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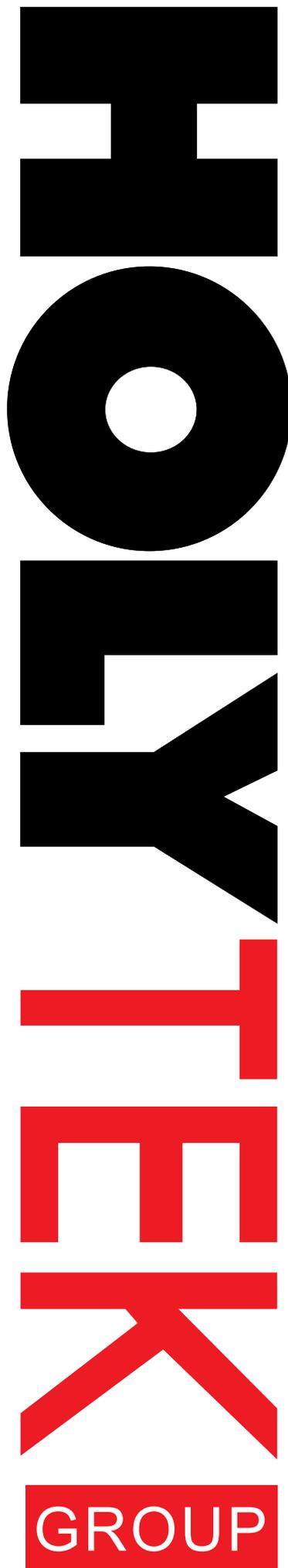
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Since 1989



10



22



64



82



90

FEATURES

- 10 Shedding light on better curing and finishing
- 18 Malaysian timber dares to set new benchmarks

COVER STORY

- 22 **Ligna 2019:** 'Industry 4.0' is the new reality now
- 24 **Stop press:** Safety takes on a new urgency!
- 26 Exhibitor highlights at the Hannover trade fair

SPECIAL FOCUS

- 64 **Interzum 2019:** When panels are the new fitting!
- 70 Highlights of innovations, functionality in Cologne

EVENT PREVIEW

- 82 MumbaiWood 2019 is set for another successful run
- 84 CIFF-Shanghai is the new paradigm for global living
- 86 Malaysia Wood Expo to make its debut in November

EVENT REVIEW

- 88 Canadian Wood hosts educational seminars across India

EDUCATION

- 90 RPL certification has benefits for workers, employers

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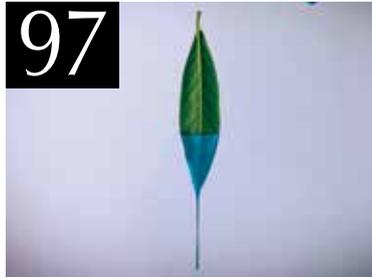
Email : gsez@olamnet.com

Phone : (+241) 02 00 10 86 / (+241) 06 00 56 66 / (+91) 83 83 057 074

WOODNEWS

Contents

MAY - JUNE 2019



DESIGN & FINISHING

- 92 AHEC turns focus on American red oak
- 94 From Ukraine, 3D wall art for travellers
- 95 Korean artist releases steamed walnut series
- 96 Building taller with 'self-shaping' wood

PRODUCTS & PROCESSES

- 97 New solutions from DSM, Ifurn, Sushil Decor and more

NOTES & NEWS

- 105 Interprint, MTC, Myanmar, Dieffenbacher, Elsa+Ganter, 3D printing and more

WOODNEWS

Chief Editor | Dhananjay Sardeshpande
dhananjay@pdatrademedia.com

Chief Copy Editor | Roy Thomas
roy@pdatrademedia.com

Founding Publisher | Gouri Ramakrishnan

Founding Editor | Dr. Joseph George

President | Tony Doulton
tony@pdatrademedia.com

Senior Manager - Advertisement | Fabian Roberts
fabian@pdatrademedia.com

Senior Executive - Circulation/Admin | Chandrababu M
chandru@pdatrademedia.com

General Manager - Design | Infant Vikas
vikas@pdatrademedia.com

Manager - Design | Ramesha K S
ramesha@pdatradefairs.com

Layout | Govindaraju S | govind@pdatradefairs.com

Taiwan, China and Hong Kong:
Robert Yu, Worldwide Services Co., Ltd., 11F-B, No. 540,
Wen Hsin Road, Sect. 1, Taichung, 408, Taiwan.
Tel.: +886-4-2325-1784 Fax.: +886-4-2325-2967
Email: erin@acw.com.tw

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32/2 Spencer Road, Frazer Town, Bangalore, 560 005, India.
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Chairman | Pradeep Devaiah

Managing Director | Srinivasan S.

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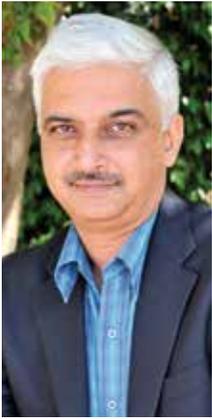
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Education, excitement on the trot

Dear Reader,

The year 2019 has been a rush of events, each as exciting and educational as the other. On the heels of DelhiWood came another opportunity to visit Interzum (Cologne) and then the Mecca of woodworking, Ligna (Hannover). While the former is, as always, an eye-opener on new innovations in interior

of the organisers of such exhibitions – Deutsche Messe in the case of Ligna – in acting as catalysts of change and progress. Much in the same manner as the trio of IndiaWood, DelhiWood and MumbaiWood are contributing to the development of the furniture manufacturing ecosystem in India.

FROM THE EDITOR

DHANANJAY SARDESHPANDE

In this issue I am featuring a Danish company that has commissioned an intelligent UV-LED-based high-speed furniture coating line in Lithuania, utilising inline UV monitoring and control. There are lessons to be learnt in the manner in which this supplier to IKEA has to keep in mind not only quality but also sustainability and energy efficiency to ensure a strategic, long-term investment, and to stay in the forefront of sustainable manufacturing. You also have an article listing more examples of Malaysian timber being put to great use, without compromising on form, functionality and aesthetics.

design and furnishing materials, the latter made me happy to see that the concept of 'Industry 4.0' is well on its way to factory floors and workshop tables! At Ligna in particular, such has been the push from the technology providers, machinery manufacturers and suppliers of consumables that it warms one's heart to see a revolution gathering pace in front of one's own eyes!

And there are previews to important trade shows coming up to keep you on your toes for the rest of the year! There is our own MumbaiWood (17-19 October); there is the China International Furniture Festival (8-11 September) in Shanghai; and the Malaysian Wood Expo (19-21 November) is making its debut this year in Kuala Lumpur. Each event has its specialisations and attractions for Indian exhibitors and visitors. So, where are you packing your bags for?!

It was also heartening to see more than a score of Indian exhibitors of engineered boards and decorative panels rubbing shoulders with internationally renowned brands! There are detailed descriptions and highlights from both the international trade fairs in this issue of the magazine, for those who missed them. No less is the contribution

Until next time, happy reading.

STAYING IN TOUCH

In keeping with the times and for ease of communication, WoodNews has discontinued the printing of Business Reply Envelopes with each issue of the magazine.

However, we continue to welcome your views and reviews of happenings in the industry, your contributions to and suggestions for the magazine, as well as business proposals via email.

For Editorial content: dhananjay@pdatradedmedia.com, or editor@woodnews.in, or call +91-80-42505036.

For Advertising options: tony@pdatradedmedia (+91-80-42505059), or fabian@pdatradedmedia (+91-80-42505065).

For Circulation and Subscriptions: chandru@pdatradedmedia.com (+91-80-42505054).

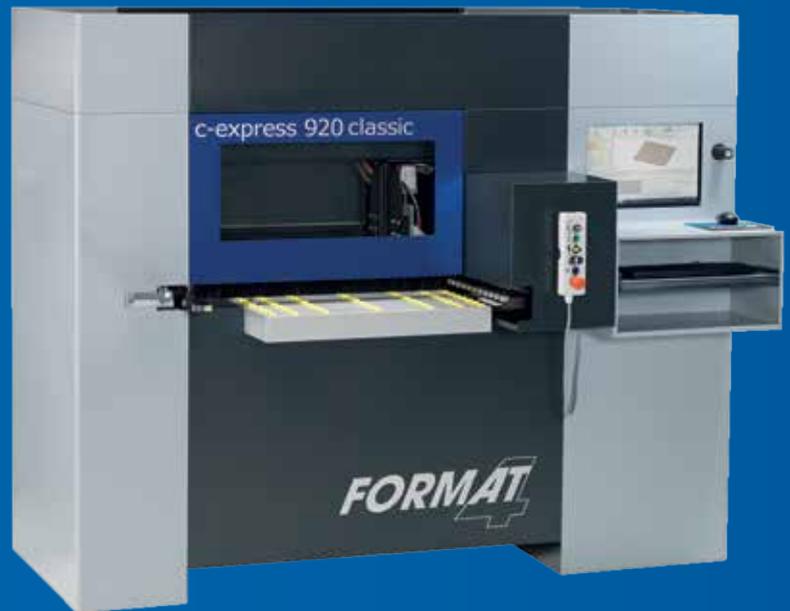
If you prefer to communicate by snail-mail, you are welcome to write to us at: WoodNews Magazine, No. 32/2, PDA House, Spencer Road, Frazer Town, Bengaluru-560005. (+91-80-42505000).

We look forward to hearing from you soon!

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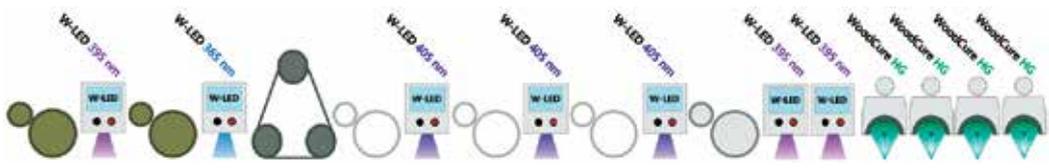
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First intelligent UV-LED-based high-speed furniture coating line goes into service utilising inline UV monitoring and control

1

1 Denmark-based Efsen (top) supplies highly efficient and future-proof production lines with UV-LED curing, and an illustration (bottom) of its line established in the Freda factory.



Shedding light on better curing and finishing

Lithuania's oldest furniture company, SC Freda (founded in 1880) has started production on its new high-speed furniture coating line. SC Freda specialises in manufacturing flat pack furniture from chipboard, MDF and cellular lightweight construction panels.

The surfaces range from decorated paper surfaces with clear UV varnish, to highly pigmented UV coating systems. SC Freda is a major supplier for IKEA manufacturing multiple product series.

As a measure to increase its manufacturing capacity, SC Freda expanded with a new production facility, featuring a high-speed production line with UV-curing. This new line complies with the high IKEA quality and process control standards, to supply superior products.

In addition, sustainability and energy

efficiency are important topics that are taken into consideration to ensure a strategic, long-term investment, and to stay in the forefront of sustainable manufacturing.

Key directives

Efsen UV & EB Technology (founded in 1986) is an expert in radiation curing technology, with extensive experience in measuring and integrating UV-curing equipment for a wide range of applications and industries.

Due to the strong heritage of furniture production in Denmark and its neighbouring countries, it has been natural for Efsen to develop a unique understanding for optimising curing solutions for the wood and furniture industry.

Efsen and Freda have been working on optimising UV for many years. There have been many things for Freda to consider, with

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cost efficiency, superior product quality and maximised production capacity being some of them. Its intention to implement modern, effective and environment-friendly production process was among the key directives from the start of the project.

2 *Despite the high-power output of LEDs being the main cost driver, the Danish solutions provider has come up with one of the industry's lowest stand-by power consumption.*

At Efsen it was clear that the only reasonable way to supply a highly efficient and future-proof production line would be with UV-LED curing. While UV-LED curing in the wood industry is nothing unique anymore, the current UV-LED curing production lines are only using a fraction of the capability the UV-LED technology can offer.

Efsen wanted to go one step further, not limiting the use of UV-LEDs to gelling positions, which is how UV-LEDs are used in most lines. The intention was to change the whole process to UV-LED curing on all positions except the final top coat cure.

LED curable process which with as much UV-LED as possible, without a negative impact in coating price or properties.

It was possible to develop a new curing process, replacing all conventional UV systems with the exception of mercury lamps at the end of the production line. A key decision to make this a reality was the choice of 365 nm LED for the sanding position.

Going through the normal coatings process, starting with sealing of the surface with two clear coats, following up with sanding the surface, and then proceeding to build the colour with multiple layers of base coats, to finally finish it off with a top coat, the challenge has been to find a process solution with only one LED unit in each position, replacing multiple conventional UV lamps on each station.

2

Energy consumption

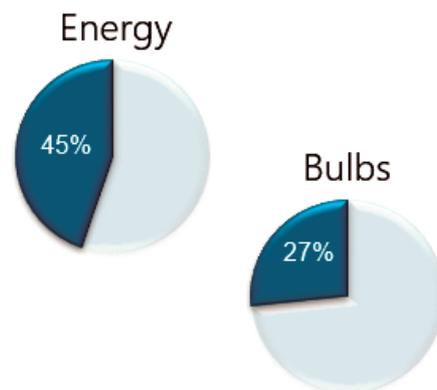
Before: (6  + 9 ) x 18 kW = 270 kW

After: 7  x 7 kW + 4  x 18 kW = 121 kW

Bulb exchange (250 days/year, 3 shift production)

Before: 60 Bulbs / year

After: 16 Bulbs / year



Akzo Nobel

The price and performance of conventional mercury lamps cannot be matched yet for the final layer, due to the challenges of formulating price-competitive UV-LED curing top coatings that meet the high resistance and colour accuracy requirement of a top coat.

Curing the sanding sealer with LED only is an industry first. Such a challenging task goes beyond what an equipment supplier can accomplish alone. With the high-power output of LEDs today, the primary limiting factor of the technology, and also the main cost driver, is the coating itself.

Therefore, it was a benefit that Akzo Nobel was the designated coating supplier for this project. From the first discussions Akzo Nobel agreed into a cooperation to develop a UV-

Overcoming challenges

The conventional line setup, which was the starting point at SC Freda, was with 50 metres per minute as the target speed. The biggest difficulty was the surface cure in front of the sanding station. It is critical that the coating cures well enough not to clog the sanding.

Furthermore, there will run both white and dark grey base coats, which include titanium dioxide pigment that absorbs a lot of the UV irradiation up to 400 nm.

Efsen solved these challenges together with Akzo Nobel by defining the optimal LED wavelength on each station, ensuring a perfect match with the chemistry for optimal curing. The final setup also uses height adjustable LEDs to adjust the gloss level of the top coat.



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3

3 *Two W-LED and five WoodCure configured in the new factory in Lithuania.*

With the low temperature of an LED-cured process in combination with the full control of the UV uniformity with Efsen's proprietary ICAD technology, the process runs with very high gloss stability. Furthermore, the low running temperature prevents issues with edge band glue melting, which can otherwise be a problem.

Calculations also showed that 55% energy saving could be realised by selecting UV-LED systems, rather than conventional mercury-based systems. In addition, the long lifetime and reduced maintenance required with UV-LED systems helps maximise the uptime of the production line.

The standby power consumption of conventional UV-lamps – which had not been taken into account in the calculations – is eliminated when choosing UV-LED, increasing the actual efficiency further.

Additional benefits

In addition to the LED systems, Efsen's conventional UV lamp system, the WoodCure, provides some nice benefits. Due guided cooling and superior temperature control, in combination with state-of-the-art reflectors and power supplies, they provide an

exceptionally high intensity and a maximised lifetime.

These systems are utilising reflector cassettes, which allow for a very quick and convenient cleaning and bulb change. With only 25% stand-by power level, they feature some of the market's lowest stand-by power consumption.

Even after ensuring that the chemistry and the light sources works in synergy, fulfilling the application requirement, LED-curing presents a unique obstacle to overcome in order to ensure long term process stability.

UV-LEDs, in contrast to conventional UV systems, consist of thousands of individual light sources and each of them is slightly different. Measuring the light source at a few defined positions – as is being done at conventional light sources – will not give the required process security.

During the lifetime of the LED a deviation will occur, such as a defect segment, damaged optics or dirt on the lens that would have a negative impact on the output, hence the cure. If this would happen in a position away from the measuring point, it would not be recognised in a normal measurement.

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4

4 One of many ICAD sensors, part of an inline control that continuously measures the UV output of lamps across the width of the whole line.

Process control

But defect segments, damage or dirt are not the only reasons why an in-line process control would be a huge benefit for UV-LED systems. Even if UV-LEDs last much longer than mercury-based UV lamps, they still age. This means they lose power over their lifetime.

This aging is very temperature-sensitive, requiring a perfect balance of the cooling within the UV-LED system. The aging might also be different from chip to chip, something resulting in that deviations within the UV-LED system will become bigger over the lifetime.

Any replacement LED-modules would have a higher power output compared to remaining modules.

Efsen solved this process stability issue with the proprietary ICAD inline process control which is integral part of all Efsen's UV-LED products. ICAD is an inline control which is continuously measuring the UV output of the lamp across the width of the whole line.

It recognises deviations of the emitted UV power and is automatically adjusting the individual UV LED arrays to produce a homogeneous UV distribution over the whole width of the UV LED system. Deviations of <5% can easily be reached using ICAD technology.

What's ICAD?

By utilising ICAD technology, SC Freda is able to have a continuous control of the UV output being applied during actual production. All this information generated by ICAD can be extracted to provide a complete history of UV output, which can be used for quality documentation of the production batch.

If required the documentation can be made for each piece of product individually, showing the actual UV energy being applied to each individual product.

SC Freda decided to choose Efsen's W-LED systems incorporating ICAD. The W-LED is an all-in-one unit, where power supplies, PLC control and cooling air supply are all included into an and easy-to-maintain housing. This saves space around the line, as no external electrical cabinets are required.

W-LED is easy to install and use and only requires a power and PLC connection. The integrated cooling air blowers forward filtered cooling air to the LED modules taking care that the LED modules are not getting dirty to guarantee optimal cooling of the LED modules increasing the lifetime further.

This filtered cooling is very important under normal conditions inside a wood processing plant. Exchanging the air filters of a W-LED can be done without tools, for a fast and easy filter replacement utilising standard filter cassettes.

The W-LED comes with optional electrical height adjustment, sensors which activate the W-LED when a product arrives, safety sensors to deactivate the conveyor in case a bended part is getting stuck, and customised light shields which are designed to fit onto the conveying system.

The W-LED, with integrated UV-LED modules, and the ICAD measuring system provides a state-of-the-art solution which is unique in the market, providing complete UV control, all the time.

The W-LED is designed to allow for a quick and easy installation by a local technician. It measures and controls itself and warns operators if any action needs to be taken. This is what "user friendly" and "full process control" really is about! (www.efsen.dk).



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Architects Chan+Eayrs and designer-maker Sebastian Cox created the Blushing Bar for the 2019 Wallpaper* Handmade exhibition in Milan. The bar was made out of American red oak injected with red calligraphy ink and pushed not only the boundaries of the material but also of its designers and maker.

Red oak - the most abundant of all the American hardwood species - is hugely popular in the U.S., employed for everything from flooring to furniture, staircases to cladding. It can also be used structurally and, given a protective treatment, in exterior applications.

Daring to set new boundaries



1

Featuring some of the most unique and different uses of Malaysian timber

1 Timber rafters and battens form a tight lattice that filters light into the Four Seasons Spa in Langkawi.

Timber from Malaysia has come a long way since the days when the mention of a wooden structure would conjure up imageries of traditional, vernacular-built forms in rural villages, such as the ubiquitous village houses or native longhouses on stilts with thatched roofs.

All this has changed and, today, timber is being used in extraordinarily imaginative and creative ways.

The Henderson Waves and Nautique in Singapore, Four Seasons Resort in Langkawi and the Shangri-la's Villingili Resort, as well as Viceroy Resort, in the Maldives, have distinctive, time-transcending designs that are testaments to the versatility and flexibility of Malaysian timber for innovative and experimental uses.

Bridge on ridge

The Henderson Waves connects Mount Faber Park and Telok Blangah Hill Park in Singapore in a rather dramatic fashion. This 274-metre bridge, the highest pedestrian walkway in Singapore, with a central span of 57 metres, is designed to blend in effortless harmony with the natural landscape, connecting existing pathways and parks to provide natural and continuous access from both hills.

This engineering feat of a bridge comprises four distinct sections: seven undulating curved steel ribs; supporting hollow sectioned vibration-dampening steel frames; Balau timber deck with curved balustrades, wooden seats and alcoves.

The undulating curved steel ribs form a 'wave' that alternately rises over and under its decks. The curved ribs form alcoves that function as shelters hugging seats within.

The bridge's sinuous curves, designed to look like 3D waves, and its 1,500-square-metre timber deck required a great variety of ▶

different modular panels to form the complex dimensions.

Altogether 5,000 pieces of 70x32-mm Balau modular boards were used to clad the bridge in areas meant for interaction between man and material, such as the walkway, alcove seating and sidewalls.

The boards were fabricated with numerical precision using proprietary software, providing exact dimensions of the surface at regular 500-mm intervals, thus reducing material wastage. Timber specialist Venturer of Singapore supplied the Balau strips, which were certified as originating from sustainable sources by Certisource, a UK-based timber legality verification standard.

In the boathouse

Docked at Raffles Marina, Singapore, an unusual looking structure with portholes and a huge timber drum is actually a boathouse named Nautique, the home of Kevin Hill and his wife Kelly Chan.

Kevin is in the third of three generations of English professionals and craftsmen involved in the construction industry, specialising in timber. Having lived in Singapore since 1992, he understands tropical timbers very well and often specifies Malaysian timbers due to their legal credentials.

As a specialist timber contractor, he conceived the idea of a boathouse that meets all the requirements of a boat with the comfort of an apartment. It is effectively a floating water villa, the construction of which did no harm to the seabed.

The 2,000-square-foot Nautique consists of three levels. The lowest level is equipped with a kitchenette, bathroom and a lounge that opens out to a patio. A master bedroom with an *en suite* bathroom occupies the middle floor, while the top level is an open-air entertainment deck complete with a jacuzzi.

The eye-catching timber drum is actually the stair tower, which is framed in Balau and clad in Merbau. The decking is made of teak, while the floors are Balau joists with tongue-and-groove Merbau strips.

The interiors are furnished with Merbau floors, solid teak furniture and cosy sofas. The boathouse, apart from being the owner's ideal retreat, is meant to be a prototype for floating luxury villas that could be tugged to exotic locations and quiet islands for a truly private escapade, without feeling that one is on a boat!



2

Resort for all seasons

Inspired by the Alhambra Palace in Spain, the design of the Four Seasons on the Malaysian resort island of Langkawi is a combination of Moorish, Arabic and Indian influences in a Malay *kampong* setting.

Latticed timber screens and Moorish architectural features are recurring themes in this resort. High walls with plenty of indoor courtyards to provide privacy are typical characteristics of built forms adopting Moorish architecture.

Located between its reception and outdoor floating pavilions, the consultation area sports a lattice of Chengal rafters and battens beneath a fibre-glass roof. This roofing installation is not only structural but also ▶

2 The Balau deck of the Henderson Waves curves seamlessly into a seat, a balustrade and then back into a deck.

3 The Balau-clad drum of the Nautique is actually the stair tower and not a flue.



3

serves as a filter for the otherwise too intense sunlight streaming into the double-volume space.

The roof is asymmetrically held up by painted masonry wall on one side, and square timber columns on masonry piers on the other. The roofing structure frames the pastel-coloured walls to provide an uplifting yet calming space for consultation and preparation before any spa treatments.

These are complemented by the judicious use of timber in slats as simple screens and the polished Balau flooring.

Mystical Shangri-la

The Fashala Restaurant on Addu Atoll, Villingili Island, offers seafood cuisine and features the most dramatic design of the three restaurants and affords spectacular views of the ocean. The slightly tilted giant central columns in the restaurant are clad with strips of Meranti.

Located in Shangri-la's Villingili Resort and Spa, the restaurant floors are in Balau and the screen walls are of Meranti slats. All the timber work was finished to a consistent lime-washed look and feel, which binds all the disparate materials to provide a harmonious and relaxed spatial experience.

The 61 villas of the Viceroy Maldives on Shaviyani Atoll, spread over 17 acres, are designed on the interpretation of the hull of an inverted Maldivian *dhoni*, a traditional fishing boat.

A deliberate move away from a stiff square or rectangular design, the villas have irregular shapes with curved walls, lending a sensuous feel to the spatial experience. Every villa comes with a private pool and a private sun deck.

Those with a room on the upper floor have a dormer window for stargazing. An interesting mix of Balau, Kapur and Meranti were used for different parts of the resort's structure and interiors ranging from roof trusses, ceilings, flooring, doors and windows.

A giant chill-out swing suspended over the Balau deck from the ridge beam of the villas' roof heightens the enjoyment of the Maldivian sea breeze and the boundless sky.

These projects are just a few of the many found within the region, as well as in other parts of the world, that prove that a discerning eye for aesthetics and deep understanding of timber's technical qualities as a building material could result in breathtaking functional structures that become icons in themselves.

Whatever the design script, Malaysian timbers such as Chengal, Balau, Merbau, Kapur and Meranti help dramatise and liven the construction stage.

Information on these and other popular Malaysian timber species is available on the MTC Wood Wizard, which is accessible on its website (www.mtc.com.my).

4 The Balau deck outside one of the villas at Viceroy Maldives Resort.

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'Industry 4.0' is the new reality now

1

As technology providers push digitisation and automation, furniture manufacturers big and small seem to be toeing the line, writes **Dhananjay Sardeshpande**

1 A total of 1,500 exhibitors from 50 nations presented their impressive solutions for the future.

The world's leading trade fair for woodworking and wood processing technology, Ligna this year (in Hannover, Germany) made me realise that the vision put forth by the trade show in 2015 has become a reality, with furniture businesses big and small latching on.

The focus on digitisation, automation, robotics and augmented and virtual reality was evident even during Ligna 2015 (I missed the 2017 edition) but the adoption of "smart" technology on the factory floor was very much in evidence this time.

2 Eumabois and VDMA presented a framework for a new 'Plug-and-Work' standard through a joint project.

It must go to the credit of technology providers, machinery and tool suppliers and the Ligna team that what was once only wishful thinking in the concept of 'Industry 4.0' is now a proven production methodology that will change the way furniture manufacturing takes place in the years to come.

According to the management of Ligna, some 40% of visitors were either upgrading their existing machinery or considering the purchase of new machines to reap the benefits of 'Industry 4.0' technology.

A total of 1,500 exhibitors from 50 nations presented their impressive solutions for the future, making innovations tangible and easy to grasp for users from every sector of the industry, on a scale unrivalled throughout the world.

More than 90,000 visitors from over 100 countries came to Hannover to check out the industry's latest advances and find exactly the right technologies and approaches to help them stay competitive and grow their businesses. Over 40,000 trade visitors came from abroad, with a noticeable increase in the number of attendees from South-East Asia.

Trends & innovations

Manufacturers of wood processing machinery for solid and engineered wood concentrated on automation and integrated systems, especially on modular technologies as a

2





3

gateway to digitisation. The approach is end-to-end digitisation – with concepts spanning from planning and design to production and monitoring – as opposed to island solutions.

The other notable feature of these new digitisation technologies is that they are as easy and intuitive to use as smartphones. Another key trend is the use of augmented reality – most notably the use of virtual reality headsets and tablets to visualise work-steps and machine status.

Robotics is increasingly becoming the norm across all areas of industrial manufacturing, from materials handling to collaborative processing by humans and machines, right through to surface finishing. The surface-finishing link in the value chain is becoming increasingly integrated into the overall production system.

Automated guided vehicle systems are optimising materials flows. Advanced central system control modules are intelligently managing associated data and aggregating it quickly and efficiently for even the most demanding of single-batch production scenarios.

‘Plug & Work’

Cloud-based data management has now fully made the transition from proprietary systems to digital ecosystems. Thanks to a growing array of digital assistance solutions, the use of production data for preventive maintenance and production planning is getting more efficient all the time.

Another vision that is getting closer to becoming reality relates to networking based on standardised communication protocols for

all machines. The European Federation of Woodworking Machinery Manufacturers (Eumabois) and the German Engineering Federation (VDMA) used Ligna to present a framework for a new ‘Plug-and-Work’ standard through a joint project by eight leading European manufacturers of woodworking machinery.

This year’s trade show also presented “all-in-one” solutions that can efficiently bring together multiple standalone machines to create integrated process flows. The highlights of the wood-based construction area included the world premiere of a 6-axes aggregate that can process work pieces on all sides without repositioning.

In the forestry technology section the spotlight was on climate change, ‘Forestry 4.0’, digital machine integration, supply chain tracking, timber flow management, the use of VR headsets for machine control, and apps for various in-forest operations.

The next Ligna will run from 10 to 14 May, 2021, in Hannover, Germany.

3 *The adoption of ‘smart’ technology on the factory floor was very much in evidence this time.*

4 *The surface-finishing link in the value chain is becoming increasingly integrated into the overall production system.*



4



1

Stop press: Safety takes on new urgency!

Manufacturers around the globe are employing cutting-edge technology (pun intended!) to eliminate chances of injuries while operating mechanised saws through preventive and sensor-assisted methods. This was evident at the Felder, SawStop and Altendorf stalls at Ligna.

1 *Felder's system has sensors that detect any movement past a certain threshold around the saw blade from all directions to trigger its safety mechanism.*

Felder unveiled a system (patent pending) that could potentially be one up on SawStop's proven system. If the sensors detect any movement past a certain threshold – which surrounds the saw blade and protects against access from all directions – a safety mechanism is triggered.

The system lowers the saw blade below the circular saw bench a few milliseconds after a risk is detected and before the blade touches flesh. The extremely fast response time is based on the principle of electromagnetic repulsion.

2 *The SawStop safety feature only kicks in after the accident has happened.*

The safety mechanism does not cause any damage to the blade or incur extra costs. Unlike the SawStop, Felder's table saw is ready for reuse at the push of a button. The system

doesn't feature any wear parts, thereby avoiding the need to adjust or maintain anything.

Felder is offering its safety system as an extension with its Format-4 Kappa-550 sliding table panel saw, which it says supplements the existing standard protective equipment.

Electrical signals

SawStop's famous technology – demonstrated repeatedly at Ligna using a sausage – is able to sense flesh and shut down immediately afterward. The saw blade carries a small electrical signal, which the safety system continually monitors. When skin contacts the blade, the signal changes because the human body is conductive.

The change to the signal activates the safety system. An aluminum brake springs into the spinning blade, stopping it in less than 5 milliseconds. The blade's angular momentum drives it beneath the table, removing the risk of subsequent contact. Power to the motor is shut off.

But the SawStop safety feature only kicks in after the accident has happened. Resetting the saw can be done by simply replacing the blade and affordable brake cartridge. The entire reset process takes less than 5 minutes.

Altendorf is developing its 'ASA' safety assistant that employs a three-stage system to prevent accidents. The first stage involves the machine emitting an optical signal. Stage two sees the rotational speed of the saw blade reduced, which greatly increases the

2



resistance felt by the operator. This gains valuable time to prepare the system for stage three, in which the blade is brought to a standstill and the whole unit drops away into the table.

Optical detection

Experts caught their breath as a member of Altendorf's development team moved a hand towards the saw blade at the speed of a normal feed rate. The saw blade, a 400-mm disk spinning at about 5,000 rpm, simply disappeared – all in a fraction of a second. The blade braked to a standstill too.

Various defined situations are recognised as parameters and classified using a number of cameras to gather data and a powerful computer to synchronise and interpret it. If

the system detects a hazard situation, it responds as described by warning the user in two stages and then, in the third stage, removing the hazard altogether. The saw can resume work immediately after the incident.

Altendorf's engineers felt optical detection techniques were more promising than sensor-based solutions. This optical solution thus significantly exceeds the capabilities of sensor-based systems, which respond only to heat and human skin.

The system copes readily with damp wood and conductive materials and coatings too. It satisfies in full the development objective of ensuring machine operators are not restricted in any way in their use of the siding table saw.

– *Dhananjay Sardeshpande*

Wood for Wood

A CNC machine made of wood did we say? Yes, and built by a carpenter for joinery professionals on an industrial scale too! Its inventor, Mr Burkhard Bessler, built one for his own business 3 years ago, and has sold more than 70 of these machines so far.

The Holzfraese CNC machine consists of phenol resin-coated plywood panels from Koskisen and can be completely dismantled. Polymer concrete in the under-frame provides the necessary mass. It works with the so-called single-cutter principle, which not only allows furniture to be built, but also all conceivable and unthinkable products made from panel materials.

On display at Ligna, the machine itself requires neither a large suction nor a new compressor. It takes up very little space during operation. Its software consists of the control 'Beamicon2', the CAM program 'Estlcam' and the CAD 'Rhino 5'.

Holzfraese requires minimal setup time, offers a good price-performance ratio, produces few emissions, and is maintenance-free, the company claims. It is ideal for woodworking operations specialising in small-series production, engraving, and any other application requiring a high degree of customisation and precision.



During the nesting process, the wood chisel works on the principle of back-spans: the chips remaining in the kerf ensure the secure hold of all nested elements. Optionally, a vacuum table with vacuum pads can be inserted in the machine bed.

The machine is available in two Versions. 'Kompakt' has a total of five models with travels (x/y) from 1000x500 mm up to 1800x900 mm, with a Z-stroke of 190 mm. 'Speed' offers travels of 2000x1000 to 3000x2100 mm with a travel speed of 50 metres per minute in four models.

Holzfraese says its router is an automated solution that requires no marker pencils, rulers or T-squares. It can also handle a variety of clamping systems. The machines are sold by the regional specialist dealers of the Gewema Group (www.gewema.de).



Venjakob puts data to good use

'Get connected' and 'Generate added value' to networked machine production: these were the mottos of Venjakob, the global leader in coating and finishing lines from Germany. For this purpose, Venjakob is now offering two technology platforms for use.

The Tapio ecosystem, well-known in the woodworking industry, which is Cloud base, and the in-house development, the dashboard analysis tool VenProfit. The Venjakob dashboard and the Tapio solutions provide an insight into how customers can retrieve processed machine data effectively – for example, to monitor the production process, plan anticipated maintenance, or use it for management-level analyses.

VenProfit stores the operating data independently in the local network and

optionally in a Cloud. Access to the data takes place via defined interfaces, which are individually adaptable according to customer wishes and given conditions.

Venjakob's in-house development focused on decoupling the ODA from the control platform as well as a flexible evaluation of the operating data on various end devices. The solution can be used independently of industries and business areas and enables Web-based data access.

For the user, VenProfit offers many additional benefits for machine operators, production and operational management as well as general management:

- Management key figures as a basis for decisions
- Display of the machine line production status
- Insight into consumption
- Planning machine maintenance
- Demand forecast
- Cost reduction
- Risk minimisation

Based on a Venspray Perfect coating line, Venjakob also demonstrated how RFID tags incorporated in work pieces are used to configure machine parameters. When the tags pass the RFID reading station at the in-feed area, the machine adjusts itself according to the parameters stored under the number of the tag.

Also, the request of customers to reduce hazardous substances and improve occupational safety in the production process has led Venjakob to search for an alternative to acetone, which is VOC- and label-free as well as distillable and recyclable.

1 Online colour management made simple with RFID tags (left); and digital machine management via VenProfit (right).



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Altendorf is the world market leader for sliding table saws. Today, it annually produces 2,400 sliding table saws for the wood, metal and plastics industry.

With an R&D that is constantly looking at improvements, the company is able to constantly come up with innovations. At Ligna it showcased some of these new technologies.

When it comes to machine maintenance, the Group intends to create a closer connection to its customers. With remote maintenance, it can provide immediate support for newer machines in the Altendorf Group product line-up.

Much upgraded table saws from Altendorf

For Altendorf, this involves F45 EvoDrive or ElmoDrive type machines produced during or after mid-2015 with a corresponding software update and a network cable upgrade. With the help of software, the support team can gain direct access to the user's machine and check the control system, eliminate sources of errors and adjust settings. This support is designed to further reduce downtimes in future.

Preventing accidents from happening in the first place is the main focus. The company has come up with an accident-avoidance idea that is designed to eliminate the flaws of past safety systems. The Altendorf safety assistant draws technologically on hand recognition with the help of a 3D camera to prevent false activations and accidents.

Additional support

Palin, used in combination with the crosscut fence, allows you to cut parallel and conical work pieces on the sliding table.



By butting against the side of the work piece, differing lengths can be cut quickly and precisely without having to move the Palin. The system has now been enhanced with a new feature: by folding the measuring system away, it also serves as an additional work piece support.

Parallelogram cross slides (PQS) – allows positioning without change.



The fence rule arranged in the centre allows the work piece to be positioned at the front and the rear. The two adjustable supports ensure secure support. Also for motorised flip stops (PQS UNO Flex): The narrow design with centre-arranged fence rule means the material can be positioned at the front and the rear without having to change the rule.

With no more than 17 kg, all Duplex models now have improved handling.



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AURANGABAD: M/s. WEKO PRODUCTS: Mr. Vijay Borade +91 9930530558 / wekoworld@gmail.com

BANGALORE: M/s. VICTORY COMFORTS: Mr. Arun Kumar / Mr. Guruprasad +91 94482 92444 / +91 9448563582 / +91 80 22233799
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CHENNAI: M/s. MEGHA TRADING COMPANY: Mr. Kavin / +91 94426 20726 / +91 422 4373559 / 60 / meghatradingcom@gmail.com

COCHIN: M/s. MEGHA TRADING COMPANY: Mr. Kavin / +91 94426 20726 / +91 422 4373559 / 60 / meghatradingcom@gmail.com

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DELHI: M/s. M S KLEBSTOFFE: Mr. Ashish / +91 9911121636 / ashisawat@gmail.com

DELHI: M/s. DYNAMIC POWER TOOLS: Mr. Dinesh Kumar / +91 96508 07166 / dynamicpowertools@gmail.com / dineshdynamic77@gmail.com

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HYDERABAD: M/s. PYRAMID IMPEX INTERNATIONAL: Mr. Hussain Kagalwala / +91 99894 75152 / +91 40 64595152 / +91 40 64102055
pyramidimpeex@gmail.com

INDORE: M/s. D&S ENTERPRISES: Mr. Ajay Kumar Ladha / Mr. Alak Ladha / +91 94253 11239 / +91 94250 65039 / +91 731 2532765 /
+91 731 4040800 / shreejeeh@gmail.com / shreejee2009@rediffmail.com

JAIPUR: M/s. M P ASSOCIATES - JAIPUR: Mr. Minesh Patel / Mr. Rakesh Patel +91 97252 08023 / +91 97252 08022 / +91 79 25626851
"minesh@mpassociates.co.in / purchase@mpassociates.co.in"

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MADURAI: M/s. MRI POWER TOOLS: Mr. B. Padmanabhan / +91 99447 94931 / mrpowertools@gmail.com

NAGPUR: M/s. PRANAL ENTERPRISES: Mr. Rajkumar Dharpure / +91 93731 00887 / rkdharpure@yahoo.com

PUNE: M/s. SHRI KRISHNA ENTERPRISES: Mr. Shankar Prasad / +91 81499 67968 / +91 99702 95291 / shrikrishnaenterprises.pune@gmail.com

PUNE: M/s. SHREE JEES HARDWARE: Mr. Ajay Kumar Ladha / Mr. Alak Ladha / +91 94253 11239 / +91 94250 65039 / +91 731 2532765
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The fences enable bevel cuts at any angle between 0 and 90° very quickly, precisely and variably. Set it to 45° and a mitre cut can be made on both sides of the work piece without further adjustments.

Dimensions of the flip stops are set using a measuring scale and magnifier. All fences can be positioned anywhere along the entire length of the table.

The manual clamp is the alternative to a pneumatic solution.



The manual clamp can be positioned on the sliding table and is equally easy to fix into position.

Pneumatic hold-down bars – an ideal solution for securely retaining work pieces of up to 80

mm thickness and particularly useful for work with long and thin materials such as veneers – can now be controlled separately at the rear and front position.

The edge-banding machines made by Hebrock now share the look of the Altendorf products.



The machine design of Altendorf sliding table saws will be integrated into the edge-banding machines made by Hebrock. The machine design is not just limited to appearance it can also be clearly seen in the machines' control systems.

Tilted position in-feed fence: Thanks to the extremely stiff construction style, even higher quality results can be produced.

Fluid level monitoring of the glue pot: This new improvement prevents unseen draining of the glue pot. The user will be notified if the fluid level falls below the minimum amount.

LED machine illumination: The view of the process area improves process control thanks to energy-saving LED illumination.

Multi-radius profile scraper: Two different radii (R1/R2) on the machine shorten setup time.

With the barcode scanner built into the control unit, processes can be improved in all machines and incorrect entries prevented.

Ardis saves headache of customisation

The entire about integrating IoT, Industry 4.0, MES and other new technologies in the woodworking industry can be extremely expensive because MES installations are based on heavy customisation.

Ardis has used the experience of its MES leading Optimizer solution to develop Ardis



Perform, a system for the woodworking industry MES without the need for such degree of customisation. It is flexible, standardised, web-based and affordable and adapts to the production flow.

Communication and retrieving real-time data is a key industry challenge as it ensures workers are doing the right job. Each operator needs key sequence information at each specific step in the production to avoid costly mistakes. Running back and forth to engineering due to unclear information increases the risk of missing delivery deadlines. Ardis is increasing manual operation productivity with 30% by rationalising the need to scan parts manually compared to existing MES systems.



The Ardis Perform is unique in that it ensures your way without customisation. The off-the-shelf software supports sales order based, production order based, project order based, order traveller, product based or even a combination.

Barberán's game-changing finishing

technology

Barberán, the market leader in the design and manufacture of industrial machinery for surfaces finishing, introduced some of its latest developments for wood processing at Ligna.

TrueTexture, the latest development for texture generation, which synchronises images with a 3D effect creating panels with exceptional finishes, was undoubtedly the star of the show. This new treatment concept for panels allows the creation of haptic sensations and deepness effects over boards.

Once it is applied it can be covered with a matte or glossy finish. This new system supposes a game change in terms of versatility, both in digital printing and in varnishing. Among the many applications that it can have, flooring stands out; it is specially fitted for it as a result of the abrasion and shock high-resistance treatment.

For digital printing, a printer was showcased with 4/6 colours (CMYK+ light cyan and light magenta). With increased colour gamut and a better chromatic spectrum, it improves optical resolution, smoothens the tones, colour transitions and metamerism, and optimises ink costs.

Laminating machinery was also shown, including some of the new capabilities. An indexing line featuring a gluing machine, a new cut and trimming system for the four edges of the panel and an indexing table, or a



Compact Line HG, a laminating machine for high-quality finishes that works with hot-melt glues and high-gloss foils, was showcased.

Another compact series module the Compact Line Foil, which applies glue directly onto the foil, allows edges post forming at the exit of the table.

The Inert Coat is the main bet for the varnishing department. This machine is based on the concept of a controlled atmosphere where products can be cured without particle intrusion and with the absence of oxygen, to achieve a perfect finish with the best quality in the market.

This high-performance installation includes a calender and a smoothing process (through the application and drying of a transparent foil) to create a surface with exceptional optical and mechanical properties.

Barberán displayed a bilateral wrapping machine that wraps both sides of profiles with rolled materials in a single step, simplifying the processes. Formed by two stations of Unwinder+ slot nozzle, it improves productivity and hand-in times.

It is ready for 'Industry 4.0' technology and has two cameras for the control of the production result, RFID codification and smart glasses, which allow the communication with the client's technical team.



Biesse unveils robot-controlled panel saw

Robots are playing an ever-growing role in wood manufacturing, but most of that has been in material handling connected to CNC routers. Biesse has announced a new technology at Ligna that basically replaces the beam saw operator with a robot.

The company said that the new WN6 ROS (robotically operated system) panel saw totally changes how production managers look at beam saws. Until now, an operator had to be in front of the machine, constantly moving panels, rotating strips, pressing the start button to begin every cutting cycle and most of the time, manually applying labelling and performing other operations.

The game-changer with the Selco WN6 ROS is that while the frame of a standard machine has been kept, the air tables have been replaced to ensure everything is done by the robot instead of an operator.

The process changes begin even before the materials are loaded into the saw. While many human operators struggle with sorting parts from different jobs, a robot can easily keep

them all in order and apply software-generated labelling, effectively eliminating mix-ups and errors as the parts move on to drilling, edge banding or other processes.

The system also adds consistency to the process because there is no difference in how different operators handle the work. The robot performs the operation in the exact same way today, a month from now, and a year from now.

The Selco WN6 ROS panel saw incorporates Biesse's patented Twin Pusher 2.1 for faster operation and optimizing of movements during the cutting cycle. The robotic system also eliminates the need for an operator to stop the machine and handle waste management. Trims fall into a trap and are managed automatically.

The machine is a direct response to high employment rates and the difficulty many plants are having in finding skilled workers and investing in robotics will help in lowering payroll and training costs for years to come.



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Shreepal Green Futures Pvt. Ltd., # B - 25, HSIIDC, Sector - 31, Faridabad - 121003, **Haryana** - INDIA.
Tel.: +91 80762 29237

At Cefla, surface enhancement moves into the future



1

Since the previous edition of Ligna in 2017, the company has invested in technological evolution applied to all surface enhancement processes and its vast product range has evolved to raise the bar in terms of finished product quality.

1 Cefla Smartcoater Pro Ultimate process control.

Cefla Finishing introduced Ubiquo, made of physical, virtual and digital support that sets a future-oriented service benchmark. Ubiquo, a carefully selected combination of service packs and software solutions, a step further than the basics of 'Industry 4.0'.

2 Cefla's iBotic.

Cefla showcased new equipment, new ways to ensure customers will benefit from greater efficiency, new patented technologies designed to maximise flexibility and minimise costs.

Innovations showcased at Ligna include patented savings for spray cleaning technology. This device cuts production costs through patented spray cleaning and delivers more than one benefit.

Greater cleaning potential saves on paint consumption and allows a reduction in detergent during running time. Less detergent means lower operating costs, it safeguards equipment and ensures a healthier environment.

RoboWrap by Düspohl, with its fully robotised mechanisms, allows profile changeovers to be completed in just 5 minutes, combines limited set-up and maintenance times with high output rates. Automation is one of the simplest and most effective ways to boost profits through enhanced productivity.

3D effects

The flexibility of digital printing allows an immediate and appealing response to changing trends and fashions, with high potential for customisation. Further, the J-Print TD creates positive and negative tactile effects with outstanding realism and an affordable, reliable process using MyTexture surface texturing, also performing embossing in register (EIR), and printing in 400 DPI at speeds reaching 50 metres per minute.

The latest Excimer oven now handles raised panels and achieves a deep matt finish on all



2



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3 *Cefla J-Print customized 3D surface.*

edges. Exydry-Z treats all 3 axes (X, Y and Z) and achieves superb surface resistance as well as the sought-after soft touch effect.

More flexibility, a greater degree of automation and savings, both in terms of time and costs is what the market demands. The new addition to the consolidated Smartcoater range features automated cleaning solutions, automatic monitoring and adjustment of coating parameters, an optional pneumatic floating system with four screw jacks and more, all conceived to boost efficiency and improve coating quality.

Spray coating

Elaborate 3D geometries represent a major challenge and manually programming all the moves and trajectories required to paint the object efficiently and consistently is not a simple task or a quick one.

iGiotto, when used in conjunction with the cVision 3D reading barrier, ensures time savings through coating process automation, improves the quality and consistency, thus leading to reduced lacquer consumption and lower costs.

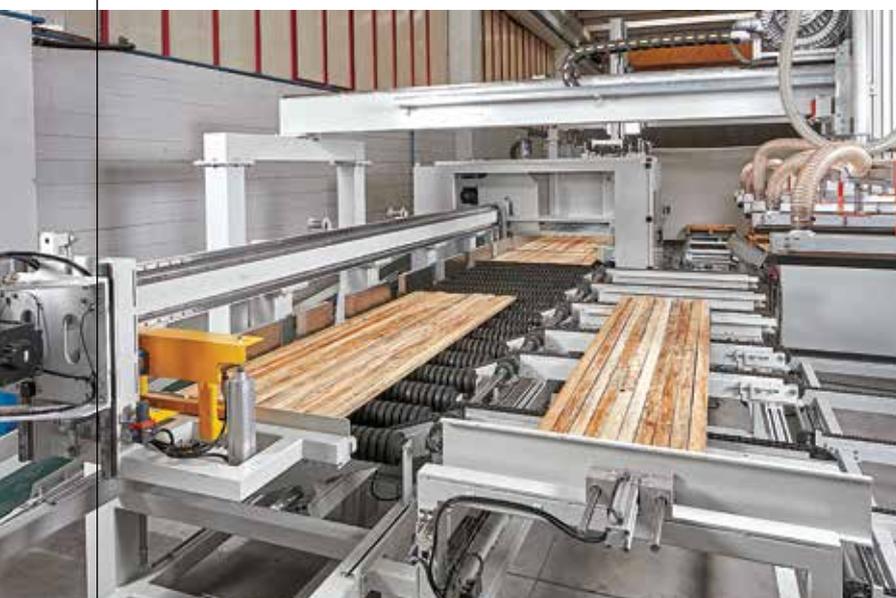
Until now, disassembling the application head was a time-consuming operation; re-aligning the components to the next edge shape or size was even longer. Built into Smartedge, the patented Edge&Go head enables continuous processing of different edges.

Edge shape changeovers using Edge&Go require no more than 15 seconds; for example from a straight edge with a 3 mm radius to a J-Pull handle edge.

Ubiquo has been created to enhance profits with a tailored mix of service packs and software solutions, expert consultancy and digital tools. It addresses major issues such as efficiency, reliability, competence and predictability with an aim of answering a real business need with a concrete benefit.

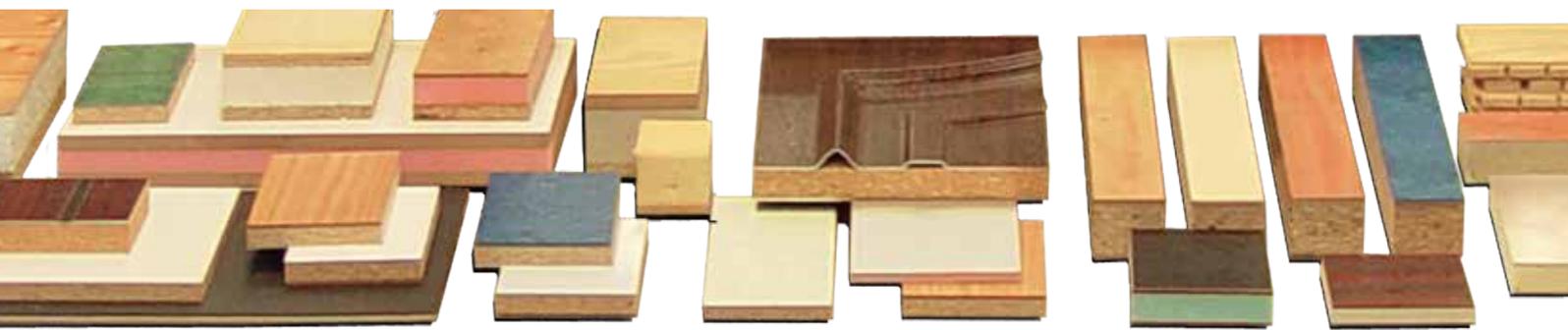
It offers more than remote assistance to solve an unforeseen breakdown, data analysis to indicate a better way of optimising lacquer consumption, software tools enabling production line simulation, VR visors to help train staff. It inverts the point of view to look at efficiency, competitiveness and profitability from a customer's point of view.

Dalso has innovations in automation



With over thirty years of experience, Dalso seeks specific solutions for continuous production growth with advanced technical and technological solutions.

The woodworking and wood by-product sector offers continuously lower profits and, at the same time, forces companies to be increasingly more "creative" which does not only mean different products, but also the ability to innovatively manage new ideas, relations, aware that technology is not only steel and components, motors and wires, but the expression of the passions, skills and efforts of the people that conceive, design, build, market and use them.



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At Ligna the complete line of conveyors, loaders and unloaders were on display with a robot equipped to manage the process. The part picked up by a large- sized robot that quickly loads it directly on a chain buffer.

From here, the part is selected and directly fed on an operating machine by a special feed system. At output, this processed part will be automatically unloaded and repositioned for subsequent operations directly by the same starting robot.

Dalso automation is a technique applied to many sectors, from window and door frames to panelling, from plywood to wood flooring to solid wood furnishings.

It is designed to meet different needs-from a small shop that processes a few thousand wooden profiles a month, to a large industry that processes the same quantity in just one hour, with maximum flexibility and full integration in a complex production line.



Screening on a higher level

Building on its long experience with oscillating screens for particle board production, Dieffenbacher has developed the new HCOS (high-capacity oscillating screen) for more throughput and with less investment.

The new screen was on display at Ligna 2019. The HCOS is developed specifically for producing high volumes. It is available in three sizes with the largest version enabling throughput of 260 cubic metres per hour.

HCOS can be equipped with the new mechanical inclination change (MIC) feature. By adjusting the screen's inclination from 8° to 6° or 10°, material flow can be decreased or increased. This makes capacities of up to 325 cubic metres per hour possible.

With lightweight frames made of edged laser-cut profiles and enclosure panels and doors made of light sandwich panels with high stiffness, the HCOS weighs just 60% of comparable screens. The lightweight construction ensures a long frame life and enables hanging installation of the screen, eliminating the need for dedicated foundation blocks.

Meeting Atex safety standards, the HCOS is ready for indoor installation. All new HCOS feature integrated flameless explosion relief (IFER). In the event of a particle explosion in one of the four screen decks, the IFER ensures flameless pressure relief. All neighboring decks are perfectly protected from explosion hazard.

The HCOS is configured for four or five fractions. The screen nets for the different fractions are self-cleaning and quickly changeable for minimum maintenance.

1 *Dieffenbacher's new high-capacity oscillating screen system for particle board production.*

freud

LSB X - Saw blades

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- **Super square tooth** design that guarantees more life and great precision.
- Saw blades for panel sizing; **30% longer lifetime.**

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Technologies of tomorrow from Felder



1 CNC machining with augmented reality glasses live at Felder Group at Ligna.

The Felder Group is one of the leading worldwide suppliers of woodworking machines. Its Format-4 machines were on display and undertook live demonstrations with augmented reality glasses at Ligna. More than 100 machines with innovative technologies were presented by competent experts, for perfect woodworking.

Machines display included new beam saws and panel saws, such as the Format-4 Kappa 590, the sliding table saw for angle cuts in all positions with the double pivoting device of 92°.

1

Innovative CNC machines and productivity technologies – console, extraction and workpiece positioning with augmented reality glasses were showcased. The new CNC machining centre Profit H80 – the answer to smart furniture production – cutting, drilling, milling, polishing was also on display.

Software solutions, revolutionary different, profitable for all sizes of businesses, were also demonstrated.

Edge banders for all levels of investment, in every performance class, advantEdge, affordable zero-joint technology for all businesses and material handling and warehouse technologies that increase productivity were introduced at the expo.

Freud's spiral cutters grab attention



Freud's solid carbide spiral cutters, with all their special features, attracted attention at Ligna. These have superior cutting performance, tight mechanical tolerances, special flute design and best-in-class manufacturing machines ensure the highest cutting performance, with reduced eccentricity and no vibrations.

The range delivers a perfect finishing, as a result of the newly developed helix design and geometries. The exclusive relief angle of

Freud solid spiral cutters lowers the pressure on the cutting edge and reduces vibrations at high feed rate. The improved chip removal guarantees impeccable results.

The new micro-grain carbide formula (H05MG), specifically engineered to achieve a high level of hardness and tenacity, guarantees the greatest resistance to wear and impact. Freud spiral cutters are, in fact, up to two times more resistant to heat and abrasion than competition.

Freud manufactures the premium titanium cobalt carbide (TiCo) for its unique resistance to resin and glue corrosion that extends the tool life by up to 50% longer.

These can be used on all CNC routers for nesting, sizing, rabbeting, grooving, and dividing cuts of raw material.

Freud's spoil board surfacing cutters, NC12, provide the greatest cutting performance and vibration-free cuts, on accounts of tight body mechanical tolerances, tool dynamic balancing and extremely precise knives. ▶

The new range of NC12 cutters delivers perfect results, thanks to the shear angle positioning of the knives. They are used for surfacing/skimming and rabbeting on wood and derivate panels.

New carbide rounded razors find application in spiral or helical planer heads for wood and its derivatives and gives flawless finishing in high demanding applications.

The range delivers a perfect finishing, as a result of tight tolerances, bore centring and thickness. Premium roughness is ensured by state-of-the-art grinding technology.

Fine-grain Carbide (K01S) is specifically formulated to achieve a high level of hardness and tenacity. The formula guarantees the greatest resistance to wear and impact and ensures longer life.

Besides, the entire range of Freud products includes circular saw blades (the biggest manufacturer of high quality saw blades worldwide). In addition, products include cutter heads and brazed cutters, knives, spare parts and accessories, and drilling, routing & CNC tools.

The adhesives manufacturer from Detmold (Germany) again impressed customers and prospects alike with its latest and innovative product highlights at this year's leading global trade fairs, Ligna and Interzum.

The spotlight was on non-hazardous PUR hot-melt adhesives, a fully certified product family for load-bearing glulam, as well as on new dispersion adhesives with low formaldehyde emissions.

The adhesives specialist displayed a comprehensive portfolio of monomer-reduced and therefore non-hazardous reactive polyurethane (PUR) hot-melts for the wood and furniture industry from the Jowatherm-Reaktant MR series, once more demonstrating the enterprise's innovative capacity and competence in PUR technology.

The special highlight of the non-hazardous product series presented by Jowat at the trade fair was an unfilled edge banding adhesive for superior applications, which facilitates colourless and virtually invisible bond lines.

Reactive PUR hot-melts were also in the spotlight at Interzum, with focus on the significant process and efficiency benefits compared to liquid adhesive systems in the manufacture of mattresses and upholstered furniture.

The new Jowapur product family for load-bearing glulam also proved a major success. For the first time, the adhesives experts from Detmold presented an expanded portfolio of certified 1-component PUR pre-polymer adhesives, with different product versions for a wide range of applications in the manufacturing of load-bearing glulam.

The previously unachieved assembly-pressing time ratio of up to 1:1 and flexible assembly times between 10 and 60 minutes, in particular, sparked a lot of interest among

Jowat unveils new adhesives for glulam

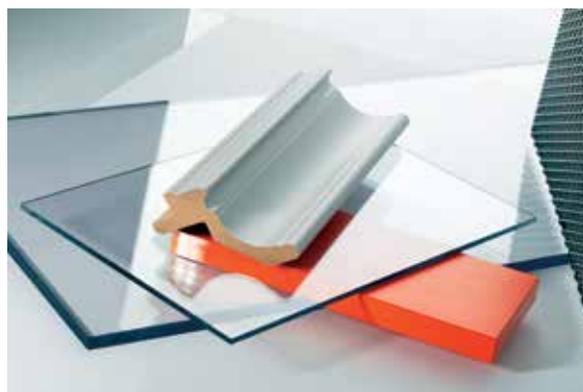
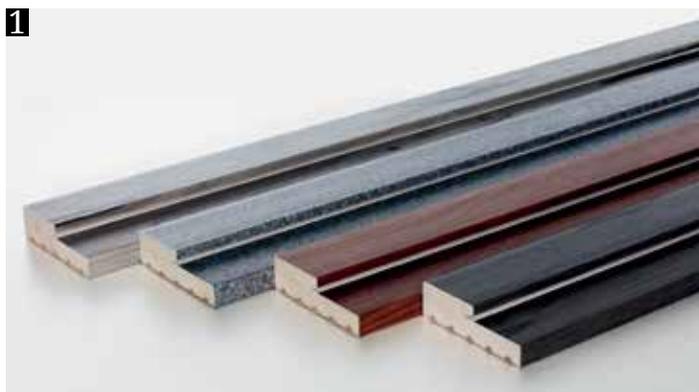


customers with industrial manufacturing processes in which short cycle times and fast throughput speeds are essential.

Another technological first at Ligna were the dispersion adhesives from the Jowacoll series. Due to an optimised manufacturing process, Jowat was able to reduce the formaldehyde content in the Jowacoll dispersions by up to 80% and at the same time maintain the good water and heat resistance of the adhesives.

As a result, formaldehyde emissions from Jowat's reactive D3 dispersions are now below the limits defined in different regulations and in some cases even close to the detection limit, and therefore support the production of low-emission products.

1 Jowat has achieved assembly-pressing time ratio of up to 1:1, which has sparked a lot of interest among customers with industrial manufacturing processes.



Kleiberit goes safe with micro-emission PUR

1 Solutions for profile wrapping and edge banding at the Kleiberit stall focussed on micro-emission PUR adhesive technology.

Kleiberit exhibited a comprehensive range of new developments and innovations at Ligna this year, once again reiterating its complete competence in polyurethane-based adhesives and coatings.

The main topics were new fields of application in surface finishing with the Kleiberit HotCoating technology, for both indoor and outdoor use, and high gloss lamination using the flat lamination process with PUR hot-melt adhesives.

In addition, Kleiberit presented an extensive range of ME (micro-emission) PUR adhesives in various theme-based displays. Interesting and technically challenging application solutions were in focus, including for profile wrapping, edge banding, flat lamination, and Complete-Line process.

Three lines were running continuously for visitors to experience surface finishing under real conditions. A line for finishing digitally printed roll-material in the HotCoating process was in use.

2 The company demonstrated various solutions in surface finishing and flat lamination.

In the future, it will be possible to coat materials with widths of up to 1.5 metres, which gives users completely new possibilities in high quality wrapping of components, such as doors.

On a Compact-Line, high quality transparent high gloss films was bonded with a PUR hot-melt developed specifically for the process, and the classic HotCoating line produced both high-gloss and super-matte finishes, which was embossed for structure in another process.



This impressive technology is a true highlight in surface finishing, as the flexible HotCoating functional layer doesn't crack like when using classic lacquers.

Under the title "The Future is Now", hot-melt adhesives for various applications were offered, featuring highest bonding properties, combined with safe and easy handling, as well environment-friendliness. These solutions were presented in theme-based displays, such as flat lamination, profile wrapping and edge banding. (www.kleiberit.com).



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Innovation never stops at Giardina



1

Giardina Group is one of the very first pioneers of Excimer technology—a process in which they have been doing research for several years. The company demonstrated this technology that is being used at many of the world’s leading paint manufacturers, at Ligna.

1 The Excimer industrial oven (Top) and Giardina’s Dualtech 501 drier (Bottom).

Two roller machines – one for finishes with grammage up to 5/7 gm per square metre and the other that can reach 20-30 gm per square metre. The panels painted are mattified with ‘Gst Zero Gloss’ in an Excimer oven and finally reticulated with ‘Gst UV’ technology, a brand-new solution for the mattifying of 3D spray-painted surfaces using UV radiation, for different finishes.

In recent years, matte finishes make the final result sensitive to scratches, abrasion and impacts. Excimer technology solves the long-standing problem: thanks to its special characteristics and the use of special lamps that act in a nitrogen-rich environment, the

surface structure can be reticulated to obtain a “zero gloss”, resistant surface, without any damage to the support.

The advantages include an ultra-matte (1.5-5 gloss without using mattifying agents) and “anti-fingerprint” surface, an increase in surface hardness, chemical and abrasion resistance, an extreme “softness” to the touch, a lower chance of yellowing over time, and the possibility of obtaining surfaces with a regular and uniform 3D effect.

The fields of application include furniture to kitchens, wooden floors, and also plastics, composite materials, metal, glass.

Hexion’s suite of thermoset resins

Hexion, the US-based leader in thermoset resins, displayed its waste saving adhesive system that has completed ANSI structural certifications for both glue laminated beams and cross-laminated timber.

At Ligna, it said the versatile EcoBind adhesives for structural engineered wood products recently completed all independent laboratory testing required by the

American National Standards Institute (ANSI).

The EcoBind 6500 system complies with the International Code Council’s (ICC) Tall Wood Code changes adopted for the 2021 version of the International Building Code.

The EcoBind adhesive system employs separate application technology to maximise adhesive utilisation. The layout of all certification test samples was completed with the adhesive components separately applied to each wood substrate to duplicate the manufacturing process.

In building and construction applications, the adhesive enhances the structure of a home with greater fire resistance, which adds precious seconds for occupants to evacuate or fire fighters to rescue or extinguish the fire.



**WM**

HR500

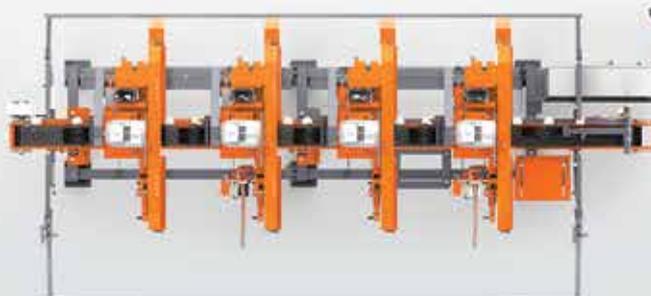
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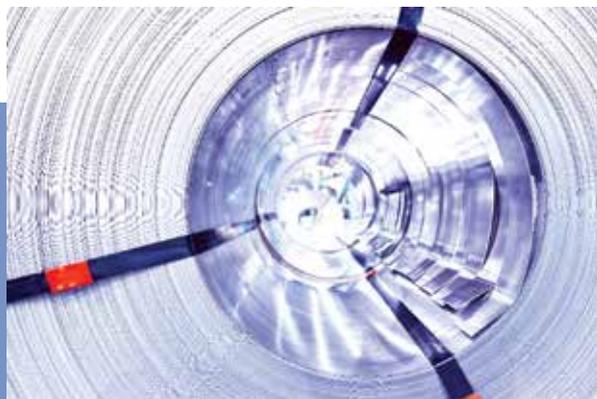


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Hugo Vogelsang showcases direct steel strip printing



Hugo Vogelsang, one of the world's leading suppliers of sophisticated steel strip grades, presented its latest cold-rolled strip solutions with direct printing capabilities at Ligna 2019.

There has been a rising interest in the market for quality suppliers of industrial saws made of steel strip with printed labelling and to meet this market trend, the company has been working on a solution that enables direct printing for saw making.

By using an industrial printer, single-colour direct printing of steel strips is possible. The current colour standard is black, but alternative colours can also be offered at

customers' request. The ink used is wipe-proof and oil-resistant.

Printed images from commercially available inkjet printers can be technically implemented: true type fonts, Unicode support, alphanumeric texts, barcodes, 2D codes, data matrix codes or logos, as well as variable data such as date, time, counters, shift codes and database.

Using the high-resolution HP thermal inkjet printer, information can be printed on non-oiled steel. A maximum print width of 12.7 mm is possible per print head within a resolution of up to 600 DPI. Up to four print heads can be cascaded, allowing labels with a writing height of 50.8 mm.



Imos expands digital range of functions

Imos AG has achieved its goal of networking suppliers, manufacturers and end customers. The ecosystem iX Interio reduces the communication and transaction processes between the individual business areas and locations.

iX Interio is the result of developing autonomous software applications to integrated solutions that fulfill the requirements of digitalization.

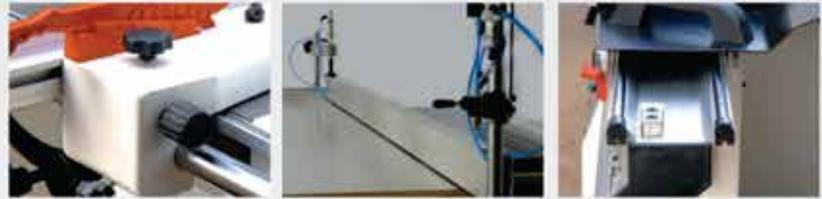
In addition to the development of functions, developers have been focusing the

constructive combination of technologies. Web-based sales solutions communicate directly at the data level with CAD-based design applications and *vice versa*. Different applications communicate via web services and allow different editing options for the work results.

The web-based application iX NET has been extended by numerous functions. Planning speed, usability and interoperability were at the top of the list of requirements. The photo-realistic presentation of the planning results

1 iX Net makes easy planning on the tablet a reality.

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was improved using new material, lighting and rendering techniques.

The 3D planning results can also be uploaded into social networks at any time and viewed interactively by anyone. Room creation in iX Plan has also gained in design comfort.

All movable furniture components such as doors, flaps and drawers can be opened and closed as in the real world and shows both the interior of the furniture and the kinematics of the components in animated form.

VR is now not only a presentation tool for finished planning results but can also be used in the design phase in direct dialogue with the customer. This can be done either together in the showroom or online at separate locations.

Planning results from iX Plan, iX CAD or iX Net can be shared directly via VR and experienced virtually.

There are also new features in iX CAM. Special milling strategies for solid wood processing have been developed and the display on the component label has been improved. The control of the edge banding unit on CNC machines has been completely revised so that these machines can be supplied with the necessary data much more comfortably.

An adequate tool, embedded in the iX Organizer, allows the recording of desired building structures such as floor, area, room or workplace. The individual iX CAD planning and part orders can be assigned to this structure.

Sophisticated solutions from IMA Schelling



1 *The first flexible high-performance CombiCut cutting centre was put into service successfully at a German kitchen manufacturer in the summer of 2018*

The IMA Schelling Group is a reliable provider of solutions for sophisticated and innovative wood processing plants and a leading supplier of batch-size-1 work cells for a digital, fully automated networked production.

In close cooperation its two sister companies, IMA Klessmann and Schelling Anlagenbau, it develops and manufactures intelligent high-end solutions.

Two years ago, the IMA Schelling Group presented the first common product: the flexible high-performance CombiCut cutting centre at Ligna 2017. This pilot system has been in service successfully at a German kitchen manufacturer since then.

The customer reached the project targets and

is very satisfied with the innovative technology and another CombiCut is soon being delivered. The trend towards fully automatic work cell solutions continues and there is a great need for flexibly usable robot solutions and intelligent automation concepts.

The young robotics and plant control portfolios are also into this and for some time now the number of robots per job has been increasing gradually, whereas so far enquiries for robots have only been processed rarely. Also, the robotic solutions themselves are getting more and more complex and powerful.

The IPC.Net plant control system, which was developed by the group, is becoming increasingly popular with customers. Its main application is individualized batch-size-1 production. But the benefits of intuitive operation and part tracking can also be seen in batch production and small automation applications.



2 *The robotics engineering division develops flexibly usable robot solutions for furniture production.*

nova si 400

Panel Saw

- 10 years warranty on sliding table.
- Circular saw with 45° tilting.
- Scoring unit adjustment by memory pins.



gabbiani p 75

Beam Saw

- Selectable air blowing table: an essential tool.
- Saw carriage with independent raise of the blades.
- Increasing of productivity up to 30%.



minimax me 20

Edge bander

- Simple and intuitive.
- Ideal edge application.
- Quality finishing and versatility.



minimax me 40 t

Edge bander

- Premilling.
- Partial corner rounding.
- scraping.



olimpic k 360 r

Edge bander

- 11 m/min panel feed speed.
- "AUTOSET" pneumatic positions of units.
- Pre-milling, corner rounding, scraping units.



stefani kd

Edge bander

- 10-20 m/min panel feed speed.
- Solid wood up to 12 mm thickness.
- "SGP" glue pot for EVA or PU glue.



stefani xd

Edge bander

- High productivity with corner rounding up to 30 m/min.
- The use of EVA and Polyurethane glue is made possible.
- Zero glue line possible with "AirFusion" technology.



morbidei m100

CNC machining centre

- PRO-SPACE safety systems, it requires less floor space.
- JQX : 5-axis direct-driven spindle head.
- 80% time saving in drilling cycles.



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CNC drilling centre

- +60% of Productivity: Two Drilling Heads.
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- Professional, massive and compact.
- Cast iron thicknessing table lifts on 4 spindles.



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Universal combination machine

- 5 Function Combination Machine
- Incredible cutting of very thick solid wood and panels.
- Professional and very sturdy.



minimax tw 45 c

Spindle moulder

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- Cutting height of 100 mm.
- The maximum tool diameter 210 mm.



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Throughfeed multi spindle moulder

- More productivity and improved finishing.
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dmc sd 60

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- Lacquer reclaiming unit.





Wood-Mizer ratchets up its reputation

At Ligna 2019, Wood-Mizer strengthened its reputation as a leading manufacturer of machines for both primary and secondary wood processing that gives every user the opportunity to find new niche markets while saving valuable wood and energy.

For the first time a wide range of planer/moulders were presented dedicated to small-to-medium workshops that also allows saw millers to add a moulding operation for converting boards into final wood products.

The Wood-Mizer planer/ moulder range demonstrated included the MP160 planer and thicknesser that both planes and surfaces boards; the MP200 planer/moulder capable to plane and mould timber on two sides in a single pass; the versatile MP260 and MP360 four-sided planer/ moulders, the MF130 multifunctional vertical spindle moulder with a tilting range of 270 degrees and the MS300 precision table saw with a large rip capacity and 45-degree blade tilt angle.

Alongside its well-known professional

sawmills Wood-Mizer presented the new 90-cm log diameter capacity, LT15 wide sawmill and the entry-level LX50 for saw millers who want to start business with minimal investment.

Several years ago, Wood-Mizer introduced the new Titan line by producing industrial high-volume sawmilling equipment. This year the line was presented by three units: the WB 2000 wideband sawmill, which features heavy-duty construction, low maintenance requirements, and efficient operation; the EA3000 optimizing board edger, whose sensors allow the edger to scan boards and make the most out of slabs of varying widths; and a high capacity EG800 multi-rip edger, a robust machine that edges material up to 100 mm thick.

Wood-Mizer's line of wood cutting blades and knives which includes multi-rip, rip saw, crosscut and frame saw blades, planing and moulding knives as well as narrowband and wideband band saw blades were also presented.

Wood Testing

New laboratory set up at Jaipur



Evaluation and Tests for Woodware

Structural Strength and Durability

Moisture Content

Drop Impact

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Tension, Compression Force / Durability

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To get details on other tests relevant to trade and export of woodware, contact:

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Turning Wood of Dreams...



Homag relies on right solutions

Homag showcased a wide range of solutions for high-performance furniture production at high-speed, including two new, integrated workshop concepts, specially designed for carpenters and joiners with easy digital assistants and features and a fully networked, automated and completely autonomous concept for SMEs.

This year's new products were presented on an extra-large solid wood platform – complemented by everything to do with automation solutions for pre-fabricated housing construction.

Mr Pekka Paasivaara, CEO of the Company, also confirmed the high level of interest in the sector for digitalization and solutions for the journey toward Industry 4.0.

He noted, “We have made huge strides in digital woodworking. The level of interest in modern technology remains high all around the world. It is simply amazing to meet so many customers from all over the globe, who are focused on specific investment projects. The new solutions appeal to small companies just as much as industrial processors.”

The level of interest in modern technology remains high all around the world. The new solutions appeal to small companies just as much as industrial processors.

Of those that visited the HOMAG stand, around 61% were international visitors. Austria, Italy and Switzerland accounted for the highest visitor numbers. Numerous groups of visitors from countries such as Spain, France, Poland, Australia and New Zealand, the USA and Asia – most notably India – also called in.





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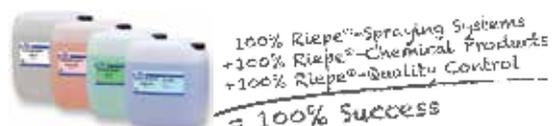


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20% cost-cutting with Leitz's new ProfilCut



At Ligna this year Leitz presented the youngest member of its successful ProfilCut family. With the new, resharpenable ProfilCut Q Plus system, Leitz experts are closing an absolute market gap and enabling companies to reduce their machining costs by up to 20%.

The new system is available in the basic version as ProfilCut Q Plus. For companies with high production volumes, the Premium version is available, especially for high-speed machining.

If you want to produce profiles in window, door or strip production in the shortest possible time and at minimum processing

costs, you have to optimise your processes in order to achieve maximum economic success in the end. Highly developed and extremely efficient production plants are the rule in such scenarios on the manufacturer side.

However, it is rarely the machine alone that is responsible for processing the material and adhering to the quality specifications. Ultimately, it is the tool system used that must fully meet the machine performance and high quality requirements in order to achieve the perfect result.

The new ProfilCut Q Plus is particularly efficient in terms of direct tooling costs. With six performance times per profile knife, the tool system contributes to cost reductions of up to 20%.

The new system also proves its efficiency in that its ease of operation above all saves time. The low setting times, for example, can be explained above all by the automatic knife positioning. The knife change can also be carried out in the assembled tool set, which also shortens set-up times.

In combination with a constant diameter and profile after the sharpening process and the reduction of the scrap and rework rate, considerable savings are possible.

The new system makes the ProfilCut Q system series a true universal miracle for all types of profile processing in solid wood, wood derived materials and plastics. The tools from the Leitz range are combined according to requirements and applications in order to provide the most efficient solution for the user.

The Leitz Group is the worldwide leading manufacturer of tools for industrial processing of wood, wood derived materials, plastics, compound materials and non-ferrous metals.

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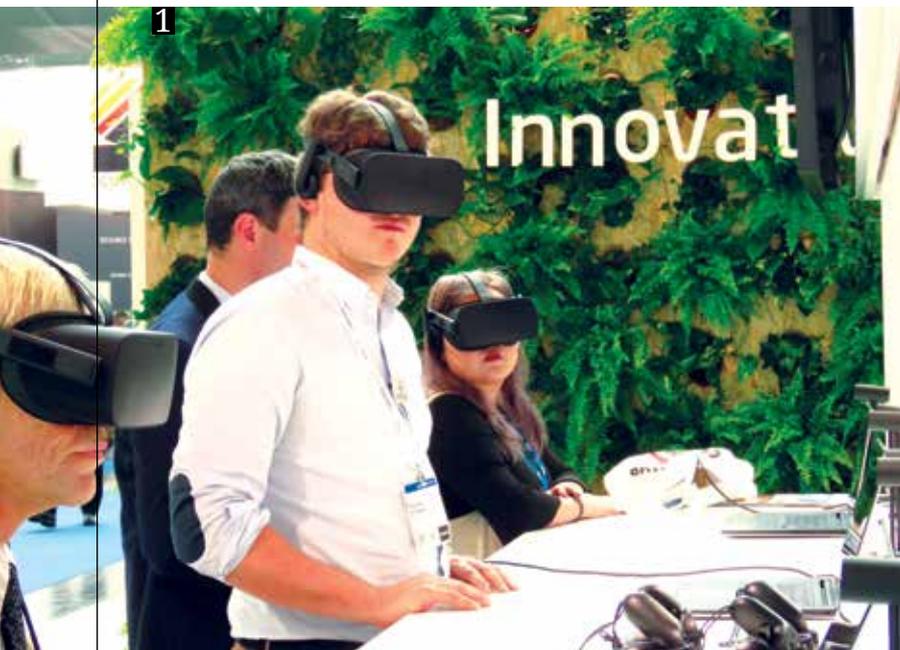
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Siempelkamp benchmarks for plant competence



1 Visitors experienced how top quality can be combined with a simultaneous reduction in production costs.

Siempelkamp is a leading system supplier of integrated wood-based panel plants. The company prides itself on not only selling machines, but also integrated, customer-specific solutions for plants and processes. Current requirements such as the resource-saving use of raw materials, energy-efficient technologies and the use of annual plants are part of this concept.

At Ligna 2019, it focused on the live and virtual presentation of the product range. The Experience Room, viewers to discover the topic on interactive screens, in six core themes.

2 Many of the company's products illustrate how resource efficiency is becoming a strategic factor in the engineered wood industry.

Its unique engineering capabilities bring know-how and overall plant competence to the point - from planning, project planning and financing through the core components of a wood-based materials plant to innovative new technologies and services.

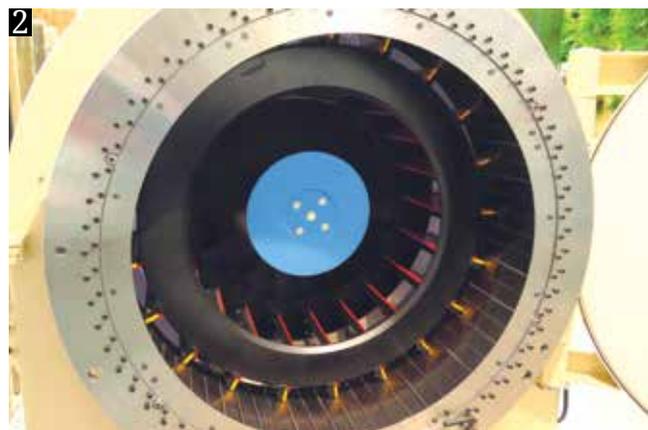
Green technology is dedicated to research and development on the use of annual plants in the wood-based panel industry. Here, for example, the production of fiberboards from rice straw is regarded as a benchmark and pioneer in the market.

Saving resources with modern forming concepts with the “Eco” concepts ContiRoll EcoDrive, EcoFormer, Ecoresinator, EcoPulser and EcoSifter, among others illustrate how resource efficiency is becoming a strategic factor in the engineered wood industry.

Customized solutions for specific needs is required as production increases or changes, board diversity, climate, available resources and local markets form the highly differentiable coordinates for plants, which can be tailored to individual market requirements. This field of competence also closes the circle on “Resource Efficiency” - this is where local differentiation is particularly noticeable, e.g. in the area of raw materials and adhesives.

Panel handling illustrates high-performance finishing lines, which keeps pace with the high production speeds of the ContiRoll Generation 9. Siempelkamp supplies all components from the trimming station to the fully automated panel storage system from a single source.

Intelligent Production presents networked and intelligent systems for all aspects of the wood-based panel plant - from adaptive, self-learning production control and mechatronic system components to machine monitoring and predictive maintenance.



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Boere Machinefabriek wants representation in India



Boere Machinefabriek BV, a specialist in delivering custom-made quality wide belt sanding machines from the Netherlands, is looking for an India distributor. It has been manufacturing customised machines for more than 75 years.

Customers see Boere as a leading company when talking about the perfect sanding solution. Whether it concerns calibrating of solid wood or finishing of thin veneer, Boere understands the customers' wishes and translates them into detail into perfectly manufactured machines.

This not only goes for the processing of wood, but certainly also for non-wood materials such as plastics, composite materials, insulation, imitation teak decks, HPL, rubber, fibre cement and solid surface. Plastics, composite materials and solid surface require in general intensive machining.

These materials can be found, among others, in the automotive, facade, yacht building and aerospace industries. These very industries require very high quality standards to their products and expect from Boere's machines that they meet these quality standards as well.

A very good example is Boere's wide belt sanding machine, Sandrite. It was originally only meant for sanding of solid wood, but has now been further engineered for multi-functional purposes. It is apt for calibrating by using its two contact rollers. Even a texturing brush can be integrated in the machine so that a structuration also can be done with just one machine.

Boere also delivers structuration or texturing machines, Select X-Line. Solid wooden and veneered panels can be worked cross the wood grain and textured either separately or in just one pass. In this way the wood structure and its character will show up optimally.

For further information, visit www.boere.nl. You may also write to Ms Joan Boere or Mr Peter van den Berg at jboere@boere.nl.

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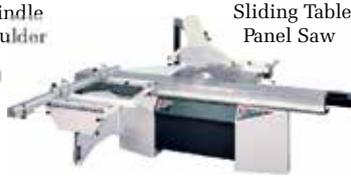
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When panels are the new fitting!

Flexibility and functionality defined the exhibits, and workshops focussed on new concepts in living spaces at Interzum (Cologne, Germany) this year, reports **Dhananjay Sardeshpande**

A German start-up, Ambigence, presented a completely new product category at this year's Interzum. It starts from a simple principle – instead of seeing the furniture panel and fittings as two separate components, they are conceived as a single unit.

With its motto, 'The panel is the new fitting', the company offered a novel system of furniture elements in which the door fittings (manufactured by Hettich) completely disappear into the side walls of the modules.

"We no longer consider furniture side elements and fittings as two separate components, but rather as one unit," said Mr Norbert Poppenborg, Head of Marketing and Business Development at Ambigence.

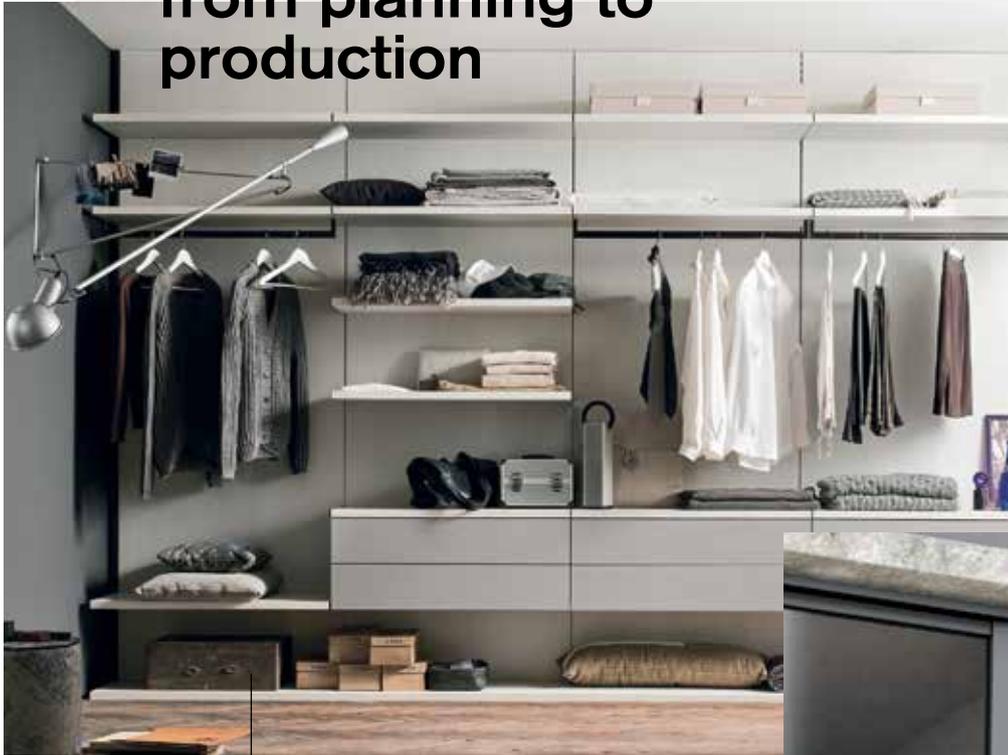
He explained how the company sees this as "the perfect fusion of design and technology, which makes it possible to rethink furniture while also opening up new fields of innovation and business." The innovative integration technique allows for the creation of purist furniture with flawless surfaces.

Mini components

Many exhibitors at Interzum 2019 presented systems, fittings and lighting solutions that serve as flexible design elements for a holistic home architecture. 'Intentek', the wireless ▶



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Vertical rack



Profiles for doors



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charging surface from the Formica Group also does away with visible technology: all that can be seen is a beautiful, unbroken surface finish. Intetek is a laminate with integrated charging technology, which is incorporated into the coating surface.

This allows mobile phones, tablets and other mobile devices to be charged as safely and reliably as with standard cables. The 5x5-cm charging zone can be accommodated within any of Formica's single-colour laminates. The arrangement and number of zones are custom-designed for each project.

Increasing flexibility and multi-functionality in furniture is going hand in hand with rising standards for technical solutions. Austrian manufacturer Grass presented a world first at the event – the thinnest and most efficient flap fitting that the company has ever developed.

Kessebohmer also presented a new flap fitting that is significantly different from the previous standard solutions on the market in its dimensions, design and functions. A profile in a minimalist design and various heights is the key feature of the multifunctional drawer concept by Italian exhibitor Salice, which won the Interzum award.

Another example was Schuco's 'Open Style' system which allows spaces to be flexibly joined or subdivided in line with requirements and the current living situation. Vauth-Sagel, the storage specialist, premiered solutions for all areas of the home. Hettich presented multi-functional new products for different living situations.

Pure surfaces

The material 'Fenix NTM', from the Italian company Arpa, produces extremely tough

surfaces with a velvety soft feel in a matt colour palette. The application of a nano-coating containing acrylic resin protects them from fingerprints or scratches; superficial micro scratches can even be repaired with the application of heat!

Shimmering reflections of light are the distinguishing features of 'Kristall Metallic', a hard-wearing, high-gloss surface containing acrylic glass from the furniture parts supplier, Niemann. The material's glossy properties are provided by evenly distributed metallic pigments. The composite material consists of a wood-based substrate with a coating of acrylic glass, making it break-proof and abrasion-resistant.

In order to create metallic 3D effects on furniture, Manetti Design from Italy has developed hot-stamping foils for panels, boards and profiles made from PVC, wood or MDF. The surfaces are resistant to chemical and mechanical influences and can be used both indoors and outdoors.

The range from Alpi Wood includes real wood veneer collections, which have been crafted by internationally renowned designers to emphasise the beauty of the material and its surfaces. Numerous stands at Interzum also presented laminates whose wood-based finishes have an incredibly realistic look and feel, such as those exhibited by Schattdecor.

German manufacturer Homapal showcased the deceptively realistic-looking marble finishes on its 'Aquaris SpaSystem', which is very quick to install. The panels are 100% waterproof as they are made of closed-cell polyurethane foam with HPL coating on both sides.

Apart from visitors from Germany, the most strongly represented European nations were Italy, France, Spain, Poland, the Netherlands and the United Kingdom. Significant increases were seen in visitors from Asia (+22%), with particularly strong growth from China. The next Interzum will take place from 4 to 7 May, 2021, in Cologne.



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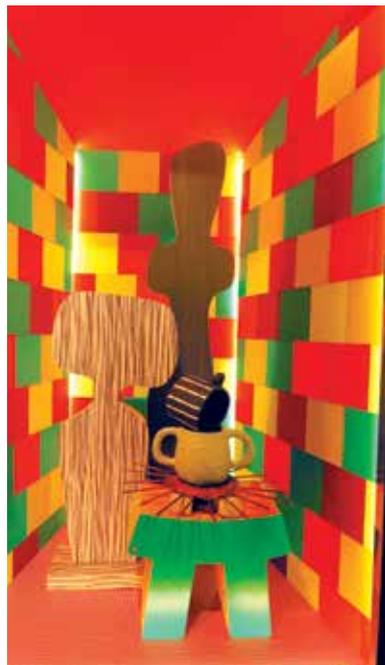


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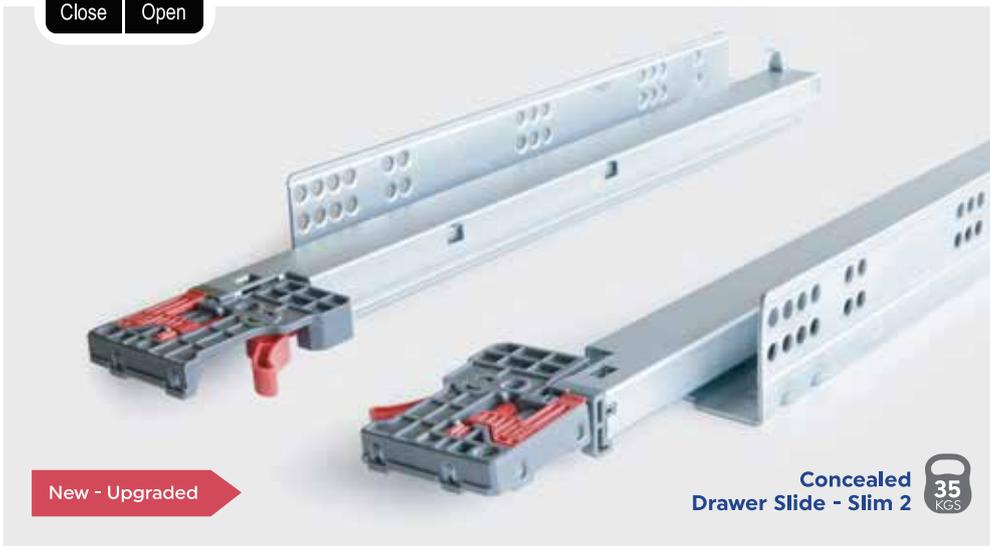
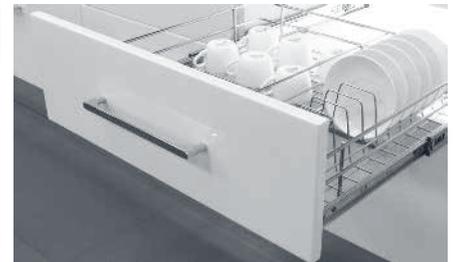
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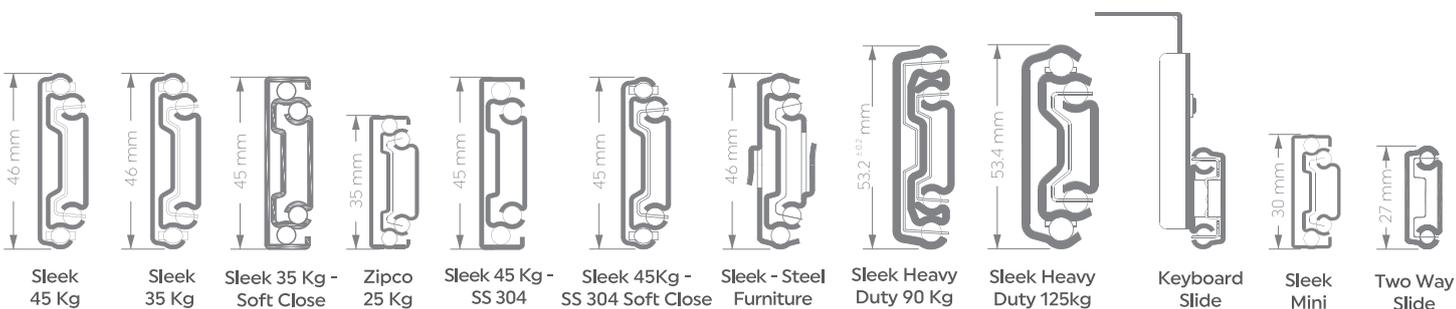
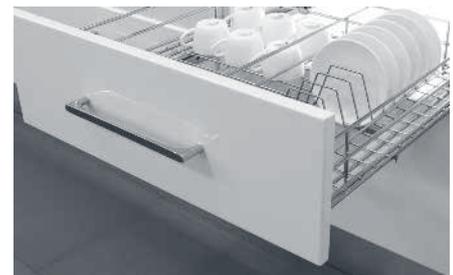
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Throwing the spotlight on American red oak



The American Hardwood Export Council (AHEC), the leading international trade association for the American hardwood industry, threw the spotlight on American red oak and showcased its innovative approach to hardwood communications at Interzum 2019.

The two exciting new initiatives on show were the Blushing Bar (see section 'Design & Finishing') that uses calligraphy ink to dye the large vessels of red oak, and Rubra, a new furniture collection designed by Sebastian Cox.

The American presence at Europe's premier furniture production and interior design exhibition was at its most high profile since the 1990s. One factor in this re-energized interest in Interzum is the dip in demand from America's biggest hardwood market, China. AHEC hosted two twin pavilions with a record number of 27 exhibitors.

"Red oak is not just America's most abundant hardwood, and so its most sustainable, it's hugely versatile with an appealing, wonderfully warm aesthetic. However, while it's very popular in other markets, it has been

less utilised in Europe," said Mr David Venables, AHEC's European Director.

To highlight red oak's technical performance and aesthetic, AHEC commissioned Sebastian to produce furniture for its stand at the show. The result was the Rubra collection; a long bar-height table with stools that can be ingeniously stored underneath.

Instead of it being heavy and chunky, Cox designed the range to be rectilinear, light and elegant. It was also nestable and designed for batch production. He said, "It was the perfect material – the strength-to-weight ratio meant we could make the proportions of the pieces very elegant. We also used a raw lightly white pigmented oil finish so it's near to natural as possible."

The latest edition of its Seneca Creek-produced risk assessment study, a uniquely wide-ranging analysis of the risk of illegal wood entering the US hardwood supply chain, was also briefly discussed at the show.

AHEC is also working with Houtlander later this year in Johannesburg, which is one of South Africa's newest, yet most successful furniture designer. Having picked up the award for the 'Most Beautiful Object in South Africa' this year for their American white oak Interdependence-II bench, the company is now keen to explore the development of its range to include red oak, both natural and thermally-modified. (www.americanhardwood.org).

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30 x 12 x 2.5 x 35°
14.6 x 14.6 x 2.5 x 30°



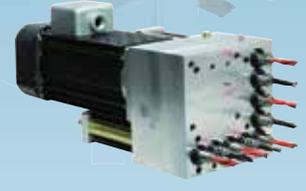
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WD315	20-122mm
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Cleaf showcases C-House at Interzum



Cleaf, an Italian company producing innovative surfaces and solutions for the furniture and interior design industries, showcased C-House, to highlight the research that has been done on its innovative surfaces and their applications.

The stand highlighted 12 textures on the backlit walls to emphasise the multiple applications, and four bi-facial displays with possible combinations. On display was also a collection of faced panels, laminates and ABS edges to coat furniture and interiors shown on vertical and horizontal planes or curved support.

What is striking in Poro Noce is the texture that reproduces the wood of carbonised trees

of walnut, a tree considered a symbol of fertility, whose presence of is found in the excavations of Pompei. The pores are spread in a diffused way and are easily recognizable to the naked eye. It's available as faced panel and ABS edge.

Also on show was Mosaico, which won the Interzum award for intelligent material and design 2019. The texture is a composition of square tiles whose irregular appearance is given by different levels of depth and width.

Faced panels, laminates and edges exclusively manufactured at production sites in Brianza are installed worldwide. Cleaf is represented in India by the Mumbai-based Aryamman Interior Solutions.

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Pradeep Kumar Gopal
Project Director
E : pradeepkumar.gopal@nm-india.com
M : +91 9986066910

Belliappa M K
Project Manager
E : belliappa.mk@nm-india.com
M : +91 9916092922

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Continental wins four Interzum awards



At Interzum, the technology company Continental presented surfaces for the furniture industry that included several innovations, concepts and stimuli for designing the living spaces of tomorrow. In addition to new surfaces, two areas of focus were its surface-specific requirements of interest to architects, planners and designers.

The company highlighted digitalisation to show how its surfaces by means of AR and VR-based programs. At the centre of it was the new Skai Design Lab, a tool that reflects the trend toward individualization, which will revolutionise the process of design development by creating new designs with just a few clicks.

Four Continental surfaces received the Interzum award for intelligent material and design. These were the upholstery materials, Skai Pureto EN, and laif VyP Nappa, the furniture films Skai Colore Metaspin and Skai Colore structure Ultra.

Skai Pureto EN is an alternative to conventional, synthetic upholstery materials, because it is PVC-free. The material is manufactured from a water-based, but very robust polyurethane system, which is solvent-free and, therefore, sustainable. Its soft and pleasant feel gives it a high level of comfort. The surface is embellished with a classical, fine calf leather grain. The colour range includes modern trendy colors in subdued pastel tones.

Laif VyP Nappa is the next generation of breathable upholstery materials. The hybrid of vinyl and polyurethane combines the surface softness with durability. The raw materials contain no conventional solvents and are based on high-quality, water-based polyurethane systems/finishes that is air and water vapor permeable. The material is tear-resistant, highly resistant to abrasion, and easy to clean.





Praveedh Décor makes its debut

Praveedh Décor was the only company from South Asia region to exhibit its full range of premium pre-laminated panels made using a gamut of surfaces like scratch-proof, high-gloss acrylic, super matt, acryl glass, textures, rustics and wood grains.

OpuLux, a collection of finely curated scratch-proof surfaces on a host of core materials was the centre of attraction. The high-gloss acrylic panels use plywood, birch plywood and MDF as substrate.

OpuLux Acryl glass was the cynosure of visitors to the stall – the reflective glass look, minus all the disadvantages of glass, was what made OpuLux Acryl Glass extremely popular amongst architects and designers.

Keeping abreast with global trends, OpuLux

Supermatt panels piqued the interests of global visitors because of their smooth, satin and silky finish, coupled with excellent surface properties like no fingerprints, superb scratch resistance, and a wide palette of decors to choose from.

Nivesa, the upcoming product range from the house of Praveedh Décor, was also magnetic. With seven finishes to choose from, including high gloss, abstracts, fabrics, textures, wood grains, Nivesa offered something for everybody!

Rustic and concrete finished laminated panels on MDF and birch ply particularly garnered attention of visitors who were interested in using the latest surfaces while blending traditional aesthetics for their projects.

Crown Laminates, a company of India's Royale Touche Laminates group, are manufacturers and exporters of high pressure laminates. Its product range covers decorative laminates, post form laminates, marker and chalk grade laminates, kids laminates, liner and phenolic laminates, hi-gloss laminates, synchronised laminates, anti-finger laminates, high definition digital print laminates, compact laminates, exterior compact laminates, HPL deck floor, HPL shower panels, HPL kitchen backsplash and HPL kitchen tops.

The products are available in more than 600 colours in over 50 surface finishes.

The group has seven production lines in four different sizes and produce over 18 million square metres of HPL annually, with thickness ranging from 0.6mm to 25mm. The laminates are manufactured at a facility equipped with imported machinery from Spain, Germany and Italy.

Products are created with imported design papers made from highly resistant pigments that guarantee freshness. All products have Green Guard, Green Building, FSC, EN438, CE,

Crown's laminates grab attention



NEMA, Green Label, fire rating and anti-bacterial certifications.

It is also an Indian power brand classified product and the group has approximately 200 full-sheet display show rooms across India.

Materials specialist Egger thrills

visitors



1

(Both pix: Becker Lacour)

Egger presented a range of new products and displayed several new trends under the tagline “More+less”. The company also won the intelligent material and design 2019 award at the event.

1 Egger showed its highlights in a total of six room berths. This is the newly developed synchronised pore texture ST32 Feelwood Vintage on a large cabinet front surface.

PerfectSense Matt with Duo Edging received the award “Best of the Best” for the successful interplay of the two products. The new worktop texture ST75 Mineral Satin and PerfectSense Topmatt worktops with edging received the “High Product Quality” award.

The wood-based material manufacturer presented the new ST20 metal-brushed texture that gives the look and feel of finely brushed metal. For worktops, Egger presented the newly-developed ST75 Mineral Satin texture that gives decors a matt and velvety feel and its irregular look makes the decor image appear very realistic, particularly marble reproductions.

The Feelwood family has also grown: ST32 Feelwood Vintage is synchronised with the decor image of the Sherman Oak and replicates burnt wood or waste wood. ST19 Deepskin Excellent creates liveliness and a natural finish with its interplay of matt and gloss grains.

Egger also had a few novelties and further developments among its products. Two new entries were presented among worktops: The homogeneous, moisture-resistant and extremely robust compact worktop of 12-mm thickness is for use as a worktop. Here, the two-sided bevel milling on the longitudinal and transverse edges emphasise the thin, modern look of the compact worktop.

To bring the matt look into the kitchen, the company has introduced the new PerfectSense Topmatt worktop with edging on the basis of a 16 mm MDF board. The laminate, with its impact and scratch and abrasion resistance is ideal for applications on worktops. Its supermatt and velvety-warm surface also has an anti-fingerprint feature.



2

2 The combination of PerfectSense Matt with Duo edging received the ‘Best of the Best’ award at the Interzum 2019.

Egger has also focussed on the product area furniture components and is able to continuously produce furniture components with Clic technology. This technology facilitates fast and uncomplicated assembly and can be transported directly to the site, in SKD condition.



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Greenlam unveils new surfacing solutions



Greenlam Industries, a creator and innovator of modern and stylish decorative laminates and veneers for decades, displayed a plethora of exquisite decorative surfaces products at Interzum 2019. The variety of offerings brings life to interior spaces by using creativity into every piece of work.

The new and attractive range of elegant products for laminates, veneers, engineered door solutions, engineered wood floors was showcased to the customers. Additionally, fresh arrivals were also displayed like the Greenlam Laminates Madera collection, interior and exterior cladding solutions, Stratus collection, Infinia Countertop collection, wet panel products, HPL collection and Mikasa floors.

At the exhibition the company highlighted the fact that it is among the largest surfacing-solutions brand in the world and that it has two state-of-the-art manufacturing facilities that offers end-to-end surfacing solutions spread across laminates, compacts, decorative veneers, engineered wooden floors and engineered wooden doors.

Hawa puts any sliding door in the pocket

Sliding doors are the fashion, particularly sliding doors which are concealed in wall pockets. They are in keeping with modern interior design, and the requirements of a demanding customer base.

The sliding fitting system from Hawa is of top quality and suitable for doors made from either wood or glass. The best-seller among Hawa Sliding Solutions range is the Hawa



Junior family, which has proved itself for more than three decades.

Systematic updates have ensured that this universal sliding fitting system for doors made from wood, glass and metal, is state-of-the-art. With many different suspensions and guiding options suitable for every application imaginable, with supplementary parts and plenty of accessories, the range presents itself today as younger and more dynamic.

The fitting system stands out because of its perfect operating convenience. Handles and finger sleeves are not needed thanks to the integrated push-to-open mechanism. The play-free installation of the running track and the SoftMove soft closing mechanism provide maximum quiet running and additional operating convenience.

The pre-assembled retainer profile, the running track can easily be installed and removed using rattle-proof bayonet locks. The assembly set makes it easy to install, remove and move heavy doors weighing up to 250 kg.

Caple raises the bar of service standard in India



Hettich showcases award-winning solutions



1

1 The ComfortSpin turntable (left) and ViZard flap fitting (right) collected Interzum awards for innovation and high product quality.

Stark changes in both life and home living have been brought about by megatrends. Hettich, the world's leading manufacturers of furniture fittings, with its forward-looking outlook, presented, under the Fascin(action) banner, exciting product solutions at this year's Interzum.

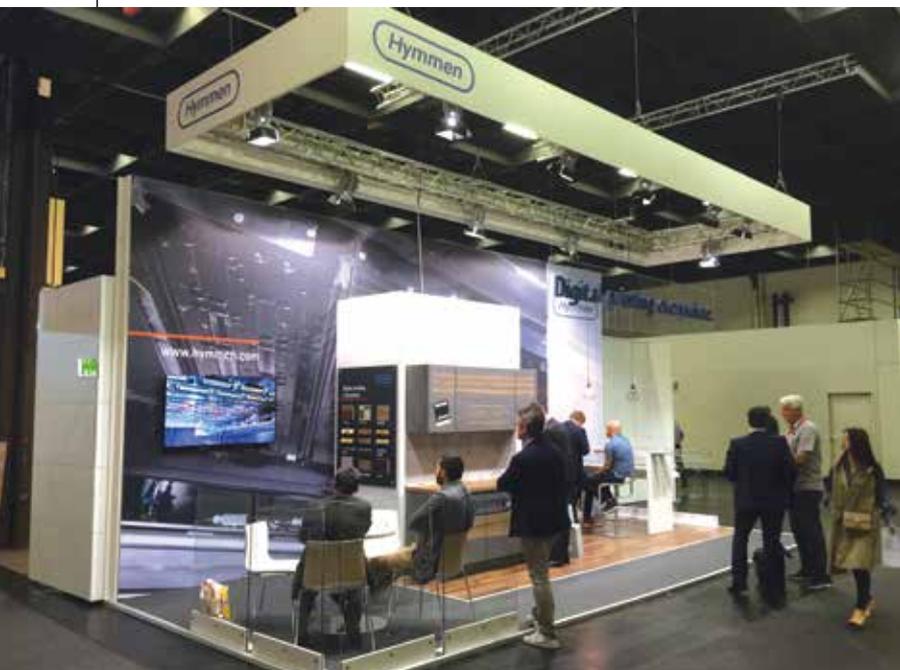
These solutions meet various versatile demands ranging from smaller living spaces needs, new living concepts and work models to the growing demand of customizable furniture. Every conceivable need of furniture buyers in terms of feel style, enjoy comfort, and win storage was covered effectively.

Hettich, whose products combine intelligent technology, functionality and design, was awarded two top prizes for ComfortSpin and ViZard by Ambigence at Interzum.

The innovative ViZard by Ambigence flap fitting collected the 'Best of the Best' award and the innovative ComfortSpin turntable won the 'High Product Quality' award.

The ComfortSpin turntable, a multiple award winner, rotates food items and cabinet contents through 360 degrees, making them easy to reach.

Hymmen promotes digital printing 'everywhere'



Hymmen, the machine and plant manufacturer, demonstrated digital printing for furniture at Interzum 2019 with a variety of application examples. To capitalise on the tremendous innovation and cost-saving potential of digital printing for the furniture industry, Hymmen's Jupiter digital printing lines provide a technology that's already proven on an industrial scale.

The decentralised use of digital printing technology opens up enormous advantages with respect to decoration flexibility without setup costs, with high profitability and production efficiency.

The company offers pioneering digital printing technologies, not only in terms of the decoration of surfaces, but also in terms of haptics. The latest development is the now patented digital lacquer embossing (DLE)

structure printing method, which offers interesting and completely new design options for the furniture industry, including for uni-colored surfaces.

The technology has won Hymmen the Interzum Red Dot award for the high product quality produced by this method.

The company has managed to print even particularly difficult decors in excellent quality, in a single pass. For this purpose, it has developed an automatic colour calibration software.

Of interest to companies with digital printing needs for smaller batches is the single-plank line newly developed, which, in addition to demand-based capacity volumes, also offers the advantage of printing into the joint.

On display was a variety of digital printing applications and structured product samples of doors, kitchen work surfaces, kitchen fronts, rear wall cladding, table tops, flooring, moldings, and edge bands.



Original shelf

systems from Peka

Swiss furniture and fitting manufacturer Peka's stand at Interzum showcased how furniture choices influence the quality and functionality of a space. It demonstrated how its sleek, stylish unit and shelf systems lend kitchens, living areas, bedrooms and offices a touch of understated elegance.

Peka's latest storage solutions embody the coming together of design, technology, materials and human relationships. They provide practical responses to the little niggles encountered in a home and ensures that there is always plenty of organized, accessible storage space, no matter how small a room.

The new Pecasa shelf system is structured around the central wall profile that holds everything together. Users are free to choose any combination of shelves, cabinets, desks

and clothes rails and position them however they like for a custom furniture solution.

No matter the size or shape of the space or the height of the ceiling, the highly flexible Pecasa system is the perfect fit – be it in a home office, a living area, a bedroom or a hallway.

Peka has been manufacturing pull-outs and complete solutions for the kitchen and furniture industry for over 50 years and has grown to become one of the world's top market providers of larder unit pull-outs, slide-out corner systems and user-friendly, ecologically designed waste sorting systems. It is represented in India by Ebco in Mumbai.



MumbaiWood 2019 is set for another success

Following its earlier three editions, the next edition of MumbaiWood is shaping up to be another huge success, 17-19 October, 2019. The exhibition will not only significantly increase in size but offers a visitor turnout from across India.

The 4th edition of MumbaiWood, to be held at the Bombay Exhibition Centre, Mumbai, will once again offer the industry 5,000+ impressive square metres of display of machinery, technology, raw materials, semi-finished products, components, hardware and fittings for the interior and furniture manufacturing sector.

MumbaiWood Highlights

- More than 175 exhibitors from all over India and abroad
- High visitor registrations confirm readiness for trade
- Showcase for tech & capacity upgrades, skill development
- Great platform for architects, builders & interior designers

Hosting over 175 participants from India and other countries, the trade fair offers a holistic experience for furniture and wood-based manufacturing industries.

MumbaiWood today has established itself as one of the most important event of the entire Indian woodworking industry, along with IndiaWood and DelhiWood for the western India region, having consistently offered an



all-encompassing platform for both the demand and supply sides to equip themselves with latest in technology, design, machinery and raw materials.

Bringing together the best and most influential decision makers within the woodworking and furniture industry from across India, the 2019 edition of MumbaiWood is expected to be an “unmissable” trade and technology platform for manufacturers and woodworkers, as well as architects and real estate developers, making the event an ideal platform for exhibitors and buyers looking to gain an edge in a highly competitive market and meet face-to-face with decision makers.

An aggressive marketing plan is in place to attract visitors from across India and for sure MumbaiWood will attract more number of buyers from smaller cities like Pune, Nagpur, Nashik, Thane, Palghar, Aurangabad, Solapur, Amravati, Nanded, Kolhapur, Raigad, Jalgaon, Ahmednagar, Chandrapur, etc. in Maharashtra; and from Surat, Vadodara, Rajkot, Bhavnagar, Jamnagar, Junagadh, Gandhinagar, Gandhidham, Nadiad, Morbi, Navsari, Bharuch, Vapi, Bhuj, Godhra, Palanpur and Valsad in Gujarat.

Exhibitors can expect a good number of buyers coming from North Karnataka and Goa also.

Save the dates

MumbaiWood:
17-19 October, 2019: Mumbai, India

IndiaWood:
27 Feb-02 March, 2020: Bengaluru, India

Holz-Handwerk:
18-21 March, 2020: Nuremberg, Germany.

Bookings are now open for MumbaiWood, which is organised by NuernbergMesse India Pvt Ltd in cooperation with PDA Trade Fairs Pvt Ltd.

Detailed information can be found on www.mumbai-wood.com.

For bookings, contact:

Mr Belliappa M K,
Project Manager
(Tel. +91-9916092922,
email: belliappa.mk@nm-india.com), or

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CIFF-Shanghai 2019: New paradigm for global living

The outstanding success of the last China International Furniture Fair (CIFF) in Shanghai boasted a record 37% increase in attendance. There is, therefore, greater anticipation for the 44th edition of CIFF taking place at the National Exhibition & Convention Centre in Shanghai Hongqiao, 8-11 September this year.

CIFF Shanghai 2019 represents the entire furniture supply chain and, therefore, offers a full-scale event capable of attracting and engaging producers, buyers, retailers and designers. Over 1,500 exhibitors have been selected to represent the theme, 'A Paradigm for Global Living'.

The exhibitors will offer visitors new concepts for living and working while being surrounded by high quality products and new business opportunities.

The fair will be organised by China Trade Macalline Exhibition Co. Ltd., a company which was jointly founded by China Foreign Trade Guangzhou Exhibition General Corporation, main Asian trade fair organisation that has always organised the fair, and by Red Star Macalline Group, undisputed leader for the distribution of furniture in China.

These two companies have created a new organisation model called 'Exhibition and Store Alliance' which is capable of offering extraordinary advantages both for exhibitions and for commerce.

Fair objective

Attracting thousands of foreign visitors every year, CIFF Shanghai is demonstrating its strong international vocation and, thanks to these results, it provides a golden opportunity for Chinese export companies to showcase their products.

The objective of CIFF is to make foreign markets more aware of the quality and variety of Chinese design. This is the concept behind the four main exhibition areas where the fair is organised.





'Contemporary Design Hall' will incorporate innovative modern design brands for home furnishings. It will also present a range of exciting design events offering an in-depth insight into contemporary Chinese design trends, providing inspiration for the many high-end interior designers expected in Hongqiao.

The fifth edition of the East Design Show will be hosted here. This marvellous exhibition is promoting high-end Asian design while combining creative and business perspectives.

The second edition of the Design Dream Show (DDS) is a much-anticipated event that offers the most innovative trends and highlights the credibility of Chinese design while promoting the international competitiveness of Chinese industry.

Global flavour

The hall hosting 'International & Lifestyle' will focus on international design. Numerous world-renowned brands will present new innovations and trends and introduce collections to take advantage of the

extraordinary opportunity offered by CIFF to enter the prosperous Chinese market.

Individual brands and groups of companies from Germany, Turkey and other countries will guarantee a very cosmopolitan display of products.

The North Hall will be dedicated to lighting in response to the current demand from the Chinese middle class for high quality lamps. 'International Lighting' will bring together international lighting brands which makes it the first truly international professional lighting show in China.

Other halls will be divided between outdoor furniture, fabrics and home accessories; 'Sleep Centre & Dining/ Living Room', and one hall each will focus on sofas and fashionable offices.

In conjunction with CIFF Shanghai 2019, the second edition of the Shanghai International Furniture Machinery & Woodworking Machinery Fair will take place in two halls. This fair was created by a partnership between CIFF and WMF. (www.ciff.furniture).





Malaysian Wood Expo to debut in November

It is an inaugural event, and the organisers are pulling out all the stops to make the Malaysian Wood Expo 2019 (MWE) a huge success. MWE will be held from 19-21 November, 2019, at the Putra World Trade Centre in Kuala Lumpur, Malaysia.

An international wood and woodworking machinery event, MWE aims to bring together international timber-based and woodworking machinery suppliers, as well as buyers for trade and networking opportunities.

MWE will also serve as a stepping stone for those who wish to expand their business wheelhouse into the ASEAN region, including Malaysia, which is the second most competitive economy in the region.

MWE will be the place where “marketing meets sales” and where key decision-makers secure potentially mega sales. Opportunities to generate business deals and network also await visitors of MWE.

Exhibitors can showcase their newest products, meet key decision-makers who are shaping the timber industry, trade with South-East Asia’s fastest growing economies, and

forge new and formidable business ventures.

Visitors can expect to network and generate new business opportunities and contacts, discover business solutions that can help the re-evaluate their operations, and discover the latest trends and innovations in the region.

MWE is endorsed by the Ministry of Primary Industries in Malaysia, the Malaysian Timber Industry Board, Malaysian Wood Industries Association, the Timber Exporters’ Association of Malaysia, the Malaysian Panel Products Manufacturers’ Association, Malaysian Furniture Council, Malaysian Wood Moulding and Joinery Council, Association of Malaysian Bumiputra Timber and Furniture Entrepreneurs, as well as international industry powerhouses such as the American Hardwood Export Council and French Timber.

The expo is also supported by the Malaysia External Trade Development Corporation. Organised by the Malaysian Timber Council, MWE 2019 will be the first true coming together of top exhibitors and buyers in South-East Asia. For more details, contact info@malaysianwoodexpo.com.my.

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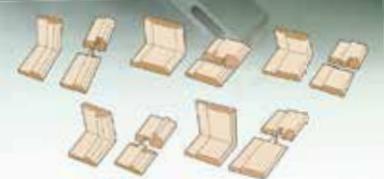
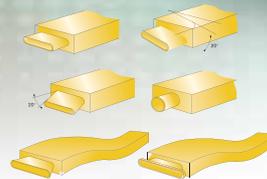
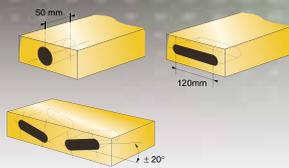


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Canadian Wood hosts educational seminars in five cities

1 Furniture manufacturers and interior designers in Kozhikode and Hyderabad examine products manufactured using various species of Canadian wood.

A series of educational seminars were conducted by Forestry Innovation Consulting (FII) India under the brand 'Canadian Wood' to educate potential customers of wood species from British Columbia (B.C.) about the benefits of working with wood.

Conducted from 2 April to 6 June 2019 in Chennai, Kozhikode, Pune, Hyderabad and Nashik, the seminars drew more than 250 by-invite-only attendees. This comprised of architects, interior designers, solid wood manufacturers, real estate developers, builders and timber merchants.

Mr Peter Bradfield, Technical Advisor, Canadian Wood, took the participants through usage of B.C. wood species, their versatility, aesthetics and environment-friendly credentials.

The 2-hour programme at each venue helped users understand the wood's applications in interior, outdoors and structural applications.

B.C. is a world leader in sustainable forest management and wood from B.C. comes from PEFC- and FSC-certified forests, assuring customers of its legal, sustainable source.

Attendees saw examples of how the wood was being used in India across furniture, doors, door frames, decking and gazebos. The wide array of products and projects in hospitality, education and housing left an indelible impression.

The key takeaway from the seminar was the use of different species – such as Western hemlock, Douglas fir, SPF and Western red cedar – and their different grades.

Potential customers also have an option to choose a grade that best suits their requirements and budgets. (www.canadianwood.in).

2 Architects, real estate developers and timber merchants in Chennai listen to Mr Peter Bradfield, Technical Advisor, Canadian Wood.



A N N O U N C I N G

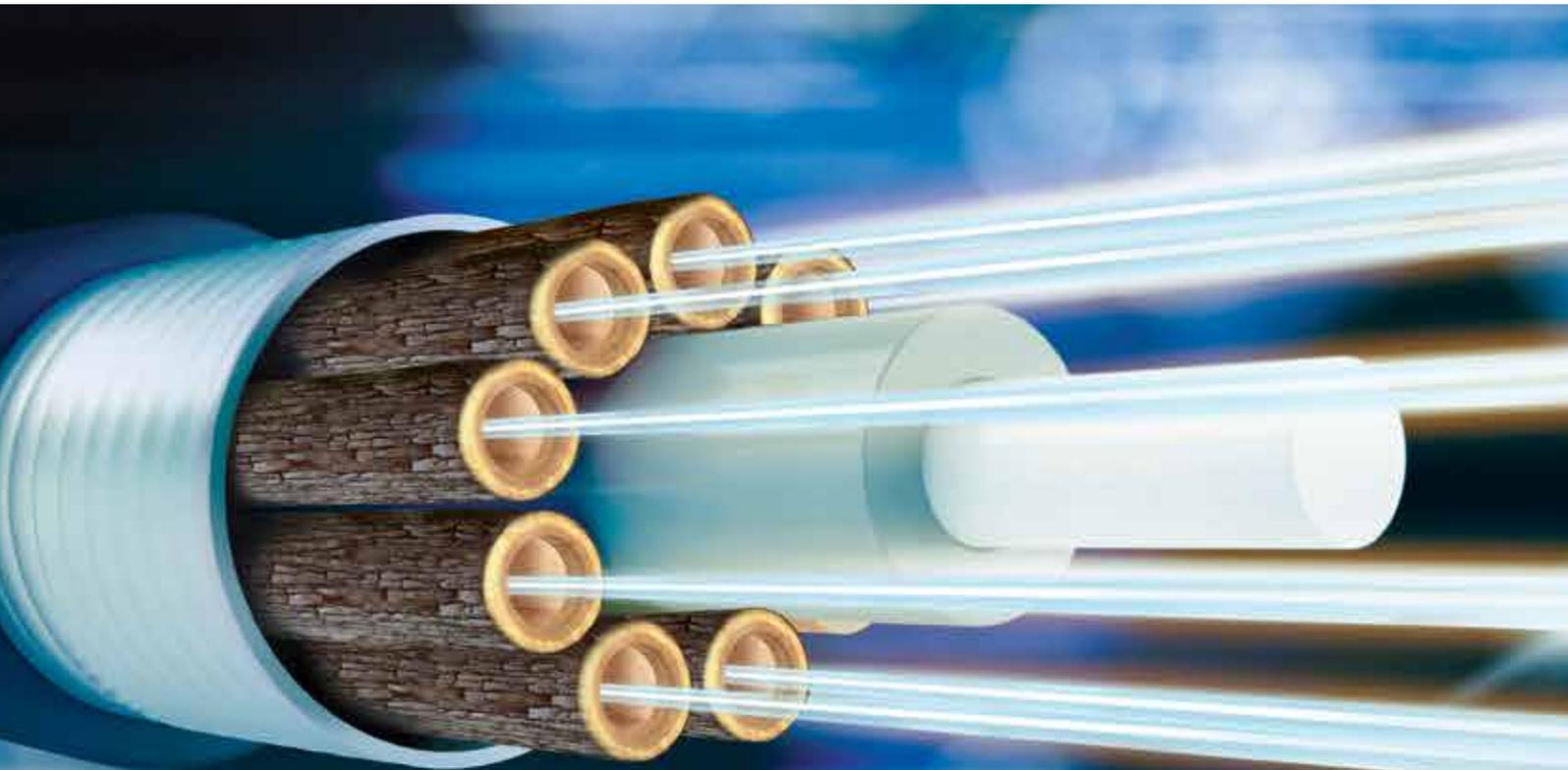
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Pradeep Kumar Gopal
Project Director
E : pradeepkumar.gopal@nm-india.com
M : +91 9986066910

Belliappa M K
Project Manager
E : belliappa.mk@nm-india.com
M : +91 9916092922

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RPL certification is about employer-worker benefits

There is an urgent need for skill training across the country. The absence of sufficient training avenues prevents people from acquiring skill training and certification through the formal channels.

As a result, most of the skill acquisition takes place through informal channels, such as family occupation, on-the-job training under master craftsman, etc. These skills go unrecognised as they are not acquired through formal means and are never formally recognised.

This prevents some sections of the skilled workforce from accessing formal employment opportunities, utilising their experience to further taking up educational courses and benefitting from other career progression opportunities available through the formal training system.

'Recognition of Prior Learning' (RPL) is a certification framework which assesses those who have acquired skills informally, and then recognise them with a formal certification. The certification not only allows us to

1



1 Process flow of RPL Type-4.

recognise their skills but also helps them access future opportunities in the formal ecosystem.

Benefits of RPL

The aim of the project – undertaken by the National Skill Development Corporation (NSDC) and the Furniture and Fittings Skills Council (FFSC) in particular – is to certify the existing manpower in each sector as per the National Skills Qualifications Framework (NSQF), which enables vertical and horizontal career progression for the candidates and encourage new entrants to attain training under NSQF-aligned courses developed by sector skill councils.

Such certification improves employee motivation and their interest in workplace activities; facilitates access to jobs and progression in career pathways; and promotes a culture of continuous learning in the organisation.

These focused training programmes aim to meet the need of an employee (identification of skill gap) and avoid duplication of training. This saves time, which could be effectively utilised towards growth and innovation.

It also provides employees recognition in terms of NSQF grading and salary classification.

The NSQF levels of 1 to 10 help each employee identify his/her skill gaps and provide opportunities to upgrade his/her skills for personal and professional growth in future.

Financial benefits

The Union government provides accidental insurance of up to Rs. 2 lakh for all certified candidates for a period of 3 years, as per PMKVY guidelines. Reward money of Rs 500 is also disbursed to the certified candidates through direct bank transfer.

The FFSC has so far certified more than 4,000 employees across the country employed under top industry players such as Hettich India, HePo, Greenply Industries, Narsi Group, AIPL, etc.

The FFSC is aiming to scale up the project by involving industry clusters, associations, consortia etc. who are willing to partner with the council to initiate the certification of their employees.

To participate in the RPL projects, email Mr Shrikanth Sasi at info@ffsc.in.



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American red oak in focus

(All pictures: Fraser Stephen)



1

The 'Blushing Bar' not only pushes the boundaries of the material, but also of its designers

1 For AHEC this is yet another irresistible mission to redefine red oak through experimentation.

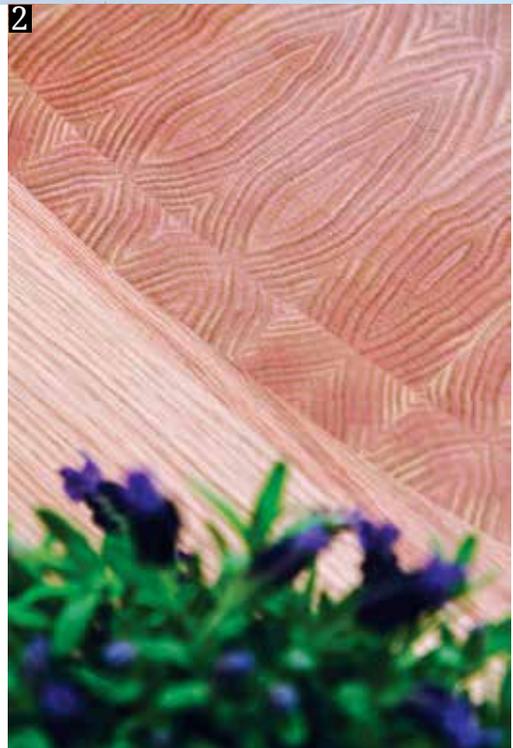
The 'Blushing Bar', a vibrant pink circular bar stole the spotlight at the recently concluded 'Handmade X: With Love' exhibition. Made out of American red oak, it not only pushed the boundaries of the material but also of its designers and was on show from April 9-13, 2019 at Salone dei Tessuti.

2 The holes in the end grain were filled with red calligraphy ink, clamps fastened, and a high-pressured air channel forced the ink into the end grain of the wood.

Designed by architects Chan+Eayrs and made by Sebastian Cox, in collaboration with the American Hardwood Export Council (AHEC), the piece was created to answer the brief of 'X' set by the team at the magazine to celebrate 10 years of its showcase in Milan.

American red oak is the dominant species in the US hardwood forests, making up nearly one-fifth of their standing hardwood volume – with distinctive grain, and wood that is not always red in colour. The name comes from the leaf colour in the fall.

2



Red oak trees grow only naturally and almost exclusively in North America, although planted elsewhere. They are widely distributed throughout most of the eastern US in mixed hardwood forests.

American red oak is growing 55.2 million cubic metres per year, while the harvest is 33.9 million cubic metres per year. The net volume (after harvest) is increasing 21.3 million cubic metres each year.

According to Zoe Chan, one half of Chan+Eayrs, the 'Blushing Bar' is a place of connection, a focal point for coming together and it feels very personal, much like the projects the firm tends to take on.

The bar is composed of 10 modules intended for making cocktails (water, alcohol, fruit, herbs, holders, ice, cutting, glass, sodas, wash basin), each of which forms a variation of a curved, sculpted element.

With its sculptural external facades and sensuous carved feet, the bar combines sculptural qualities with functionality, while celebrating the unique properties of the timber it is made of.

To dye the wood, Sebastian Cox and his team machined a series of uniform holes into the end grain of red oak, around 25-mm deep and 14mm x 30mm wide. The wood was then put into a purpose-made dyeing jig.

The holes in the end grain were filled with red calligraphy ink. According to Cox, by filling a series of holes, the team ensured the ink was distributed evenly across the board of red oak. By using calligraphy ink, they were able to get a very intense colour.

A series of clamps were fastened onto the end of the piece of red oak applying an air-tight rubber seal over the end grain and the holes filled with ink. Once closed, a high-pressured

air channel, which was attached to the clamps, was gently opened allowing eight bars of pressured air into the end grain of the wood and the ink-filled holes.

This pressured air forced the ink into the uniquely ring porous structure of red oak, emptying the holes in a matter of seconds. At this point, the ink in the holes was forced through the pores of the wood, also known as xylem, by the pressure.

The ink in the xylem of the wood, when viewed in the machined pieces of red oak, effectively highlighted the wood's grain in a bright red colour. These highlights were manipulated through the design and manufacture of the bar to produce the finished effect.

"Red oak is uniquely ring porous. So this project has been a really fun exploration of its cellular composition and how we can use it to achieve a new aesthetic," said Cox.

For AHEC's part, the 'Blushing Bar' is yet another chapter in its irresistible mission to redefine red oak through experimentation and new narratives that challenge industry preconceptions. As a timber, AHEC believes red oak has been seriously and unfairly ignored in Europe and other parts of the globe.

Cox believes, "We are in the dawn of the wood age, and it's important to invite people to constantly reconsider wood as the only material that stores CO2 and is such an obvious part of the solution to our current climate crisis." Check out www.americanhardwood.org.

3 *The bar has modules for water, alcohol, fruit, herbs, holders, ice, cutting, glass, sodas and wash basin in curved, sculpted elements.*





From Ukraine, 3D wall art for travellers

A Ukrainian start-up, 'Enjoy The Wood', has made its debut with 3D wooden world maps, each map made of 55 self-assembling pieces, for home and office interiors. The maps are made of birch plywood and have three-layered, stylishly designed pieces in natural, grey or blue colours.

The maps are made of very detailed, precision-cut wood using high-quality techniques, as well as eco-friendly materials. The exclusive feature is that one can mark all countries you've visited, or future destinations that one might have!

The maps already have tiny holes, so that one can simply put a pin in any location on the map. The world's 15 most popular sightseeing marvels, such as the Taj Mahal, Big Ben, Eiffel Tower, and others are available as beautiful push pins.

Buyers have the option of illuminating the continents. The neon red, blue and green LED lights glow in seven main light options and a couple of illuminations. One can regulate the brightness of the light using a compact remote control.

Installation is easy and in under an hour as each map piece has a number that matches a template, part of the included installation instructions. Each map includes special sticky tape / double-sided removable adhesive that does not ruin the walls.

The maps come in sizes of 100x60cm (medium), 150x90cm (large) and 200x120cm (extra-large). The maps can be ordered on Kickstarter. The trendy stylish design makes it a unique wooden wall décor for the home, office, or as a gift for vivid travellers!



Korean artist releases 'steamy' series



Ever since his international debut in 2010, Bae Se Hwa has become a fresh sensation as a young Korean designer. Bae is best known for his dynamic collection of works called the 'Steam Series'.

This collection embodies emotional function as well as displaying a sense of calmness and serenity. In Bae's 'Steam Series' he utilises a steam-bending technique in which he distorts and deconstructs very linear wood elements and then recombines them into new pieces that are bent and curvilinear in form.

This process has allowed Bae to create beautifully organic flowing pieces that are very much alive with rhythm and demonstrate the flexibility of wood despite its solidity.

Bae's philosophy is to reach balance and harmony through the use of form and function. His pieces follow this philosophy, each of them depicting curvaceous yet minimalistic designs: a perfect balance of natural elements and geometric construction that captivates and entrances the senses.

After Bae designs a piece with a geometric diagram, he begins to handcraft it from thin strips of dark walnut. He then places each strip in a steam box, bending each strip over a structured frame. Each strip is bent individually.

As every piece is extremely rigorous and laborious, Bae is only able to produce a few pieces a year, working in his studio in Seoul.

Many awards have come the Korean designer's way, among them: 2009 Gold Prize, Gyeong'gi Furniture Competition, Korea; 2008 Special Prize, The Steering Committee of Korea Arts and Crafts, Korea; Hong-Rim Prize, Korea; Silverleaf, International Furniture Design Fair Ahsahikawa, Japan; Most Wanted, Living Design Awards, Korea; 2006 Winner, Furniture Guide Competition, Korea; and 2005 finalist at the Cheongju International Furniture Competition, Korea. (www.baesehwa.com).

Building tall with self-shaping wood



Courtesy: The Development & Construction Partnership Inc.

Engineers at the University of Stuttgart (Germany) have harnessed the natural shrinking process of wood as it loses moisture to create a world-first self-twisted tower for a garden show.

The university's Institute for Computational Design and Construction (ICD) and Institute for Building Structures and Structural Design (ITKE) built the 14-metre-high Urbach Tower for a show in Remstal. It marks the first time that this process has been used in the construction of a building.

The structure is made using a new, non-energy-intensive process that involves predicting how wood will shrink as it dries out. Based on this technique, the flat timber panels are designed to warp into the desired shape.

The ICD and ITKE describe the method as a way of "programming" wood to take on a specific shape, and say that the timber is in effect "self-shaping". "While making this work is relatively simple, predicting the outcome is the real challenge. Being able to do so opens up many new architectural possibilities," said ICD head, Mr Achim Menges.

A key advantage of this is that it requires little energy, avoiding the need for the kind of heavy machinery that would usually form these kinds of timber components.

The process starts with 5x1.2-metre panels of cross-laminated timber (CLT) made of bi-layered spruce wood sourced from Switzerland that were manufactured flat, with a high wood-moisture content of 22%. Engineers control the shape the timber will take when it dries by altering the panels' specific layup.

For the Urbach Tower, they chose a curved shape. They reduced the panels' moisture down to 12% in an industrial drying chamber. After removing them, they overlapped and laminated the pieces to form the 12 larger curved strips that form the building's structure.

The resulting structure is light and seamless-looking, with walls that are 9-cm-thick, with a weight of 38 kg per square metre of surface area. "What looks simple is difficult to achieve. It is only possible through an ingenious interplay of form and force," said ITKE head, Mr Jan Knippers.

Bio-based solution for flooring from DSM

Royal DSM, a global science-based company in Nutrition, Health and Sustainable Living, launched a new, bio-based self-matting resin, Decovery SP-2022 XP, which will take ultra-matt flooring finishes to new levels in terms of aesthetic and functional performance, ease of application and sustainability. The new resin underlines DSM's ambition of using science and innovation to develop sustainable solutions that outperform conventional market alternatives.

Used to create low-gloss finishes on wooden and seamless flooring, Decovery SP-2022 XP resin offers excellent levels of functional performance at a much-reduced environmental impact. Specifically, the resin has 30% bio-based content, can be formulated with low levels of VOCs (less than 250g/l based on 40 CFR 59.406), and is low in odour, while

also delivering outstanding chemical resistance and mechanical properties, including scratch resistance. In this way, it enables a premium, ultra-matt appearance while safeguarding the environment.

In addition, the new resin addresses the strong market demand for ultra-matt coating products that are easier to apply and formulate. In particular, the resin requires no matting agents, no difficult formulations, and offers excellent in-can stability. As such, the new resin will enable significantly easier processing than many of the commercially available alternatives, with up to one-hour time savings in operations. What's more, floor coatings made with it leaves no roller marks or lapping, and, unlike traditional matt coating systems, show no polishing effect.



Lifting has never been easier!



EuroTech, the company that offers handling and transport solutions in the field of vacuum technology, develops customer-specific vacuum systems and components for automated handling tasks.

Their eT-Hover-univac range of vacuum lifting devices is expanding - it now includes the new eT-Hover-univac-line that is a more compact, lightweight version and is designed especially for building areas.

The device is designed as an attachment for crane and lifting equipment. It is suitable for lifting and moving large-surface loads made

of glass, wood, metal, stone or plastic. The new vacuum lifting device is also an attachment for crane and lifting equipment and compatible with the same materials. Being more compact and light makes it even more convenient for building areas and is suitable for applications that involve lifting and moving narrow loads.

It also has a manual turning function. The eT-Hover-univac-line can be turned continuously by 360° and has an automatic locking option at steps of 45°. Manual pivoting of the device by up to 90° is also possible. The device is operated using buttons on the case. A wireless remote control is optionally available. Two handles make the device easy to position and guide. An electric carrier arm for automatic pivoting is optionally available.

It has a two-circuit system and four suction plates arranged in line. It is this linear arrangement of the suction plate that gave the device its name. In vertical mode, the lifting device can lift loads with a weight of up to 360 kilogrammes; in horizontal mode, up to 500 kilogrammes. These loads can have dimensions of up to 2,500 x 1,000 millimetres. An extended main beam can increase the maximum dimensions to 4,500 millimetres.

Multiple security and warning systems, designed in accordance with DIN EN 13155, prevent operation errors and hazards.



Sound Seal offers paintable acoustic panels

Sound Seal, a leading manufacturer of noise control products, has introduced Chroma acoustical panels that are the perfect solution where a traditional fabric finish is not desired. The acoustically transparent, paintable finish blends well with finished drywall to create a space absent of echo and reverberation.

Rather than a textured finish of the fabric, the panels provide an understated, more discreet acoustic finish and offer the flexibility and optimized acoustic performance to meet any requirement.

In addition to drywall match, they can be painted using any Pantone colour. Sound Seal offers a permeable paint to accompany these panels for in-field application. The panels are available in a variety of shapes and thicknesses.

Sound Quality S-2100 panels with Chroma finish are the perfect solution where a traditional fabric finish is not desired. The

acoustically transparent, paintable finish blends well with finished drywall to create a space absent of echo and reverberation. Rather than a textured finish of the fabric, Chroma panels provide for an understated, more discreet acoustic finish within a space.

Chroma finish by Sound Seal is part of a Class A rated system tested per ASTM E-84. In standard Signature White, or any RAL or Pantone colour, Sound Quality Chroma finished panels provide absorption required to create an acoustically correct space.

Available in 5/8", 1 1/8", 1 5/8" and 2 1/8" Sound Quality S-2100 panels in Chroma finish provide a range of NRC values suited to any acoustical solution.

Features include excellent acoustical performance, Class A fire rated per ASTM E-84, wall or ceiling options available, a wide range of customised colours and customised sizes and shapes.



WOODNEWS

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iFurn embraces all CAD systems

their 3D product data directly accessible to as many furniture designers in industry and trade as possible - without consideration of the used CAD program.

The fitting is selected via the iFurn DataBroker catalogue interface and placed in a shopping basket. Numerous filter functions simplify the search for the correct fitting and make it easy to find the right accessories.

The user then selects the desired 3D formats and starts the conversion process. After a short time, the user receives the selected fittings in the required format.

In the past, the iFurn Service has been largely used by furniture designers. Now the fitting data can also be applied otherwise: In the sales solutions of imos iX 2019, the fitting can be presented not only in design and construction but also in its function.

All constructively movable furniture components such as doors, flaps, drawers, etc., can be opened and closed with a click. The viewer can then see the inside of the furniture as well as the kinematics of the components in animated form. This is either simply connected to the component or follows the real movement model of the used fittings.

iFurn is an online tool for the day-to-day work of the designer in the field of furniture production and interior design. Its supplier portal, which until now, has largely supplied construction systems based on Imos technology with supplier data, has expanded its range of services and, in future, all current CAD systems will be supported by digital fittings.

With the integration of a powerful 3D kernel into the iFurn online platform, the hardware data can be imported and reprocessed in more than 30 CAD systems. The data has thus become virtually system-independent, which multiplies the number of potential iFurn users.

Manufacturers or sales organizations of fittings can use this extended service to make

Mirror, mirror on the wall!

Häfele's new Aquasys light mirror is beautifully designed and gives value, functionality and style to any interior space and adds the perfect touch in the bath, vanity or closet areas of a home.

The versatile mirror comes fully assembled and unites the functions of make-up lighting, room lighting, mood lighting, demister (prevents condensation on the mirror during and after a shower) and sound system in an elegant design.

The front light, in natural and warm white, equipped with a memory function offers excellent colour trueness that exceeds the market colour rendering indexes making it very suitable as a make-up light. All functions are controlled via touch keys that are integrated into the mirror.

The easy-to-install, IP44-rated mirror comes fully-assembled with a mounting track for installation. With the option to rotate the mirror by 90 degrees, it's the perfect fit for any interior décor or style.



Jai's Optimus range redefines panel processing

Jai Industries offer an unparalleled array of products that include woodworking and panel processing machinery and electric motors. It is well known for its engineering quality, technology and innovation.

Its range of machines are products of R&D backed, high-end precision engineering and have the best possible features and are made of the topmost quality material and component. All the products are backed by dedicated service and guidance.

Jai currently manufactures 30,000 machines a year in its seven plants that have a total floor area of 4, 00,000 square feet. Its machines are specifically produced to suit Indian working conditions that ensure performance and operating comfort.



Model	Unit	OptiSaw 3.2
Sliding Table		
Sliding table length	mm	3200
Sliding table width	mm	400
Main Saw Unit		
Max. diameter saw blade	mm	305 x 30
Saw blade speed	rpm	3000 / 4000 / 5000
Motor for saw blade	hp	7.5
Scoring Saw Unit		
Max. diameter scoring blade	mm	120 x 20
Scoring blade speed	rpm	8500
Lateral adjustment of scoring blade	mm	± 3
Max. depth of cut of scoring blade	mm	5
Motor for scoring unit	hp	1
Other Specifications		
Cutting width / rip capacity	mm	1250
Length cross-cut fence	mm	2000 (telescopes telescopes to 3200 mm)
Dust extraction port diameter	mm	100
Total power	hp	8.5

OptiSaw 3.2

The OptiSaw 3.2 is a panel saw that offers all the benefits of the Optimus quality and precision along with manual adjustment of saw blade and rip fence features.

Salient Features

- A rigid support for all cutting with telescopic cross-cut fence. Sturdy frame with telescopic cross-cut fence with aluminum guides for precise and easy position. Panels can be squared & cut at an angle up to 45° on both sides of the table.
- Crosscut mitre fence equipped with DRO that displays the job length digitally. This enables a setting precision accuracy of +/- 0.1 mm.
- The saw shaft runs smoothly as it is electronically balanced as a fully assembled unit, with extensive cast components used in making it. High-precision vertical movement of the unit is linear with maintenance-free guide bearings that allow the whole unit to tilt easily and precisely to exactly the correct angle.
- Control panel & saw unit up-down wheels.
- Lifting and tilting of saw unit by means of hand wheels on the machine. Both wheels are placed with a user-friendly control panel with electronic digital readout of saw unit tilt. (Optisaw 3.2 (auto) is also available)

OptiDrill 2.3 Three Head Boring

OptiDrill 2.3 three-head boring machine offers multi-operational boring functions with flexibility and high productivity.

Its Lengthwise movement of heavy-duty, precision vertical boring heads on linear heavy rolling guides for ensures a prompt and easy positioning with digital readout.

The two vertical heads can slide away from each other depending on the center distance required between them. They can also be rotated by 90° giving more locational positioning. Auxiliary support frame with fence gives better solution for long panels.

The Aluminum fence with support rollers has four reference stops that slides accurately for smooth positioning. This makes it easy to feed long work-pieces. The second vertical head assembly also has a reference stopper for perfect, side-position alignment of longer work pieces.

It is also equipped with a user-friendly Smart Touch PLC control panel. (OptiDrill 2.6 Six Head Boring machine is also available)



Model	Unit	OptiDrill 2.3	OptiDrill 2.6
Maximum working thickness	mm	60	60
Maximum size of work piece	mm	2500 x 640	2500 x 640
Number of spindle head	no.	Three (One Horizontal & Two Vertical)	Six (Two Horizontal & Four Vertical)
Number of spindle head	no.	21	21
Total spindles	nos.	21*3 = 63	21*6 = 126
Shank diameter of drill	mm	10	10
Spindle rotation speed	rpm	2800	2800
Maximum drilling diameter	mm	32	32
Drilling depth	mm	0 ~ 50 (drill length 70 mm)	0 ~ 50 (drill length 70 mm)
Compressed air required	Kg/cm ²	6 to 8	6 to 8
Electric motor - 3 phase	hp	3 no's x 2 hp = 6	6 no's x 2 hp = 12
Machine dimensions (L x B x H)	mm	3480 x 3050 x 1560	4400 x 3050 x 1560

Panel Saw J-3200.in

Precision engineering, enhanced productivity functional ergonomics & sensible economics

Salient Features

- Sturdily built heavy duty m/c that suit Indian working condition for precise cut with burr free cutting
- Heavy Duty Precision sliding table with linear bearing developed with advanced technology with multi-chamber system for maximum rigidity of the double-roller carriage.
- Lifting and tilting of saw unit by hand wheels both on front side for more convenience
- Scoring saw precision lever mechanism for manual adjustment controls of the scoring saw with memory reference stop.
- Anodized aluminum rip fence with sliding system on heavy round bar for parallel cutting up to 1250mm. Fine setting

mechanism allows for precise measurements for parallel cuts.

- Saw unit vertical movement on precise round guides ensures smooth operation. Its closed structure guarantees high rigidity and a vibration free unit.



- The sturdy frame provides a rigid support for all cutting with telescopic cross-cut fence with aluminium guide for precise and easy positioned.

Rushil Décor offers wide menu in boards and laminates



1 The 'Surya Click' collection features characterful swirls, subdued shafts, cracks and knots to bring the look of true-to-nature wood.

2 Vir MDF provides an excellent substrate for painting, decorative foils or wood veneers.

Rushil Décor has built a great reputation for the consistent quality and product range of flagship brands like Vir, among customers across India and the world. The company's product portfolio includes MDF boards and pre-laminated decorative MDF panels in interior and exterior grades, as well as HDFWR (high density fiber board).

The use of the best raw materials – plantation-based wood of eucalyptus and silver oaks – as well as state-of-the-art manufacturing facilities with the latest German technology makes Vir MDF the first choice for interiors and furniture applications.

the application of decorative foils, or wood veneers. The inherent stability, good machinability and high strength of the product make it a great alternative to solid wood.

Although primarily developed for use in furniture, the product can be used for shop fittings, exhibition displays, wall paneling, architectural moldings, etc.

Manufactured at world class facilities, Vir Laminates is a market leader in India, offering an extensive range of decorative laminates for home and commercial use. At the same time, Rushil Décor Premium laminates is a favourite brand across 42 countries across the world.

Vir pre-laminated MDF boards are made by compressing decorative melamine-impregnated paper onto MDF boards under controlled heat and pressure. They are available in various finishes, sizes and designs to enhance the interiors of homes and working spaces.

They offer a wide range of shades, in both solid and wood grain textures, rendered by specialised imported décor paper from Europe, Japan and other countries with uniform glue absorption properties.

Vir Prelam Boards are widely used in homes, offices and commercial spaces for both interior and exterior decor applications.

Vir pre-laminated MDF, created in ultra-modern facilities, is resistant to moisture and caters to the different size, thickness and other requirements, across a broad spectrum of industries.

Surya Click

From natural raw to umber modern patterns, Surya Click laminate flooring helps you to create your own personal living space. The



With edgy designs and enduring quality, it is perfect for lamination, routing, high gloss-UV digital printing, office-home furniture and ready-made furniture. Also available in exterior grade with advance-formulated resin, it is recommended for exterior applications where the panel is exposed to moisture.

Vir boards

The smooth and stable surfaces of Vir MDF provide an excellent substrate for painting, or

new décor collection features beautiful designs with characterful swirls, subdued shafts, cracks and knots to bring you the look of true-to-nature wood.

The presentation of real hard wood is maintained through top quality fibres and resins, to provide high resistance and increased durability. The revolutionary click system is a good starting point to think about selecting the type of design to transform interiors into visions of design ranging from country to modern, classical or vintage.

Vir PVC cellular foam board is manufactured by the Celica extrusion process, an innovative European technology. The unique product property of the board is the combination of a solid top coat and a cellular core; both made of the same material and produced in one single operation.

It has a wide range of applications spanning interiors, direct digital printing, modular furniture and much more.

3



Vir 90-degree PVC flexible laminates offer high quality surface effects in vibrant colours and designs for innovative interior applications

Vir PVC offers a wide range of high quality, water- and termite-proof, fire retardant and long lasting laminates for domestic, industrial and commercial design solutions.

3 *Vir pre-laminated MDF are widely used in homes, offices and commercial spaces for both interior and exterior applications.*

‘Super-wood’ from Uruguay now in India

Vanpro is a leading marketing and a trading company based out of Delhi, marketing timber from some of the most prestigious mills in the forestry sector. It works closely with the end users and suppliers to maximise value for all the stakeholders.

Vanpro is committed to sustainable forestry and promotion of solid wood in different applications. One such hardwood, which is also considered as a “super-wood” is the *Red Grandis* from Urufor in Uruguay. ▶



Urufor owns 40,000 hectares of plantation forest, assuring consistent supply of excellent quality FSC-certified hardwood. The high quality, graded and kiln-dried timber is exported from Uruguay to more than 30 countries worldwide.

Unlike its 600 other species grown worldwide, *Red Grandis* is harvested by Urufor after every 20 years, thereby producing quality grades similar to North America oak and walnut.

Eucalyptus Grandis is known for its tough, unbending quality, and difficult drying process. The timber has changed the manufacturing dynamics of furniture making in China.

The colour can vary to almost white to light pink or dark red. The sapwood does not vary significantly from the heartwood, and this should be taken into account when processing it. The grain may be interlocked, but plantation stock is generally more straight grained, and the texture is fine.

India is at the critical learning curve, where manufacturers want to align themselves with timber which has a consistent availability, quality and grading and pricing.



With its beautiful grains, consistent texture, colour and perfect density, Uruguayan *Eucalyptus Grandis* is an ideal material for furniture. To increase its utility ratio, different materials are used: premium material for the essential parts such as counter tops; material with knots are used as finger-jointed lumber for the back or base plates.

The timber is available in thickness of 25.4mm, 31.8mm, 38.1mm and 50.8mm; has a width of 152mm and length of 2.5-4.9 metres.

Vanpro also markets and sells teak, hardwoods, pine and MDF. It can provide the manufacturers with:

- Ready-to-use components for furniture and door manufacturing
- 1-inch kiln-dried and 2.5"x3" components for furniture legs
- Pine for door stiles and frames
- Teak and hardwoods for doors, window panels and frames.

(www.vanproimpex.in).

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Forests for fashion

It is in tune with the recently adopted Vancouver Invitation on Forest Products for a Better Future, which recognizes the value of sustainably produced wood and wood-based products as environmentally friendly materials. Award-winning actress and UNDP Goodwill Ambassador, Michelle Yeoh, has also been a strong supporter of 'Forests for Fashion', and stars in the UN TV production on sustainable fashion, *Made in Forests*.

UNECE is also part of the UN Alliance for Sustainable Fashion, which was launched at the UN Environment Assembly. It aims at strengthening cooperation among UN agencies and programmes on the social, environmental and economic dimensions of the fashion industry.

(www.unfashionalliance.org).

The 'Forests for Fashion' initiative resulted from a fruitful collaboration between the UNECE/FAO Forestry and Timber Section, PEFC International and several PEFC members, and Cittadellarte Fashion.

Toppan to acquire decor printer, Interprint

Toppan Printing Co. has signed an agreement with Wrede Industrieholding GmbH to acquire 100% of Interprint GmbH, one of the world's leading decor printers. The transaction is expected to be completed by the end of 2019. Toppan is expanding its global market with the aim of achieving a 30% overseas sales ratio. The transaction accelerates its international expansion strategy in the decor printing market together with Decotec Printing S.A., acquired in 2017, and Toppan

Interamerica Inc.

While Interprint will become a part of the Toppan Group, its brand name will be retained and serve as an umbrella for Toppan's decor printing activities outside of Japan. "Our decision to choose Toppan as a strategic investor is a signal that Interprint will continue to be a trusted partner now and in the future," said Mr Michael Sindram, managing director of Wrede Industrieholding.

MTC to open more offices

Mr Richard Yu, the Malaysian Timber Council (MTC) CEO, has stated that the MTC will open regional offices in Houston and Rotterdam to promote Malaysian wood products and to help Malaysian companies source raw materials.

In a related development Yu announced that the function of the MTC office in Bengaluru (India) will be expanded to cover South Asia; while the MTC office in China will now cover East Asian countries such as South Korea, Taiwan and Japan. *-ITTO*

Calls for re-think on Forestry Act

Less than a month after the new government was sworn in in India, parliamentarians are calling for a rethink on the draft amendments to the Indian Forest Act, 1927. Principal among the concerns is that the National Forest Policy should be agreed before any amendment to the Indian Forest Act of 1927.

The draft amendment is controversial because it would classify commercial plantations as forests and because the amendment would authorise state governments to relocate people living in areas of forest where development or conservation efforts would be directed. -ITTO

NextGen takes over Dieffenbacher management



With Mr Christian Dieffenbacher joining the Management Board as the CEO of the family-run machine and plant manufacturer at the beginning of 2016, the company has set course

for transferring management responsibility from the fourth to the fifth generation. Effective July 1, 2019, Mr Wolf-Gerd Dieffenbacher resigned from the Management Board but will become part of the Board of Advisors and will remain associated with the company in various other capacities.

Mr Wolf-Gerd Dieffenbacher was actively involved in the company for over 40 years and served as a member of the Management Board, since 1985. He helped develop the pure press manufacturer into an internationally leading supplier of complete plants for the wood-based panels, composites and recycling industries. During this period, the company's turnover increased from 36 million euros to over 400 million Euros.

US hardwood exports to India rise



The value of US hardwood lumber exports to India topped US\$ 664,224 in the first quarter of 2019, according to the American Hardwood Export Council (AHEC). The statistics, which have been compiled from the latest data released by the United States Department of Agriculture (USDA), reveal a 273% increase in the value of exports compared to the same time period last year.

In addition, the volume of American

hardwood lumber shipped to India in the first three months of this year reached 1,168 cubic metres, increasing by 397% from the 235 cubic metres recorded in the same time period last year. The increase in exports to India is representative of the genuine interest in buying kiln-dried American hardwood lumber.

The increase is in line with a study by the World Bank, which projects that India's organised furniture industry will cross US\$ 32 billion this year. "We firmly believe that the timing is right for American hardwoods in India and that genuine opportunities for business now exist. We fully intend to keep up the momentum in India and are planning another mini-convention in Jaipur in October this year, in addition to our participation in MumbaiWood," said Mr Roderick Wiles, AHEC Regional Director.

Platinum teak wood provides a fillip to Indonesian furniture exports

Platinum teak wood, which is different from most teak as the harvest age must reach 40 years first and can be one of the mainstays of Indonesian furniture exports. Data from the Ministry of Trade of the Republic of Indonesia states that the value of Indonesia's furniture exports since 2016 continued to increase and in 2018 rose to US\$ 1.69 billion.

The platinum teak findings are expected to help furniture entrepreneurs to increase export value. Platinum teak is a type of teak tree that Witjaksono developed from the Biology Research Center of the Indonesian Institute of Sciences (LIPI) about 15 years ago.

The spread of platinum teak has existed throughout Indonesia, except Riau, Bengkulu and Papua because of the nature of the land there that is not suitable for teak plants.

Platinum research results conclude that the tree can reach a diameter of 30 cm in just 5 years so that it can be harvested as a veneer for building materials. Ordinary teak takes 10-15 years to get the wood as a frame, but this platinum teak is only in 5 years. In addition, platinum teak grows up to 5-6 meters before starting to sprout to the side so that the quality of teak wood becomes good.

Prefab homes selling out on Amazon

Buying a prefabricated home isn't a new phenomenon in the United States. Since 2013, the industry has seen solid growth of 8.6% to reach nearly US\$ 10.5 billion by 2018. But what is new is Amazon.

One home, a 172-square-foot, \$7,250 prefabricated tiny cabin, went viral, reportedly selling out quickly after manufacturer Allwood placed it on the site. It home ships free on Amazon, and the company claims it can be built in as little as 8 hours.

Others currently on the site include a 292-square-foot wooden cabin from Lillevilla for \$18,800, a 1,000-square-foot Ecohousemart Timber Home for \$40,000, and a \$5,000 113-square-foot structure also from Lillevilla.



Homag, one of the largest woodworking machinery manufacturers in the world, announced at Ligna that it would be increasing its focus on the North American prefabricated wooden home market, where it sees huge potential. The company announced a partnership with Hundegger, a German leader in machines and systems for timber log processing. The aim is to map the complete process chain in timber and prefabricated house construction.

Myanmar forest panel joins PEFC

The Myanmar Forest Certification Committee (MFCC) and PEFC International have announced the conclusion of PEFC membership for the MFCC. The MFCC is the latest and 51st national member of the PEFC Alliance said Ben Gunneberg, CEO of PEFC International.

Myanmar's for Forest certification and sustainable forest management are of special

importance in Myanmar. In the last thirty years, forest cover in Myanmar has fallen from 60% to 40%. Of recent forests were managed for economic returns rather than long-term sustainability.

MFCC launched Myanmar's third-party timber certification system in August 2018, marking phase one of the Myanmar Timber Legality Assurance System (MTLAS). -ITTO

Elsa+Ganter wins Red Dot Award



VB.839 three-arm knobs, previously awarded IF Design Award 2019 and VTD torque-control knobs have both been awarded the Red Dot Design Award in the product design category.

The jury recognized the unique design of the VB.839 three-arm knob: an ideal overlap of two triangles rotated by an angle of 8°. The particular ergonomic shape allows a more direct application of the tightening torque by the operator, resulting in maximum comfort and safety in clamping operations.

A techno-polymer body with an over moulded polyamide based techno-polymer, chemically bonded, offers a semi-glossy finish. The innovative double injection moulding process produces knobs with high resistance to stresses, impacts and with a perfectly smooth surface.

The three-lobe design of the VTD torque limiting knob fits perfectly in the operator's hand thanks to its ergonomics. A slight tapering increases the grip, maximizing the effort of the hand in rotating the knob.

In addition to its special design, the knob also features an innovative functionality: an internal system limits the applied tightening torque during clamping preserving the application surface.



Maine varsity gets largest 3D printer



Three U.S. senators, the U.S. Department of Energy, and the University of Maine have launched a major \$20 million initiative to advance 3D printing with wood. They, along with the Department of Energy's Oak Ridge National Laboratory (ORNL) announced the launch of the large-scale, bio-based additive manufacturing program with the aim is to create a new market for Maine's forest products industry.

The \$20 million investment will go toward installing the largest 3D printer in the world. Researchers will pump a mix of super-fine sawdust, plant matter, and plastic through the machine - making a variety of products such as boat hull moulds, shelters, building components, tooling for composites and wind blades. They will work with the forest products industry to print large, structurally

demanding systems, such as boats. Printing with 50 per cent wood promises to open new markets for the pulp, paper and forest products industries.

As a forest product, CNF could rival steel properties, and its successful incorporation into plastics shows great promise for a renewable feedstock suitable for additive manufacturing. The fibre is just one of many similar materials on the rise.

French tyre maker Michelin has declared that it will begin manufacturing wood-based tires, while the University of Delaware researchers have developed wood-based sticky tape.

In the picture, UMaine students and staff lift a boat roof from a mould 3D printed with a new bio-material, nano-cellulose reinforced polylactic acid.

Ligna organiser joins hands with IFMAC

Hannover-based Deutsche Messe is further expanding its portfolio of international shows by joining forces with Indonesia's leading event for woodworking machinery and components, the IFMAC (International Furniture Manufacturing Component Exhibition) show in Jakarta. The German company has been operating Ligna, the world's leading trade fair for woodworking and wood processing plant, machinery and tools, since 1975.

Its move into Indonesia will enable it to apply its extensive wood industry tradeshow expertise to one of the most dynamic regions of South-East Asia and makes IFMAC (9 to 12 October, 2019) the latest new member of its family of trade fairs. Launched in 2012, IFMAC is held in parallel with WoodMac at the Jakarta International Expo Kemayoran exhibition centre and is organised by the Indonesian tradeshow company Wakeni.

With some 56 million hectares of commercial forest, Indonesia is one of the world's biggest producers of timber and exporters of timber products. Indonesia is also the world's fifth-largest furniture exporter. Last year's IFMAC featured over 300 exhibitors from 23 countries, and attracted more than 13,000 visitors from 37 nations (www.ifmac.net).



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EVENTS CALENDAR

FITECMA

02 - 06 July 2019

Venue: Centro Costa Salguero, Buenos Aires, Argentina

The 5-day fair takes place every two years in Buenos Aires and is aimed at professionals from the industry. International exhibitors are represented at the show to present here the latest machinery, materials and processing techniques.

www.fimma.com.br

EVENTS CALENDAR

AWFS VEGAS

17 - 20 July 2019

Venue: Las Vegas Convention Centre, Las Vegas, Nevada, USA

AWFS is the guaranteed place to see new products that are being launched and gives you a complete look at what's available now to help you stay current and competitive and delivers relevant industry information and education to advance your business. It also provides valuable networking opportunities to meet with other woodworking pros.

www.awfsfair.org

WOODTECH INDIA

09-11 August 2019

Venue: The Chennai Trade Centre (Hall - 2 & 3), Chennai, India

Woodtech India a show for wood, woodworking machinery, furniture hardware & fittings, power tools, adhesives, plywood & panels, laminates, flooring, wood composites, particle boards, raw materials, coatings, veneer, sawn timber, doors & windows, raw materials, wood products and more products.

www.woodtechindia.in

KOFURN 2019

28 August - 1 September 2019

Venue: Korea International Exhibition Center, Goyang-si, South Korea

Korea International Furniture & Interior Fair is held annually to show the latest in furniture, interior and woodworking industry. Participants will introduce new products relating to furniture/interior & promotion design development and related industry trends in various segments.

www.kofurn.or.kr

SRI LANKA WOOD EXPO 2019

06-08 September 2019

Venue: Bandaranaike Memorial International Conference Hall, Colombo, Sri Lanka

Sri Lanka Wood showcases products from across the globe. It will be attended by furniture and plywood manufacturers, craftsmen carpenters, interior decorators, architects & builders and other delegates from the wood industry. It focuses on laminates, plywood and veneers, timber, woodworking machines, tools & accessories, and other segments. Exhibitors include brands like Biesse, Felder, S.C.M Group, B.S. Engineering and more.

www.srilankawood.com

FURNITURE CHINA 2019

09 - 12 September 2019

Venue: Shanghai New Int'l Expo Centre, Shanghai World Expo Exhibition & Convention Center, China

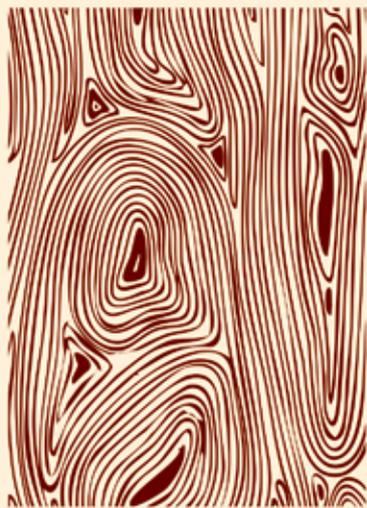
The China International Furniture Expo, better known as Furniture China, takes the lead in the industry for over two decades. As one of the world's leading B2B trade fairs, over 100,000 participants are involved in the show every year.

www.furniture-china.cn

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COMPANIES IN THIS ISSUE

Company Name	Page Nos.	Page Nos.	Company Name	Page Nos.	Page Nos.	Company Name	Page Nos.	Page Nos.
Machines & Tools			Ardis	30		Ventura International		
Altendorf	24,38		Aristo India		91	Wood Finishing		110
Barberán	31	37	Blum	72	13	Industry Services		
Biesse	32	15,61	Cleaf	72		Amazon	107	
Boere Machinefabriek	62		Continental	74		American Hardwood Export		
Caple		51,79	Crown Laminates	75		Council (AHEC)	70, 92	17
Ceña	34		Ebco		69	CIF- Shanghai 2019	84	
Dalso	36		Egger	76		Export Promotion Council for		
Dieffenbacher	38,106		Elsa + Ganter	108		Handicrafts		53
EuroTech	10		Enjoy The Wood	94		Forestry Innovation Consulting (FII)	88	IFC
Felder	24,42	9,67	EvoWood			Furniture and Fittings Skills		
Freud	42	39	FlexAFlex Hoses Industries		58	Council (FFSC)	91	
Giardina Group	46		FOP		65	Gabon Special Economic Zone (SEZ)		5
Holytek		3	Formica Group	66		IndiaWood 2020		89
Holzfraese	25		Greenlam Industries	78		Indonesian Institute of Sciences (IPI)	107	
Homag	56,107	11	Häfele	99		Insta Kitchen		110
IMA Schelling	50		Hawa	78		Institute for Building Structures and		
Jai Industries	100	21,59	Hettich	80	OBC	Structural Design (ITKI)		
Joway		83	Hexa Wood	45	45	Institute for Computational Design and		
Kalyan Industries		63	Hexion	46		Construction (ICD)		96
Levigo		IBC	Hugo Vogelsang	48		Interzum		96
Nitshaw Technologies		2	iFurn	99		Ligna		64
Perfect Machine Tools		54-55	Imos AG	48		Malaysian Timber Council (MTC)		22
SawStop	24		Jowat	43		Malaysian Wood Expo 2019 (MWE)		18, 106
Shreepal Impex (AKE)		33	Kalinga Crafts		57	MumbaiWood 2019		86
Shreepal Impex (Fe Matech)		109	Kleiberit	49	29	Myanmar Forest Certification		82
Shreepal Impex (RIEPE)		57	Maxon Doors		112	Committee (MFCC)		107
Siempelkamp	60	35	Ornare		7	Narsi		1
Toppaan Printing Co	105		Peka	81		Oak Ridge National Laboratory (ORNL)		108
Venjacob	26		Praveedh Decor	75	27	PEFC International		107
Wen Chih/ Tong Fong		71	Richfill		111	UN Alliance for Sustainable Fashion		105
Wood Master		49	Royal DSM	97		University of Maine		108
Wood-Mizer	52	47	Rushil Decor	102		University of Stuttgart		96
Woodtech Consultants		40-41	Sauerland Spanplatten (Sleek Board)		77			
Wrede Industrieholding GmbH	105		SC Freda	10				
Yow Cherng		87	Soni Polymers		62			
Materials & Products			Sound Seal	98				
Ambigence	64		Vanpro	103	87			

Editorial Advertisement

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