

Show preview: COMPOSITES EUROPE 2013



This year's COMPOSITES EUROPE trade show takes place in Stuttgart, Germany, on 17-19 September. In our preview we look at just some of the innovations which will be on display during the event.

3D-CORE
Stand number: 4/A06
www.3d-core.com



3D-CORE's C+ structural foam core.

3D|CORE™, a producer of structural foam cores, is introducing the C+ product line, which is suitable for injection, winding and braiding processes. C+ offers improved acoustic, thermal and electrical insulation properties of carbon fibre components. This improvement is based on a hexagonal foam core in the laminate, which results in a very high compression, flexural and shear strength.

Airtech
Stand number 4/C21
www.airtech.lu

Airtech supplies vacuum bagging and composite tooling materials for the manufacture of composite tools and parts using



Airtech's FlowLease 160-37P16 combines a knitted flow mesh with a layer of perforated release film and is designed for use in resin infusion applications.

the vacuum bag techniques of wet lay-up, autoclave curing and resin infusion. Its latest vacuum bag films and release films include:

- Securlon® V-45, an economical vacuum bagging film suitable for phenolic resins and used for commercial autoclave processing with a maximum use temperature of 171°C;
- Thermalimide E, a high performance bagging film for cure temperatures up to 426°C; and
- Thermalimide E RBCS, a film treated both sides with a specialist release coating, which can be used for cure cycles up to 405°C and is ideal for use with thermoplastic materials and other high temperature applications.

For resin infusion applications, FlowLease 160-37P16 combines a high weight knitted flow mesh with a layer of perforated release film Wrightlon® 3700 P16. Due to the open structure of the knitted mesh, high resin flow can be achieved with most resin types.

AOC
Stand number: 4/E36
www.aoc-resins.com



AOC's EcoTek resin was used in the manufacture of this swimming pool.

AOC will highlight its EcoTek® Green Resin Technologies. The company has been a pioneer in green resin technology, having introduced unsaturated polyesters made with recycled content in the early 1970s. EcoTek resins are interchangeable with their traditional petro-based counterparts, and require no special processing. They retain the same or better physical characteristics,

including mechanical properties, and chemical and UV resistance. AOC has developed EcoTek resins that use up to 30% bio-derived, renewable resources instead of crude oil or natural gas. Up to 45% of EcoTek resin content can be post-industrial recycled material.

Beinlich Pumpen

Stand number: 6/B12

www.beinlich-pumps.com



The DARTec pump – compact and efficient.

The new lightweight, compact and efficient DARTec® pump offers great accuracy in terms of reproducibility and metering, and is said to be setting benchmarks in adhesive bonding technology in particular. The compact design makes it ideal for use in handling devices and robot applications. Low drive torques mean it has a good energy footprint, with efficiencies of around 90% possible even at low viscosity.

Bcomp

Stand number: 4/D05

www.bcomp.ch



Bcomp's ampliTex light biaxial 0/90° flax fabric with low twist yarn.

Natural fibre company Bcomp Ltd is promoting the advantages of flax for the production of high performance sports equipment, car bodies, designer parts and music instruments.

ampliTex® light flax fabric is made with a new low-twist yarn for a maximum

performance. While regular natural fibre yarns have a high twist, thus a low surface coverage at a given weight, this tape-like flax roving allows the design of fabrics with a very low fabric areal weight. The low twist also results in good alignment of the fibres, increasing the strength of the final composite part by 10-20% versus a part made from standard flax yarn. ampliTex fabrics are said to be ideal for replacing glass fibre fabrics in composites construction, cutting the weight of the required reinforcement material by up to 50%.

Cannon

Stand number: 6/A24

www.cannon.com



Cannon's assembly plant for the Alenia Aermacchi M346.

Cannon produces industrial processing solutions for urethane- and epoxy-based composites.

The company supplies the wind energy industry with low pressure resin dispensers for the infusion of epoxy formulations in the large blades manufactured for wind turbines. The Cannon DX machines include a three-component model that allows for the flexible use of two different hardeners in order to obtain different reaction profiles in accordance with the size of the moulded part, a request coming from blade manufacturers that have already appreciated the first two-components models. A new degassing unit for resin and a glue dispenser for the application of the two-component adhesive on the blade's edge will also be presented.

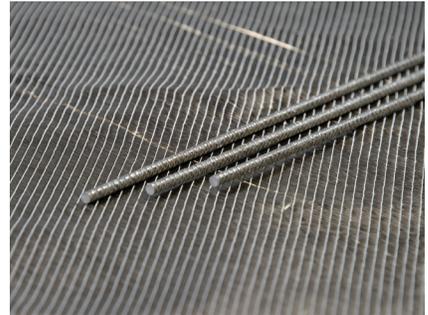
Visitors can also learn about Cannon's plants for the assembly of large composite and metal parts, such as the Alenia Aermacchi M346 advanced trainer. A complete compression moulding line for lightweight

reinforced thermoplastics (LWRT) is also available for the production of automotive parts such as engine shields.

CG TEC GmbH

Stand number: 6/B04

www.cg-tec.de



CG TEC has developed basalt fibre reinforced rebar for use in concrete.

CG TEC has developed basalt fibre reinforced rebar for concrete, as a potential replacement for steel rebar. Unlike steel, it is not susceptible to corrosion. It also weighs less, and is alkali-resistant and non-conducting. The tensile strength of the basalt fibre reinforced rebar is higher than steel rebar, which means less is needed. In addition, concrete and basalt rebar have similar temperature expansion characteristics. CG TEC produces the basalt fibre rebar on automated production lines in a single manufacturing process.

Chromaflo Technologies

Stand number: 6/A40

www.chromaflo.com

Chromaflo will launch a number of pigment paste lines and a chemical thickener line. The new product lines in Europe include specialised pigment pastes for unsaturated polyester (CF line), polyurethane pultrusion (UPL line), other polyurethane processes (DL line), epoxy (EDC-ND line) and plasticiser applications (DH line). Along with these standard lines, Chromaflo provides custom-formulated dispersions, colour matching and toll processing.

The AM line offers a number of chemical thickener dispersions for sheet and bulk moulding compound (SMC and BMC) applications. According to Chromaflo AM products are among the most consistently

reactive magnesium oxide dispersions available and have been designed to deliver a specific, controlled, thickening response.

All the new products are solvent-free and are based on REACH-compliant raw materials.

Dow
Stand number: 4/D40c
www.dow.com



Dow's VORAFORCE TP polyurethane system can be used to produce window profiles.

Dow Formulated Systems will join German reinforced plastics association AVK's booth. Dow representatives will be present to advise customers on composite solutions and fabrication challenges, with a focus on pultrusion, long fibre injection and filament winding.

Dow will also introduce its new VORAFORCE™ TP polyurethane system for the pultrusion process to the German market. This product is said to enable efficient fabrication of strong, tough and durable composite parts for applications such as windows, building profiles, electrical infrastructure and civil engineering.

ECTA Handelsgesellschaft mbH
Stand number: 4/D40
www.ecta-gmbh.de

ECTA is showcasing its range of glass fibre materials for thermoplastic and thermoset applications. New short lengths starting at 1.5 mm and small diameters of 6-7 µm expand the chopped strand portfolio. The range of thermoset products is complemented by multiaxial fabrics as well as surface mats and core mats in a broad range of unit weights.

FORMAX
Stand number: 4/E02
www.formax.co.uk



FORMAX has developed a range of products based on recycled carbon fibre.

FORMAX will be launching two new fabric ranges during the show.

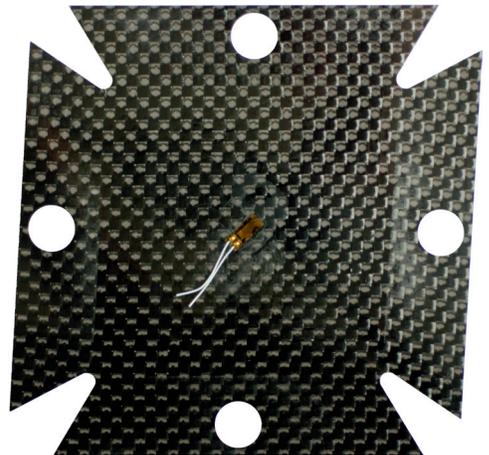
A-FORM: As the automotive industry continues to seek superior quality carbon fibre textiles in increasing volumes, FORMAX has responded with the development of several specialised fabrics that are suitable for the production of Class A body panel components. Based around +/-45° configurations and in weights of 150-300 g/m², these reinforcements minimise cure and processing times, thereby reducing labour and painting costs. Thanks to super fine stitching and a variety of laminated surface veils 'print through' on finished parts is eliminated.

reFORM: The creation of a new Recycling Division at FORMAX's UK headquarters has allowed the company to develop a recycled materials range. reFORM is a reinforcement manufactured from reprocessed carbon fibre waste. It is engineered for a variety of non-structural and structural applications across a range of industries.

Flugzeug-Union Süd GmbH
Stand number: 4b/12
www.fus.de

FUS has expanded its portfolio with the supply of complete material sets/kits and system work stations. Pre-cut vacuum films (film width over 6 m), fleece material, spacer textiles, adhesive tapes etc. are delivered ready for production in order to reduce waste and manufacturing times. For the reduction of cycle time the supply of system work stations ensures increased productivity for the user.

Grasse Zur Ingenieurgesellschaft
Stand number: 6/G17
www.grassezur.de



Grasse Zur Ingenieurgesellschaft has developed a high precision method for shear testing.

Grasse offers a high precision method for measuring shear characteristics of fibre reinforced plastics (FRP). The system for testing quasi-static shear in FRP is said to exceed the precision of results obtained with the current standards (DIN EN ISO 14129, ASTM D 4255, ASTM D 7078). The test system using a shear frame was employed by BAM, the German Federal Institute for Materials Research and Testing, for extensive testing of the specific shear characteristics of carbon fibre and glass fibre reinforced plastics.

HP-Textiles GmbH
Stand number: 6/E24
www.hp-textiles.de

Brilliant colours for high demands!



Available in all RAL colours or in transparent!

HP-Textiles' IMC/MTI process can handle all RAL colours.

HP-Textiles is presenting its IMC (in-mould coating)/MTI® (membrane tube infusion) hose process. In this vacuum injection method the varnish is first placed in the

negative mould. The IMC is a specially developed two-component varnish for in-mould applications. As well as time and cost savings, the quality of the finished component is higher because the varnish enables a better adhesion to the component than separate varnish procedures. The MTI is a membrane-wrapped suction hose which is permeable for air and gases but resin cannot escape. This ensures that the fibre layers get completely impregnated without sucking surplus resin out of the component. In addition, no pinholes will occur and voids are minimised.

IBT.InfraBioTech GmbH
Stand number: 6/G05
www.infrabiotech.de



IBT will highlight the composite applications of its infrared heating technology.

IBT will present its STIR® (Selektive Transformed InfraRed) heating emitters, which

offer potential time and energy savings in the curing of composites. The heaters have a rapid response and the level of radiation can be adjusted precisely to suit the process and product.

The STIR technology offers benefits for the automation of manufacturing processes, especially for warming up thin-walled prepreg material in the infrared tunnel. Further applications include the finishing of components by coating, agglutination of thermoplastic or thermosetting parts, welding of composites, as well as small repairs on damaged components such as rotor blades. The product range covers small emitters as well as complete modules.

Incotology Ltd
Stand number: 4/E27
www.incotology.de



Incotology specialises in basalt fibre products.

Incotology is presenting a new range of coated basalt fibre fabrics, which, as a result of superior mechanical, chemical and thermal properties, can substitute glass and carbon fibre in many composites applications. Incotology offers a selection of coating materials, including aluminium, chromium, copper and silver.

Basalt fibre fabric is ideal for applications requiring temperature resistance, insulation, and fire protection. Basalt fibres can withstand temperatures up to 750°C. Specific coatings on plain or twill basalt fabrics can enable the properties of basalt fibre to be optimised for each application. The aluminium-coated basalt fabric, for example, was developed for applications such as decorative surfaces for desks, kitchens or displays etc.

JETCAM
Stand number: 6/F27
www.jetcam.com

JETCAM International has formed JETCAM Composite GmbH, which will focus on selling JETCAM's range of nesting and composite material management applications to companies in Europe. The move is in response to increased demand from the aerospace, automotive, marine and wind sectors across the region. The new company will provide local level expertise for the complete range of JETCAM



17.09 – 19.09.2013
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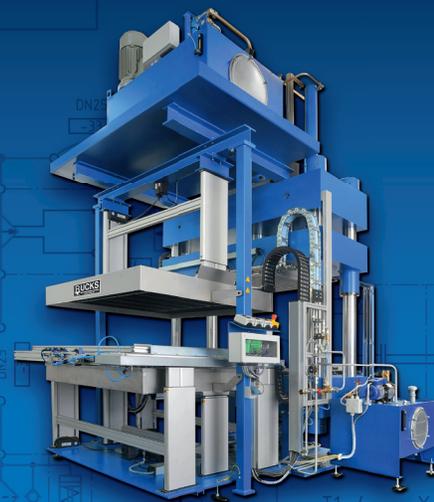


16.10 – 23.10.2013
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composites manufacturing and nesting products: the JETCAM Expert nesting software, which delivers savings by continually searching for the optimum nest pattern for plies; and CrossTrack, which provides complete traceability of material, material life, orders, plies, kits and nests, all in real time.

KraussMaffei
Stand number: 6/C08
www.kraussmaffei.com



A laboratory production facility for the high pressure RTM process, featuring a Krauss Maffei dosing unit, high pressure RTM mixing head and mould carrier.

KraussMaffei will highlight its high pressure resin transfer moulding (RTM) and trimming technologies. With partners Dieffenbacher GmbH, the Technical University of Munich and the Fraunhofer ICT, KraussMaffei is capable of implementing the entire process chain, from unwinding the semi-finished textile material, to machining of the finished composite component. As part of this group, KraussMaffei supplies the metering technology, including mixing head, mould technology, and solutions for cutting the finished component. Dieffenbacher provides the components for preforming and the press technology.

The KraussMaffei metering system for processing highly reactive resins, such as epoxy, polyurethane (PU) or polyamide (PA), is said to enable extremely short cycle times. It features a vacuum-assisted tank system and a high-precision, energy-efficient temperature control. The high pressure RTM moulds are also heat-balanced

and have a seal system that enables resin injections with up to 100 bar of mould cavity pressure. Integrated sensors ensure optimum filling of the mould. Machining cells are used at the end of the process chain.

LAMILUX
Stand number: 6/B04
www.lamilux.de

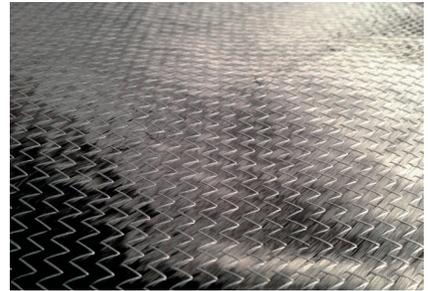


LAMILUX's carbon and glass fibre reinforced composites are found in the roof, side walls and flooring of trucks.

LAMILUX has developed a continuous flat sheet process designed for mass production. CFRP LAMILUX Carbon X-treme can be manufactured in sheets and panels of 1-5 mm thick. These can be used in vehicle bodies, trailers and electric vehicles. LAMILUX High Strength X-treme is designed for use in side walls, roofing and floors. This laminate contains a high proportion of glass fibre reinforcement. The result is an extremely strong, rigid composite, which also exhibits a low specific weight. In LAMILUX High Impact, the emphasis is on a long service life and robust resistance to occasional impacts in outdoor applications, combined with a high quality appearance. It was developed as a versatile top face sheet material for sandwich panels in commercial vehicle and caravan construction.

LAMILUX also has two new materials for the sports market: LAMIsport X-Treme and LAMIsport X-Treme4in1. Made of carbon and glass fibres, these materials are being used in the facing layers in the sandwich structure of sports equipment to give a 15% weight reduction, high UV resistance and extreme stiffness and strength.

Mitsubishi Rayon
Stand number: 4/D44
www.mrc.co.jp



TK Industries, acquired by Mitsubishi Rayon in 2012, is developing improved carbon fibre fabrics for the automotive sector.

Mitsubishi Rayon has been developing the PCM (carbon fibre prepreg compression moulding) mass production technology for automotive components, which is said to offer a fast production cycles and consistent quality. TK Industries, a manufacturer of carbon fibre multiaxial fabrics acquired by Mitsubishi Rayon in 2012, is developing improved fabrics for the automotive sector.

Mondi
Stand number: 4/E41
www.mondigroup.com/fibromer



Mondi is launching FIBROMER, a cellulose fibre reinforced composite.

Mondi is launching FIBROMER®, a polymer reinforced with cellulose fibre that can be processed by injection moulding to produce products for the automotive, logistics/transport, electronics and furniture industries.

Mondi developed FIBROMER in a compounding process that homogeneously mixes kraft pulp fibre – a renewable resource produced by Mondi – with a

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Our recommendation for aerospace applications:

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High performance structural foam

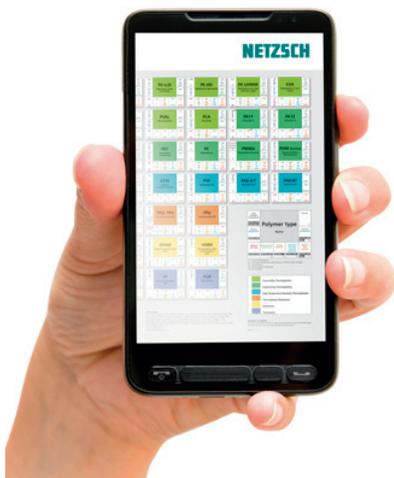


polymer granule. The resulting composite is said to offer advantages over composites based on short glass fibres, other natural fibres or talc-filled material. These include faster injection moulding cycles, higher material strength, increased stiffness and high impact strength at low temperatures. FIBROMER also has low odour, low density and very low abrasion. Cellulose fibre is available year-round at a consistent quality. It is produced from renewable resources and is highly recyclable.

Neue Materialien Bayreuth GmbH
Stand number: 6/B04
www.nmbgbmh.de

New Materials Bayreuth GmbH has developed a technique to enable the cost-competitive mass production of endless fibre reinforced thermoplastic composite components for the automotive industry. It combines compression and injection moulding in one manufacturing cell in order to realise short cycle times. The system comprises a compression injection moulding machine ENGEL ESP 4400H/2500 V with a parallelism-controlled vertical clamping unit (25,000 kN) and a horizontal injection unit. It enables the production of fibre reinforced thermoplastic composites, with integrated borders and ribs, in cycle times of 60-90 seconds.

Netzsch
Stand number: 6/B17
www.netzsch-thermal-analysis.com



The new NETZSCH Thermal Properties of Polymers App.

NETZSCH has released its first App, which is available for iPhone, iPad and android smartphones and tablets. The *Thermal Properties of Polymers App* allows users to search the following polymer categories: commodity thermoplastics; engineering thermoplastics; high-temperature resistant thermoplastics; thermoplastic elastomers; elastomers; and thermosets. The App also outlines which methods and thermal analysis instruments are available to suit specific needs. It is available free of charge at www.netzsch.com/n23482.

Permabond
Stand number: 4/A25
www.permabond.com



Applying Permabond adhesive to carbon fibre.

Permabond has been involved with a Cardiff University student project to build a single-seater racing car for the IMechE Formula Student competition. Over 2000 UK students compete in this event, held each year at the Silverstone Race Circuit. The Cardiff Racing team opted to use lightweight composite materials for the construction of their car and they contacted Permabond's technical team for help finding a suitable adhesive to bond composite parts. Permabond's range of composite bonding adhesives includes several new carbon fibre colour-matched epoxies which are already being used for production of high performance cars and motorcycles in Europe.

For the students' application, Permabond's epoxy adhesive was used to bond aluminium inserts into carbon fibre tubes

COMPOSITES EUROPE

COMPOSITES EUROPE 2013 (www.composites-europe.com) is organised by Reed Exhibitions with the support of the European Composites Industry Association (EuCIA), the American Composites Manufacturers Association (ACMA), the German engineering association VDMA (Verband Deutscher Maschinen- und Anlagenbau), the German association for reinforced plastics AVK, and *Reinforced Plastics* magazine.

The 2013 trade show is preceded by AVK's annual conference on 16-17 September.

COMPOSITES EUROPE 2012 attracted 8040 visitors and more than 420 exhibitors to Düsseldorf on 9-11 October last year.

to construct the suspension links on the vehicle. This was part of an exercise to minimise the overall mass of the car, in particular, the unsprung mass which allows the suspension to react faster to changes in direction, braking and bumps thus improving the overall handling characteristics of the vehicle. The adhesive was also used to construct drive shafts for the vehicle. This was identified as an area where significant weight reduction could be made. As a rotating component, its mass reduction had a meaningful effect of the acceleration and braking of the vehicle.

Reichhold
Stand number: 4/C28
www.reichhold.com

Reichhold's Technology Center in Sandefjord, Norway, has been granted NOK7.1 million (approximately €1 million) over a three-year period for the RenWind project under the Norwegian Research Council's clean energy programme. RenWind's objective is to develop environmentally friendly and cost-efficient high performance, no emission vinyl hybrid resin systems for production of wind turbine blades. The funds are to be used on external tests and research work. An equivalent amount of work will be performed by Reichhold internally. Partnerships have been formed with several institutes, including SINTEF Materials and Chemistry (MC) and

DTU Wind Energy, Section for Composites and Materials Mechanics (the former Risø National Laboratory).

RUCKS Maschinenbau GmbH

Stand number: 6/B26

www.rucks.de



The RUCKS Thermoforming-Press KV 297.

RUCKS will present its Thermoforming-Press KV 297, which is used for making composite parts for the aviation industry. The press was designed to realise the shortest possible cycle times with reproducible results and a high degree of energy efficiency.

At the centre of the plant is an upstroke column press with a pressing force of 3000 kN and a closing speed of 200 mm/s. In order to reduce heat emission into the ambient area, the 600 mm x 1200 mm press heating plates are each divided into three segments and provided with ample insulation. This division into segments enables the user to heat up only those areas needed for the tool, thus reducing heating costs. The three segments of the heating plate can be shifted horizontally by 1.5 mm so that top and bottom tool can be aligned to each other perfectly.

The pre-heating station of the plant features two ceramic infrared heaters. The maximum temperature of the upper and lower heaters is 570°C in order to heat up prepregs as fast as possible. By adjusting the height of the infrared heater, the heat on the work piece can be adjusted precisely. The heaters are encased to become an infrared oven, increasing energy efficiency.

The loading station is positioned behind the pre-heating station. Here the prepregs

are placed in a U-shaped transport frame. A servo-driven system transports the material automatically from the loading to the pressing station. The height-adjustable transport frame can be adjusted to the different tool heights in the press by means of multi-lifting devices.

SCIGRIP

Stand number: 4/E24

www.scigrip.com



SCIGRIP will showcase its range of structural adhesives.

SCIGRIP is demonstrating its commitment to the German market with the announcement of an expanded German sales team. This includes a new German Key Account and Business Development Manager, who will be available at the show for meetings.

SCIGRIP will also showcase its range of tough methylmethacrylate (MMA) structural adhesives, developed for the bonding of carbon and glass composites to metals and engineered plastics. Included within this range, and recently accredited with the EN45545-2 2013 fire, smoke and toxicity (FST) standard, is SG300, which is popular for interior rail applications. Offering primerless metal bonding with ratio-adjustable curing speeds, high elongation at break and excellent impact resistance, SG300 is manufactured in the UK, meaning European customers are assured of rapid distribution.

Schuler

Stand number: 6/D10

www.schulergroup.com

Schuler offers equipment which can economically produce CFRP parts in large volumes. It uses the RTM process, in which woven carbon fibre mats are placed in a die, filled with resin and cured by applying heat and the pressure of the press. In the high-pressure RTM process, resin is injected as quickly and smoothly as possible into the vacuum mould which is opened by just a few tenths of a millimetre. This gap injection process enables resin to spread over the mat with far less flow resistance and thus low injection pressure. It then quickly

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Schuler provides equipment for the mass production of carbon fibre reinforced plastic parts.

infiltrates the mat before polymerisation is started by heat. The curing process begins with the wetting of the last fibres.

Curing takes 4-8 minutes. Depending on the part, the pressure can vary between 30-150 bar. Large-surface exterior panels with clamping areas of 3600 mm x 2400 mm require total press forces of 36,000 kN or more.

The preform and part handling processes, as well as the necessary die cleaning, account for a considerable part of the RTM cycle, lasting 2-3 minutes. On request, Schuler can fit the RTM presses with two shuttle moving bolsters so that a common upper die can be operated with two alternating and movable lower dies. This reduces downtime to the period it takes to replace the lower dies, e.g. with a distance of 4.5 m per moving bolster approximately 20 s.

SICOMIN
Stand number: 4/B41
www.sicomin.com

SICOMIN, a formulator and manufacturer of high performance epoxy resins, will highlight its range of fire retardant systems and liquid expanding epoxy foams.

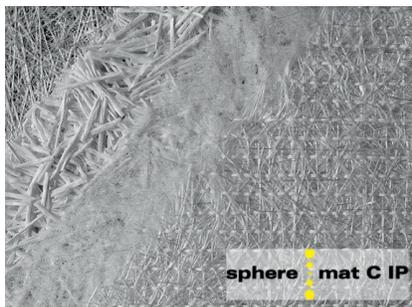


SICOMIN's epoxy foaming systems are suited for aerospace, rail, marine and sports applications.

Epoxy foaming systems: These two-component epoxy foaming systems are suited for aerospace, rail, marine and sports applications. With excellent bonding properties on composites, metal and plastic, they are also compatible with fresh polyester gel-coat surfaces. Formulated and available in four standard densities the specialist epoxies feature very low expansion pressure, no shrinkage during and after hardening and a closed cell characteristic. This inhibits water uptake and allows the finished parts to be used underwater.

Fire retardant systems: This range of epoxy systems was recently accredited with the ASTM E-84 Class A standard for the civil engineering industry and the FAR25-853 standard for the aerospace industry. The products are suitable for laminating, infusion, prepregging, epoxy foaming and coating production methods.

Spheretex
Stand number: 4/C28
www.spheretex.com

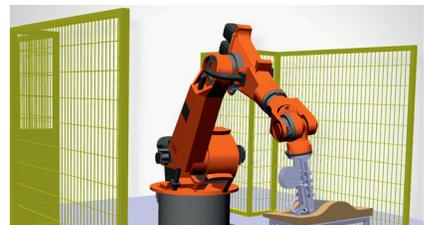


Spheretex's Sphere.mat C IP is a combination of reinforcement, core material and flow medium in one ready-to-use complex.

In recent months Spheretex, a specialist in engineered core solutions, has concentrated on enhancing its range of closed mould products. All Spheretex's solutions for infusion or injection driven processes contain a high performance flow medium. They also fulfill important functions like reinforcement, print blocker and/or core material, and are characterised by high drapability. Flowmat is a basic product that can be used for all types of closed mould processes. Laminates with high quality surfaces can be produced. Sphere.mat C IP was developed from Flowmat by adding one layer of chopped core material inside. Laminates up to a thickness of 9 mm can be realised by this combination of reinforcement, core material and flow medium in one ready-to-use complex. For superior surface finish a layer of surface tissue is added.

Sphere.core SBC IP is a flexible core material with flow medium for robust sandwich constructions up to 15 mm. This glass nonwoven, volumised with thermoplastic microspheres, gives laminates superior strength and impact resistance.

SWMS
Stand number: 6/E36
www.swms.de



SWMS' TapeStation is an independent programming and simulation software which has been developed for the automated lay-up of reinforced tows and tapes.

SWMS' TapeStation programming and simulation software is designed to improve quality and reliability in the production of CFRP composites by robot. It can be employed in automated lay-up of fibre tows and tapes, helping to increase the quality of the components produced and shorten production time. Complex components are possible. SWMS solutions rely on the OEM PLM standards from CATIA V5 of Dassault Systèmes or NX of Siemens PLM Software.

Umicore

Stand number: 4/E35

www.usmb.be



Umicore's ECOS ND15 cobalt-based technology offers a drop-in replacement for the cobalt carboxylates currently used in the curing of unsaturated polyester resin.

Umicore is introducing its ECOS ND15 cobalt-based technology, which is designed to offer a sustainable alternative curing technology for unsaturated polyester resins and gel-coats.

ECOS ND15 is a cobalt-containing polymer. Umicore reports that a full toxicological study has been carried out by an independent institute, which has shown that ECOS ND15 is a non-hazardous substance for all uses tested. The product allows polyester resin and gel-coat producers to substitute their toxic accelerators by a harmless substance, on a one-to-one basis, without the need to adapt anything else in their formulations.

VOSSCHEMIE GmbH

Stand number: 4/C28

www.vc-24.de



VOSSCHEMIE is presenting the new VUP FOAM RESIN FR3, which is designed to meet the requirements of the rail industry.

VOSSCHEMIE is presenting its new VUP FOAM RESIN FR3, which is designed to meet the requirements of the rail industry. The product is reported to combine high flame resistance with outstanding low smoke toxicity values and a weight reduction of up to 30% in composite parts.

VSE Volumenteknik

Stand number: 6/B12

www.vse-flow.com



The VSE R series of flow meters offers a quick response time.

VSE Volumenteknik has developed a new range of helical screw flow meters. Advantages of the RS series are said to include high and almost viscosity-independent accuracy, pulsation-free measurement, extremely low pressure losses, quick response time as a result of the innovative rotor profile, gentle fluid measurement, and excellent functionality thanks to an intelligent sensor system.

WeightWorks Engineering

Stand number: 6/G23

www.weightworks.de

WeightWorks Engineering is presenting a patented mould making process which is said to enable the quick, flexible manufacturing of moulds for various processes. At the show a portable demonstration machine will be shown in public for the first time. Applications for the process include the cost-effective manufacturing of accurate copies on patterns in steel, plastics etc., and cost-effective manufacturing of prototypes and small series parts.

Wickert Maschinenbau GmbH

Stand number: 6/E12

www.wickert-presstech.de



The door inner core element for the Airbus A350, manufactured in an RTM injection process with a Wickert WKP 2500 S Composite Press.

WICKERT will be presenting a complete door inner core for the Airbus A350 aircraft. The carbon composite component is manufactured using an RTM process at Eurocopter in Donauwörth, Germany.

This application involved the WICKERT WKP 2500 S Composite Press. Because the carbon fibre parts must never be exposed to oil mist, the hydraulic press system was required to be absolutely oil-tight. This was achieved by completely enclosing the press area and the entire press peripheral system, including the hydraulic and electric systems. The press, which has a closing pressure of 2500 kN, features an upper and a lower mould, each permanently installed. The clamping plates measure 2400 mm x 1800 mm. The control and process visualisation integrates the injector, heating/cooling system and press shuttle. The latter handles the fully automatic fitting with the center mould, which is fed from high-bay storage, and also the return transport after the process. The cycle time is around 6 hours per aircraft door. Comprehensive data acquisition and detailed documentation of the manufacturing process, including tracking through all operator actions, are included. ■

COMPOSITES EUROPE 2013 – Facts & Figures

Event

COMPOSITES EUROPE 2013 – 8th European Trade Fair & Forum for Composites, Technology and Applications

Opening hours

17-19 September 2013
8 am-7 pm (exhibitors); 9 am-6 pm (visitors)

Location

Landesmesse Stuttgart GmbH, Halls 4 and 6, Messepiazza 1, 70629 Stuttgart, GERMANY

Exhibition topics: raw materials (resins, fabrics, thermoplastics, additives); semi-finished products, intermediate products and finished products; processing technology; machines, equipment, consumables; design, simulation; and services.

Visitor target groups are designers, engineers, technicians, buyers, management of OEMs and

suppliers from the most application industries: automotive; aerospace; transportation (rail, buses, mass transportation); wind energy; building and construction; marine/shipping; leisure.

Organiser/contacts

Reed Exhibitions Deutschland GmbH
E-mail: visit@composites-europe.com
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