four local manufacturers who provided feedback on potential benefits of the method, as well key challenges to overcome. Our German visitors were then treated to a variety of New Zealand manufacturing, through visits to four companies organised by CACM's Graeme Finch. CACM appreciates the time and support provided by the following companies: Core Builders Composites, Gurit, Jackson Industries, McMullen and Wing, Southern Spars and Waikato Milking Systems.

Research will continue building throughout 2019 with the New Zealanders visiting Kaiserslautern in September as part of the research project and to map future collaboration activities. ■

Collaboration between New Zealand and German Composite Research Institutes



Attendees at the Industry Workshop



The IVW team visiting with Waikato Milking Systems.

Training review

Continued from P1

overseas — but currently it is not possible to train in sufficient numbers to allow for the Industry to grow. But a one-size-fits-all industries approach risks small, agile, industries being lost or forgotten. This risks larger companies developing their own in-house training programmes, which are already starting to split off in the marine sector.

So, what can we do?

Further details of the Government's proposal will be unveiled in the coming weeks and Caroline will send out updates of these to all members.

By the end of March we should have a clearer view of what the Government is suggesting and what the best way forward is for our Industry and our ITO.

Submissions on the Government's plans are open until 27 March – so I will be urging ALL members to get involved as the future of our industry and composites manufacturing in New Zealand may depend on it.

Remember, whether you currently have apprentices in training or not, these changes will affect your business. Even for suppliers who do not typically take on apprentices, your business will be affected if manufacturers are unable to train future employees due to rushed or poorly considered changes to the industry training programme. ■



+ Excellence

+ Innovation

+ Service

Composites Plus NZ Ltd

Ph: (09) 271 3100

Fax: (09) 271 3101

Toll Free: 0508 RESINS (0508 737 467)

Email: Admin@compositesplus.co.nz

It's a big welcome to our new members



Zac Haar ... "Just taking half an hour and talking to someone with the same passion as me is rewarding. If you're an inactive member and reading this, take note, you'll probably get a call too."

Strength in numbers, says President



President Glenn Campbell

My first four months as President have now been completed and with the exceptional assistance from Zac Haar and Ross George we have managed to increase our membership almost 20 per cent to 61 members. I have set the CANZ executive a goal to achieve 100 members within the next two years.

Our industry will go through some major changes in the next year or so with more pressure coming from WorkSafe or other legislative bodies to make our manufacturing sites more user and environmentally friendly, with particular emphasis on safety.

Most of New Zealand industry has downsized to the point that there is so little time for individual companies available to keep up with the requirements placed on us so, it must become the role of CANZ to take up the role as the industry watchdog. Another worry is the shortage of workers who have adequate training not only in the basics but also in the processes that we may require to satisfy legislative requirements. CANZ must begin to develop a training strategy that will assist our members to enable their staff to become better composite technicians.

The only answer is for CANZ to take up these challenges on behalf of its members but for CANZ to do so it must grow and I challenge all of our members to be part of this recruitment drive. If you require any help please contact Zac Haar or myself.

Glenn Campbell
President CANZ

Training seminars

The CANZ Training Committee has arranged several seminars for this year, some of which have already taken place.

Initial events are focussed on WorkSafe Compliance Issues, specifically - Use of Styrene Detection Equipment.

The committee is working with Entec to provide a Certificate of Participation on how to use the Cub Styrene Monitor, and gather the information.

"This will be critical for members, in fact all workplaces with styrene-based products, to capture this information and use in conjunction with urine sample for mandelic acid to monitor, and protect our workforce, and improve industry practices, CANZ Training Officer Ross George said.

The first seminar was held in Auckland on 28 February and there will be one in Feilding on March 14. Hamilton and Christchurch events are also planned, he said.

Interested companies are asked to liaise with Ross George on 021 851 685 for details of upcoming courses. ■

Quarterly growth reaches almost 20 per cent

By Zac Haar

Part of my job on the CANZ Executive is to promote membership and, first off in this edition of Flexi, I'd like to offer a big welcome to our new members.

It has been a big quarter for growth. We have increased our membership by around 20 per cent and I look forward to meeting you all in person at this year's conference in Christchurch — I hope you can make it.

Over the past month or so, President Glenn Campbell and myself have been on a big membership drive. Cold calling is something I perhaps will never get used to, but I have really enjoyed it. Just taking half an hour and talking to someone with the same passion as me is rewarding. If you're an inactive member and reading this, take note, you'll probably get a call too. But it's not just about numbers, it's about making sure our members are aware of what's happening, who's who and where to look if you're having a rough time of it.

One of the drivers for this membership growth has been the change to the Workplace Exposure Standard. Our soon-to-be-held CUB styrene detector training, along with some PPE training will offer a good grounding.

I've heard the phrase "bang for buck" a lot, and I think this is truly what we are offering to our members, with more on the horizon.

For me personally, the training, the courses, the conferences, Flexi, and ICANZ all combine to deliver real value. But it's the informal stuff that really gets me going. The drinks after class, the conference dinner — this is a must, a really great night for all. Add in factory tours — I visit as many as I can and all are welcome at ours — as well as sharing ideas over coffee and creating friendships, real and unmissable value is achieved.

Taking a position on the executive and being involved has been fantastic for business. The number of referrals from "competitors" is just astonishing, likewise we pass work along where we can — especially where a particular job isn't our strong suit. For example, just this week I was sent a set of drawings by someone who was just too busy to deal with them. A quick chat later I passed them on to a mate that is well suited to this type of work and in a position to take it on.

This sort of relationship doesn't happen by itself. Joining CANZ is just the beginning. Put yourself in the mix, come to members meetings (all info will be in the latest ICANZ) and introduce yourselves. Furthermore, tell your friends. This goes for all members, pass information on to your local competitors, invite them to training sessions, they can even get on to our non-members mailing list.

I think that about covers it from me. Any questions, issues, or if you need to know who knows what, feel free to drop me a line. 0279356704 or zac@carboglass.co.nz ■

allnex



allnex is the market leader in the manufacturing and distribution of composite materials in Australia, New Zealand and the Pacific Islands. We are the largest and only local producer of composite resins such as gelcoats, flowcoats, and unsaturated polyester and vinyl ester resins.

Our materials are used in a diverse range of composite applications and products.

We pride ourselves on offering the region's most comprehensive product portfolio and end-to-end service ranging from research and product development to application advice and ongoing technical support.

With 33 manufacturing facilities, 23 research and technology support centres and 6 joint ventures, the allnex group serves customers in over 100 countries.

www.allnex.com

Australia: 1800 789 607
New Zealand: 0800 803 001

The Southern Hemisphere's first electric passenger ferry



Gurit proud to be involved in production

This 19m passenger ferry is destined to operate in Wellington Harbour carrying up to 130 passengers on each trip during peak hours.

Gurit is proud to be involved in the production of the Southern Hemisphere's first fully electric, zero emission commuter ferry being built by Wellington Electric Boat Builders (WEBB) for Wellington's long standing ferry operator East by West Ferries.

The 19m passenger ferry is destined to operate in Wellington Harbour carrying up to 130 passengers on each trip during peak hours.

The vessel will operate at 20 knots service speed, performing three back-to-back 25-minute runs with short recharges at one end of the commute before a longer recharge is required on off-peak times.

This is an ambitious electrification scheme for a high speed vessel and WEBB is working closely with the local council and electrical suppliers on the safe and practical application of shore charging, while McKay Engineering are designing the onboard Energy Storage System (ESS) required to meet the challenge.

On a conventional commercial ferry, energy consumption followed by maintenance are the by far the largest costs for the owner and operator over the life of the vessel. For a typical ferry this can easily be four to five times the purchase price of the vessel, therefore reducing the dead weight of the vessel has a direct impact on the cost to run the vessel.

For an electric vessel the challenge is somewhat greater, from the operator's point of view you have an energy cost that is approximately half that of diesel per kWh as a starting point. However the challenge becomes storing enough energy on board without over burdening the vessel and increasing resistance. The ESS for a high speed vessel becomes a significant portion of the vessels over-all weight.

This led the vessel's designers SSC Marine and Gurit Composite Engineering to select carbon fibre sandwich panels for the construction. Preliminary design work showed that

lightweight carbon construction was the enabling technology that helped minimise vessel dead weight and therefore energy consumption.

The vessel will be built using Gurit's Hi-Panel system of pre-infused CNC cut flat panels. This construction method minimises tooling and labour costs in building a one-off composite vessel, while allowing flexibility in the construction process by not having to commit to large moulds for the first vessel.

For more information on Gurit Composite Engineering and how the team can help with your next project please contact: Tony Stanton tony.stanton@gurit.com or 09 970 2942.

Gurit Hi-Panel Services

Gurit Hi-Panels offer builders ease and speed of build, reduced set up and labour costs, and high quality construction of their composite part. Hi-Panels are epoxy infused composite panels, which can be made from a variety of Gurit's core materials, with glass and/or carbon skins, and are either structurally engineered by the company's in-house team or manufactured to the customer's specification. They are suitable for a range of applications such as the structural elements of sailing yachts or power boats, hatch lids, doors and so on.

Hi-Panels can be delivered as finished panels, with maximum dimensions of 9m x 2m, or cut to shape, as supplied by the customer. The shapes can be labelled, and remain tabbed in the original panel for ease of transportation and storage.

For more information on Gurit Hi-Panel systems please contact Gurit NZ Sales Manager, Jason Bagnall jason.bagnall@gurit.com or 09 415 4879.

Sign up for regular information from Gurit at <http://www.gurit.com/register-for-news-alerts.aspx>, or follow us on your chosen social media platforms. ■

What's On

March 12 to 14, 2019
JEC — Paris, France.

April 10 to 11, 2019
Composites in Construction —
Amsterdam, The Netherlands.

June 19 to 20, 2019
Ecomcomp — Binley, Warwickshire.

September 2 to 5, 2019
Advanced Composites in
Construction, Birmingham UK.

September 23 to 26, 2019
CAMX Anaheim, California.

MARKET-LEADING STRUCTURAL CORE MATERIALS FROM GURIT



Gurit

Discover Gurit's comprehensive range of structural core materials for all application and processing techniques, supplied with a variety of finishes, in sheet form or as fully customised pre-cut kits.

- Gurit® PVC
- Gurit® Kerdyn™ PET
- Honeycomb
- Gurit® Corecell™
- Gurit® Balsaflex™

Gurit (Asia Pacific) Ltd

T +64 9 415 6262

E info-nz@gurit.com

www.gurit.com

Understanding flowcotes A technical perspective

Flowcotes are formulated to be used as topcoats (surface coats) and interior gel coats for FRP. They are very similar to gel coats except that they cure tack-free. They are used like paint on FRP surfaces—a topcoat to seal and hide a substrate and ensure that there is no exposed glass fibre. Normally, flowcotes are used as interior finishes or to cover a laminate to provide a pigmented surface that is easy to clean. In this article our technical expert Glenn Campbell discuss the pros and cons of flowcotes . . .

INTRODUCTION

Flowcotes cannot be used like gel coats because they contain wax and therefore cure tack-free.

Along with providing a tack-free surface, the wax in the flowcote helps to suppress styrene evaporation. This reduces the volatile organic content (VOC) emitted into the air. Flowcotes can be made from any type of resin such as Iso-phthalic, ISO/NPG or Ortho-phthalic based resin. It is therefore important to note that not all flowcotes are of the same in quality, so choice is important for your intended use. If the flowcote is to be used in a non-critical area, then a flowcote with a high filler loading can be used. Filling the flowcote with a filler will lower the cost, reduce the whiteness and end up having lower gloss thus reducing the cleanability of the surface.

SURFACE PREPARATION

With fibreglass laminates such as boat and camper shell interiors flowcotes should be sprayed after the laminate has cured and while it has a tacky surface. Beware of glossy laminates which could cause the flowcote to separate, sag, or provide poor adhesion.

While still wet, the flowcote enamel can be flecked or cobwebbed.

When using laminates that contain a "wax surface" such as an LSE resin (low styrene emission), this surface should be sanded with rough sandpaper to remove all indications of wax. The dusty surface should be wiped with a virgin solvent such as acetone and always by using clean rags. In all cases, before applying flowcotes to any surface, be sure the surface is clean, dry and free from contaminants.

APPLICATION

Flowcotes should **NOT** be applied to surfaces when the temperature is below 15°C as inadequate cure can result. Normally, flowcotes are applied with spray equipment, but they can be rolled. Brushing is not recommended due to poor flow and leveling.

For optimum results, uniform catalyst mix must be achieved. Even with the equipment properly calibrated, problems can occur due to poorly atomised catalyst; surging problems, poor tip alignment, contamination; or poor application procedures. Any of these conditions will quickly negate all benefits of calibration. The equipment (and application procedures) must be monitored on a routine basis to ensure proper application and cure of the gel coat. Inquire about and adhere to all equipment manufacturers' recommendations.

One kilogram of flowcote typically will cover 1.5 square metres, depending on the film thickness of the coating. A wet film thickness of 450 microns (18 ± 2 thou) is recommended for proper hiding, cure and performance properties. A film below 300 microns (12 thou) may not cure properly. Excessive thicknesses above 600 microns (24 thou) are more prone to cracking and tend to trap porosity. If a "fleck coat" of flowcote is desired over the base coat of flowcote, it should be applied while the base coat is wet.

CURE

It is recommended that the flowcote should be conditioned prior to use by making sure it is brought to a temperature of at least 20°C so that it can atomise adequately when spraying not to forget assisting in the cure of the flowcote. The gel time of the flowcote is very important as too short a gel time will not allow the wax in the product to come to the surface. If the wax does not get to the surface its performance will be reduced, especially in the recoating of swimming pools. When using flowcotes where they may be exposed to the sun when being applied, the gel time of the flow coat can be reduced by as much as 20 per cent. The catalyst level should not exceed 2.25 per cent or fall below 1.25 per cent to achieve proper cure. Of course, the application temperature will dictate the appropriate level as well as having sufficient air movement. ■



Flowcotes are commonly used for pools and here is an application where gel time is most important as well as protecting from Sun Strike when applicable.



This tank was manufactured on a male mould and therefore the flowcote is actually used to perform like a gel coat and therefore should be based on a Iso/NPG base.



Here's **9** good reasons
why you will benefit

1 The Association for Composites

If your work or interest is composites and fibreglass, we are the only association that focuses entirely on this business today. It helps one keep up with technology and other changes, and with our links to overseas composites association provides links worldwide. An association "Code of Ethics" protects members.

2 Legislation Assistance

The Composites Association keeps abreast of changes and issues guidelines to members.

3 Own Code Of Practice

Our very own "Composites Code of Practice" was published in 1998 and is the accepted "Code" for our industry. All members were able to provide input into its development to ensure it was workable. Compliance with the "Code" is the best way of meeting NZ health and safety requirements.

4 Annual Conference

Keeping up-to-date with technology can be as easy as attending the Association's conferences. A wide range of speakers update us on new materials, technology and equipment. There are hands-on equipment and materials demonstrations and trade displays with ideas and information for all.

5 Regular Flexi Magazine

The regular Flexi magazine is published for members to keep them abreast of what is going on in the industry.

6 Industry Training

The association has led in the development of training courses to suit our industry, working in association with the New Zealand Marine and Composites Industry Training Organisation.

7 Education, Marketing, Standards

Members can attend educational evenings to learn about materials and techniques. Members can participate in projects to market composites in New Zealand and support the development of accepted standards. An example of this was the publication of a "FRP Design Manual".

8 Low Cost

The cost to members is very reasonable indeed, in view of the comprehensive service provided by the Association. This is a great investment for your future in our industry.

9 Official Solicitors

CANZ would like to acknowledge and thank sponsor Clendons, Barristers and Solicitors, Commercial Lawyers, Auckland, now official solicitors for CANZ in its official magazines, newsletters and other communications to members.

New members

AC Fibreglass Ltd — Brian Walmsley
Auckland
www.acfibreglass.co.nz

Ampelite (NZ) Ltd — Kerry Andrew
Auckland
www.ampelite.co.nz

Fairfax Industries — Allan Grocock
Auckland
www.fairfaxindustries.co.nz

Raeline Ltd — Rhys Williamson
Kaiapoi
www.raeline.com

Safety Tanks Ltd — Warner De Boer
Tel 021 148 4059
Auckland

Seacraft Ltd — Lionel Sands — Auckland
www.haineshunter.co.nz



Regardless of the application — transportation, aerospace, marine, wind energy, software, construction and infrastructure, medical, academics, sports and leisure — CAMX is the must-attend event for products, solutions, networking, and advanced industry thinking.

CAMX-cellent

By Zac Haar

Man it's been busy. I talk to a lot of our members and everybody seems to be in the same boat and there's no sign of it slowing down any time soon. That said — we all need a break sometime and I suggest you take it in September.

CAMX 2019 is being held from September 23 -26 in Anaheim, California.

I've never been, always wanted to but just haven't managed to make it happen. Following on from our trip to China Composites last year we decided that no matter what, we are going to CAMX. I have it on good authority that this is the cats' pyjamas of composites expos.

There will be a few of you thinking about it I'm sure, particularly suppliers, but I think we should all just throw caution to the wind and book tickets.

Glenn Campbell has been busy reaffirming old relationships of late with the board of the ACMA (American Composite Manufacturers Association) and has cleared the way for a bunch of Kiwis to do some factory tours before or perhaps after.

I don't have time to arrange a tour package, and quite frankly I'm nowhere near organised enough anyway (just ask my wife). But, if you could give me an expression of interest and we can work around some numbers and dates then that would be cool.

We bumped into Kevin Hunter in Shanghai, good bloke, good chats and I think that much the same can happen at CAMX just a little bit better organised. I had hoped to take the kids, you know Disneyland etc, but it's not going to work for us so it looks like dad and I are going to head up to Seattle to see Boeing, San Fran, Napa, and as always see if we can find some motor racing.

If this sounds like something you are interested in have a look <https://www.thecamx.org/>, drop me a line and we'll see what we can do: 0279356704 zac@carboglass.co.nz ■



Everything you need in one place. A world-wide event promoting comprehensive and all-encompassing industry objectives.

**Combined Strength.
Unsurpassed Innovation.**

Created by ACMA and SAMPE to connect and advance all aspects of the world's composites and advanced materials communities, CAMX is an all-encompassing event.

Regardless of the application — transportation, aerospace, marine, wind energy, software, construction and infrastructure, medical, academics, sports and leisure — CAMX is the must-attend event for products, solutions, networking, and advanced industry thinking.

CAMX delivers...

- **A trusted history of success — ACMA and SAMPE, leaders representing the composites and advanced materials industry, have produced successful exhibitions for nearly 60 years.**

- **Collaboration — Industry leaders bringing together R&D, engineering, manufacturing, service providers, and end-users.**

- **Everything you need in one place. A world-wide event promoting comprehensive and all-encompassing industry objectives.**

- **Opportunities to expand your reach into untapped markets and applications.**

At CAMX you will...

- **DISCOVER** exciting new industry developments;
- **GROW** business opportunities;
- **DEVELOP** industry skills and connections;
- **RECOGNISE** potential impact on the industry.

TRUST OUR EXPERIENCE TO PROVIDE YOUR COMPOSITES



PJ HOBBS INDUSTRIES LTD



**PREMIUM TECHNOLOGY
DRIVEN
PRODUCTS**

Auckland
09 295 2200

Christchurch
03 348 4927

