

WOODNEWS

Furniture and Manufacturing Technologies

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Years

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Maker of Bison Panels forays into vast Indian market **P.38**



PDA
TRADE MEDIA

FEATURE

Rise and fall of 'King' of wood preservatives **P.20**

PREVIEW

Promising new solutions at MumbaiWood **P.60**



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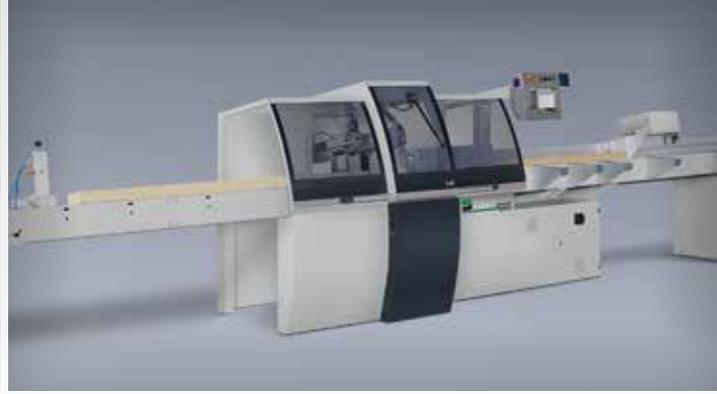
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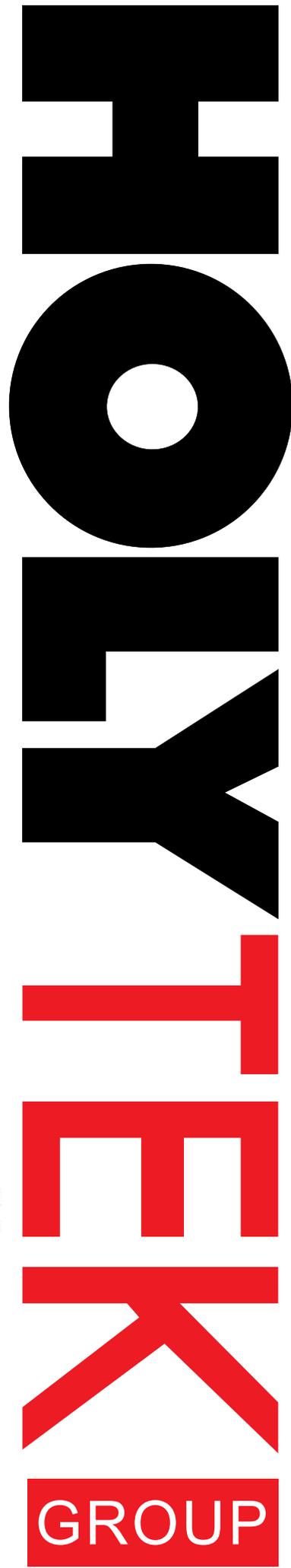
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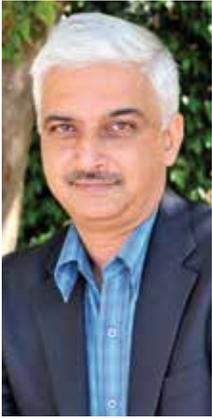
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Hej Mumbai! says IKEA

Dear Reader,

Swedish furniture giant IKEA has launched its first online store in Mumbai, offering more than 7,500 products, ranging from home furnishing solutions to electronics. Its new multi-channel approach to reach 100 million customers in India in the next 3 years is taking shape with smaller format stores in 49 cities and a big format store in Navi Mumbai. IKEA now has more than 55 suppliers with 45,000

OEMs in the country. Read more about the new company and product in our cover story.

The fourth edition of Western India's top woodworking show, MumbaiWood, is scheduled for 17-19 October, at Bombay Exhibition Centre. Hosting over 175 participants from India and other countries, the trade fair offers a holistic experience for furniture and wood-based manufacturing industries. As before, the expo will bring together the best brands, solutions and services for the woodworking and furniture manufacturing industry from across India, clearly marking it as the absolute essential trade and technology platform for manufacturers and woodworkers, architects and real estate developers. We at *WoodNews* will be there too!

FROM THE EDITOR

DHANANJAY SARDESHPANDE

direct employees and 4,00,000 people in the extended supply chain in India.

Ikea entered India with a Rs. 10,500-crore investment. In comparison, the top 12 Indian home furnishings companies (Urban Ladder, PepperFry, LivSpace and Home Lane among them) have raised a mere Rs 3,017 crore in venture capital funds so far. Other competition for IKEA comes from Reliance Retail, Future Group, Shoppers Stop and Landmark Group, all of which have room for furniture and home furnishings. Exciting times, aren't they?

In March this year NCL Industries (formerly Nagarjuna Cements) commissioned a fully automated state-of-the-art door manufacturing facility in Malkapur, near Hyderabad, with a production capacity of 1,000 doors per shift. By using cement-bonded particle board, high-density, high moisture-resistant MDF, inserting laminated veneer lumber, using top-class hardware, and offering trained personnel for installation, Duradoor might be setting a new trend among

Did you know that chromated copper arsenate (CCA), one of the best inventions in the history of wood preservation for more than 60 years, has an Indian connection? Yes, its inventor and patent-holder was the late Dr. Sonti Kamesan (1898-1952), a scientist at the Forest Research Institute in Dehradun! His formulation travelled far and wide and earned him handsome royalty. Beginning with this issue, we trace its origins and success, controversies and tribulations.

Meanwhile, a recent study on new trends in architecture reinforces the pre-eminent position of wood in the value chain – recycling and reusing is starting to be implemented extensively in architecture, and building with natural materials is back in the limelight. Among other trends pointed out are: renovation or transformation instead of demolition; achieving higher energy efficiency and employment of low emission materials; focus on local building traditions and resources; and adopting inclusive architecture by adapting to everyone's needs. We told you time and again: Wood is Good!

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.

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We look forward to hearing from you soon!

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1



American red oak charms the Brits!

Red oak is one of the world's most sustainable woods, which bodes well for John Lewis & Partners, who launched Dovetail, a brand-new collection made from American red oak, designed by Sussex-based Marque Furniture.

1 *The Dovetail collection (L) is exquisitely crafted, elegant and contemporary. Quercus rubra (R) has a slightly less pronounced figure due to the smaller rays and a more porous end grain.*

Award-winning furniture designer and maker, Ben Fowler (Marque Furniture), has for many years used the timber, attracted by its distinctive grain and warm tone. Though not red, the name comes from its leaf colour in autumn.

Nonetheless, this is a timber that, until now, has been underused in mainstream retail. The move from John Lewis to launch its first-ever American red oak range marks a shift away from Europe's preference to other woods.

"When it comes to buying wooden furniture, consumers in the UK are very particular about which timber they want to live with in their homes," says David Barrett, buyer for John Lewis. "We are always on the hunt for different or interesting timber species to include in our furniture range."

Interesting species

In Dovetail, Ben Fowler has created an exquisitely crafted, elegant, contemporary collection that showcases not only the beauty of the wood, but the essence of cabinet-making shown in the detail of the pieces.

"We helped John Lewis & Partners by supplying them with our research on American red oak, all of which explained its sustainability credentials and versatility," explains David Venables, European Director of the American Hardwood Export Council. "In Ben Fowler we have a devoted, talented fan of the material. So it was a perfect opportunity to help with this beautiful collection."

Quercus rubra is an attractive oak with distinct reddish-pink tones. The wood is similar in general appearance to white oak, but with a slightly less pronounced figure due to the smaller rays and a more porous end grain structure.

The wood is mostly straight grained with a ▶

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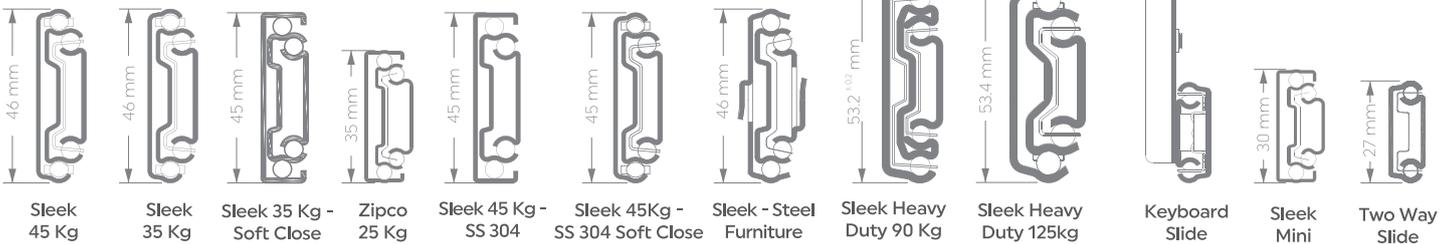
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Courtesy: The American Hardwood Export Council (www.americanhardwood.org).

2 The range features the dovetail as a structural element in its design (L). Even the handles are machined from a dovetail (R) that locks into door and drawer fronts.

coarse texture. American red oak is the most abundant species in America's hardwood forests and is used for flooring and a wide variety of furniture and building applications.

The wood is hard and heavy, with medium bending strength and stiffness and high crushing strength. It is very good for steam bending.

Strong connection

It takes just 0.57seconds to grow 1 cubic metre of American red oak, equivalent to four dining tables every minute. Red oak in American forests is expanding at such a rate that even when harvesting is taken into account, its volume is increasing equivalent to 20 double-decker buses every hour!

No single joint or detail more universally characterises joinery than a dovetail. Designed to be a stronger connection detail in a time when wooden cabinets had to stay together using the ingenuity of the mechanical joints, the dovetail is as handsome as it is functional.

The range features this instantly recognised, classic joint as a structural element in its design. Handles are machined from a dovetail that locks into door and drawer fronts, while vertical side columns form elegant end-grain detail on the cabinet tops, all producing a striking detail.

The character of Dovetail comes from its interesting detailing and practical, yet beautiful design, reflecting perfectly Marque Furniture's design ethos. With Ben Fowler at

its helm, Marque Furniture is driven by expert craftsmanship and a deep passion for wood and sustainability.

Fowler, who has produced ranges for other leading retailers including Marks & Spencer and Ercol, alongside some extraordinary commissions, says, "We're delighted to have designed John Lewis's first range in American red oak. I'm certain the Brits will fall in love with it too."

Skilled design

Dovetail will comprise an adaptable collection of cabinets and chests of drawers in three sizes, alongside a sideboard. Developed to mix and match with different door options, the collection provides many combinations of storage from a small range of furniture.

Marque Furniture is a furniture design and manufacturing company whose small collective of highly skilled furniture designers – most of whom are highly regarded, award winners in their own right – have one thing in common: they are makers who have learned their trade at the bench.

Their design approach is informed by their exceptional skills as craftsmen, joiners and cabinet makers and a deep understating of the creative process, sustainability and empathy for wood and its natural beauty.

Marque Furniture's design team also includes the multi award-winning Simon Pengelly, John Weaver and Nell Beal. (www.marquefurniture.com).

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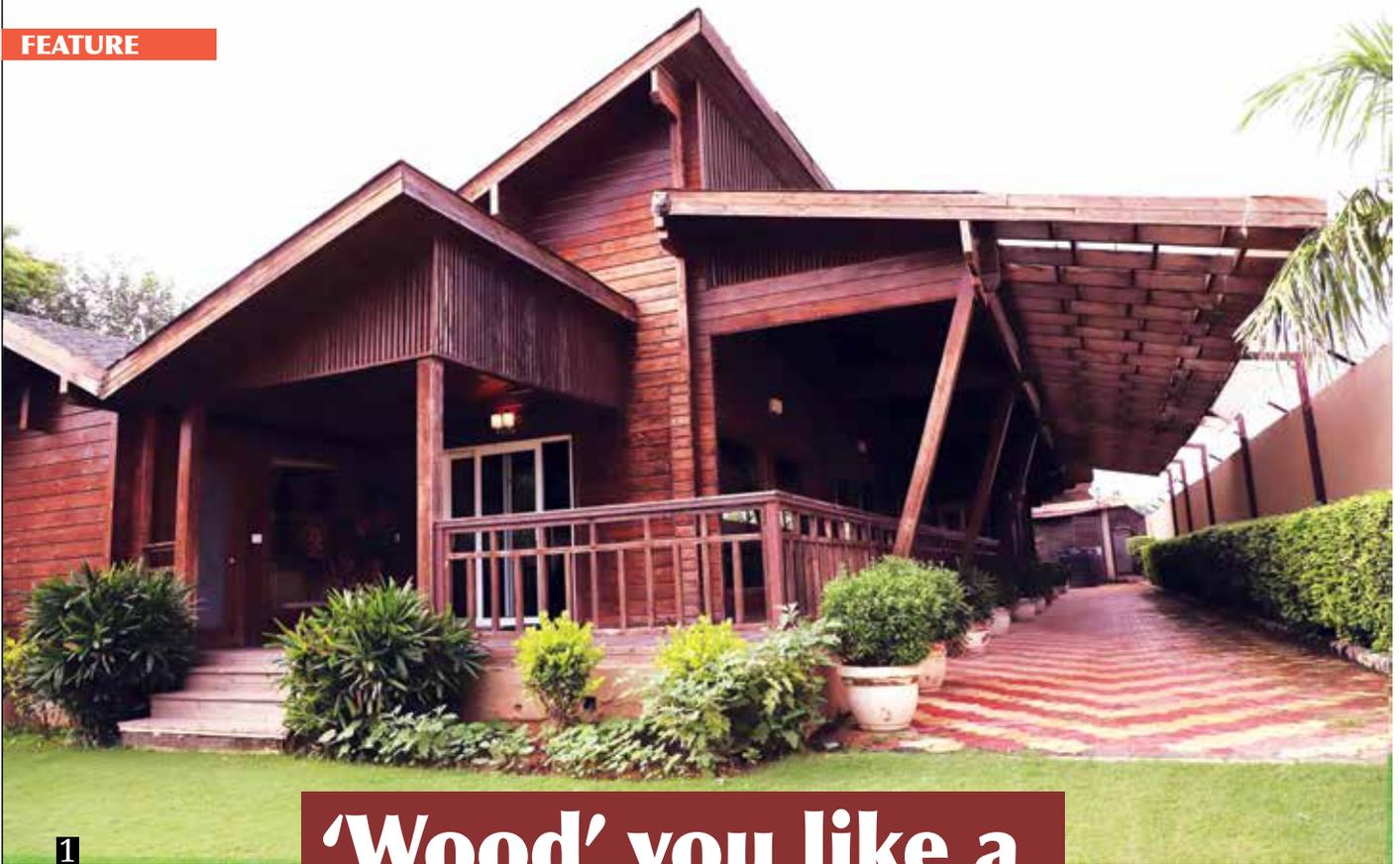
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1

'Wood' you like a pre-fab home?

Having re-introduced the concept of wooden residential structures in India in the year 2006, the Delhi-based Woodbarn India is drawing the focus of customers' and architects away from conventional materials like steel, brick and cement, to charming and eco-friendly wooden homes.

1 *Kohinoor Farm in Chattarpur, New Delhi.*

In a country like India, where contemporary wooden construction wasn't accepted earlier, the company, led by Mr Sanjay Sharma, has created a niche for itself in the wooden housing segment.

2 *Bardiha Lake View Resort, Chhattisgarh.*

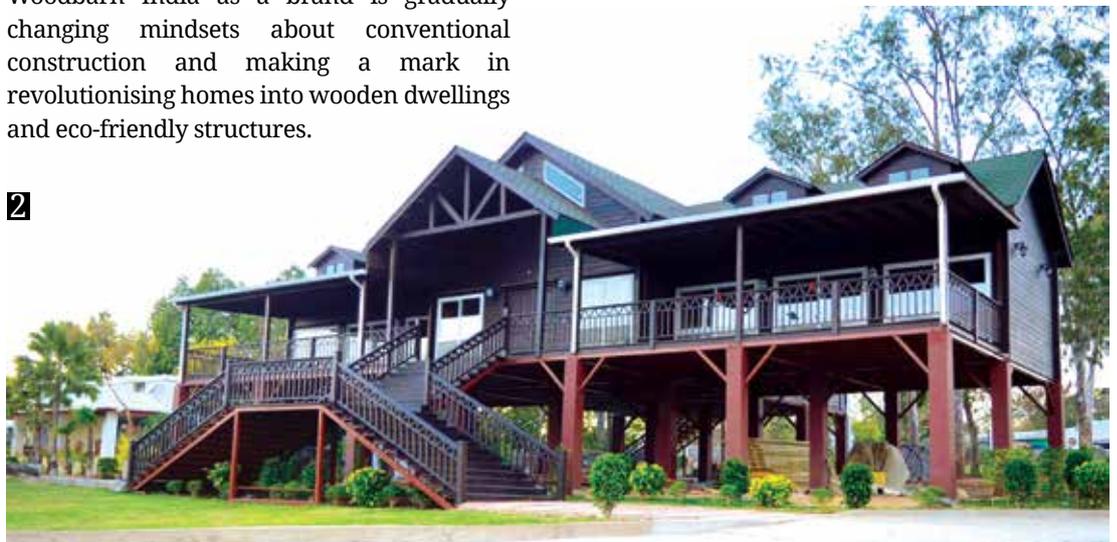
Woodbarn India as a brand is gradually changing mindsets about conventional construction and making a mark in revolutionising homes into wooden dwellings and eco-friendly structures.

To source wood sustainably, the company has collaborated with some of the best wood suppliers across the world. The company uses high-quality SPF (Spruce Pine Fir) lumber sourced from sustainably managed and protected forests of Canada for key turning wood solutions.

Changing dynamics

Woodbarn India is one of the pioneers in wooden constructions in India and provides versatile solutions for pre-fabricated wooden homes and structures. With this concept, ▶

2



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– Mr Sanjay Sharma, Founder, Woodbarn India.

3



3 A gazebo at another resort in Himachal Pradesh.

Sanjay hopes to change the dynamics of the architecture and construction industry and aims to be the country's most preferred name in wooden pre-fabricated structures.

4 Woodbarn India uses high-quality lumber sourced from sustainably managed and protected forests of Canada.

The idea of pre-fabricated wood structures hit Sanjay in 2005 when he was travelling abroad and met a woodworker who mentioned a wooden house near a river.

At an exhibition abroad, he met with a company manufacturing wood houses and was extremely impressed by the concept. This eventually led him to set up Woodbarn India.

Sanjay is ably assisted by Mr Manish Singh, an architect and a post-graduate in design from the National Institute of Design, Ahmedabad. Sanjay emphasises that they are not just a

commercial venture. "We are a brand that interacts with the environment and its resources in the most sustainable manner to give world-class living solutions to the country," he says.

Brand recognition

Since its inception, the company has delivered more than 600 structures across the country. The projects include wooden homes, eco-log huts, vacation homes, farm houses, resorts, gazebos, terraces and tree-houses.

Some of the notable projects include those executed for tourism departments of Uttarakhand, Chhattisgarh, Maharashtra and Jammu & Kashmir, apart from hospitality projects for ITC and Club Mahindra.

Other clients of Barnwood India include the Himachal Pradesh Cricket Association and Infosys. The structures are principally approved by Hindustan Prefab Ltd., a Government of India enterprise.

To understand the ideals of environmental sustainability and business dynamics a case study was carried out by the Harvard Business Review in 2015, titled 'Woodbarn India: Trying to Break the Concrete Mindset'. Woodbarn India is a member of the Indian Green Building Council (IGBC) and has won several awards.

4



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Rise and fall of the 'King' of wood preservatives

Chromated copper arsenate (CCA) is one of the best inventions in the history of wood preservation, and India is proud to have given the world a product that ruled supreme for over 60 years. This article is a tribute to its inventor, Dr. Sonti Kamesam (1898-1952).

*After its discovery as ASCU, compounds of chromium, copper and arsenic in various proportions were designated as CCA and became the first runner to impregnate timber and other wood products, especially those intended for outdoor use and in ground contact, in order to protect them from attack by microbes and insects. Like other copper-based wood preservatives, it imparts a greenish tint to treated timber; but this does not adversely affect its texture and grain, writes **Satish Kumar**.*

While wood preservation can be traced as far back as Biblical times, our ancestors relied mostly on naturally durable woods or use of natural products to enhance durability. It is believed that during the times of Alexander The Great (350 BC), bridges were built using wood soaked in olive oil.

Since olive oil has hardly any toxic components, and is water repellent, it helped keep wood dry, an important and non-toxic method for protecting wood against decay. The use of mercuric chloride and arsenic oxides started in the 1500s to control termites.

While use of mercury was soon discontinued, because of its high toxicity to mammals, use of arsenic flourished in many formulations. CCA

had its birth as ASCU in India, at the Forest Research Institute (FRI) in Dehradun in April 1933.

Although water-based, CCA becomes totally un-leachable after reaction with wood. It offered clean appearance to treated wood and posed no problems in painting or application of any other finish to the treated wood surface.

Besides, it enhanced dimensional stability of wood, reducing its hygroscopic behaviour (*Kumar and Jain, 1976*) and improved performance against fire (*Jain, 1953*). None of the earlier water based formulations possessed such high levels of leach resistance and overall performance against wood destroying organisms.

1 *This wooden stake eventually degrade in the soil after a few years of pesticide leaching by rain, and perhaps because of the adaptation process (natural selection) of bacteria and fungi boring.*

India connection

CCA is thus one of the greatest inventions in the history of wood preservation to date, and India is proud to have given the world this formulation which ushered in a new concept of all round protection of wood almost in any application facing different types of biological as well as terrestrial factors.

Its world-wide use under different local and international names – such as ASCU, Green Salts, Tanalith-C, Wollman Salts and Boliden K-33 – saved billions of cubic metres of wood from early bio-degradation, saving material and labour costs, and avoiding disruption of services.

Having a modest beginning in the 1940s, it topped the usage charts for over 60 years and is still not totally written off – it has neither a dignified substitute in performance, nor a real competitor in price!

CCA's first travel abroad was to the US, but soon became popular all over the world. More than 20 countries created their own standard specifications for this formulation. Koppers, Hicksons, CSI, Osmose and Wollman were some of the few international giants who commercially manufactured CCA and met its ever-increasing demand around the world.

At home, ASCU became synonym with wood preservation as Dalda was (at one time) synonymous with any hydrogenated vegetable cooking oil. Many engineers and architects still consider ASCU as the only chemical formulation for enhanced performance of wood and bamboo.

Development history

Kamesam, a scientist with the then Imperial Forest Research Institute while on deputation to Germany, initiated studies in Dr. R. Faulk's mycological laboratories at HannMunden, to develop a more potent wood preservative especially suited to tropical countries like India, where borers and termites were considered major destroyers of wood and bamboo.

Coal tar creosote and penta-chlophenol were well established wood preservatives at that time, but with several limitations such as colour, smell and oily looks. Several water-borne formulations did exist, but tropical conditions of India needed something which could save wood from borers and termites.

Several water borne multi-salt formulations – including the partly fixing acid-copper-chrome (ACC or Celcure) developed by Dr. Gilbert Gunn of Scotland existed, but all these lacked broad spectrum efficacy and were leach-prone when used in open and ground contact.

Kamesam's studies resulted in a composition which comprised of $As_2O_5 \cdot 2H_2O$: $K_2Cr_2O_7$ in the ratio 1:1.25 (*Popham and Kamesam, 1932*), which became known as 'Falkamesam' wood preservative (*Dr. Falck 1933*).

Although his name forms a part of the formulation, Kamesam probably did not get full credit for this development as his name is not reported in the patent.

Moreover, Kamesam mentioned in his publication that India was free to use the patent, indicating his exclusion from authorship (*Popham and Kamesam, 1932*).

According to Mr V.R. Sonti, Kamesam's elder son, 'Falkamesam' consisted of a mixture of $As_2O_5 \cdot 2H_2O$ and $CuSO_4 \cdot 5H_2O$. Although quite effective against fungi and termites, 'Falkamesam' failed to fix in wood and was found unsuitable for open or ground contact use.

On his return to India, Kamesam continued work on this formulation at the institute in Dehradun. Taking a cue from a mordant used for fixing dyes in cotton, he came out with a fixed-type wood preservative, ASCU. The addition of potassium dichromate provided the crucial fixation support, making water insoluble complexes of Copper/Arsenic with wood components.

Sonti's version seems unlikely as fixative properties of chromium salts were already

2 Sketch of Dr Sonti Kamesan (L), and the patent issued by the Government of India (R) to him at the Forest Research Institute, Dehradun, in April 1933.



known; and Dr. Faulk being in Germany must be aware of this. Dr. Gunn probably used potassium dichromate in ACC, as in various other formulations, to reduce the corrosive nature of highly acidic copper sulphate.

Thus $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ was probably added to 'Falkamesam' formulation to improve its spectrum and especially control arsenic-resistant fungi, which were likely to metabolize arsenic to toxic arsine gas.

The fixation provided by complexing Cu, As and Cr with wood components might be thus accidental – Kamesam was an engineer by academic qualifications and had very little chemistry background.

Early prejudices

CCA/ASCU became the first broad-spectrum, water-borne wood preservative, which got fixed into wood to the extent of 98%. ASCU had its enemies from day one, which is reflected in its interesting history since its development in 1933.

Kamesam's British bosses were unable to accept this distinction for an Indian scientist. The FRI refused to go for a patent, despite the fact that the research was carried out with government money and the Government of India was the rightful owner of the invention.

Kamesam was permitted to patent the invention in his name (Indian Patent 19859, 27 April, 1933). Mr. H. Trotter, Kamesam's boss at FRI, had recommended closure of the wood preservation section, to deter Kamesam from returning to the FRI after his tenure in Germany, citing abundant availability of durable wood species in India, making preservative treatments redundant and unnecessary.

Trotter ordered field trials on the performance of ASCU by an independent company, Calendar & Co. of Kanpur. Several hundred treated wooden poles were placed under transmission lines, which started failing after 3 years. The official publication "ASCU: A

Wood Preservative", *Indian Forest Records (New Series), Utilization Vol.1, No.6*" was withdrawn!

This attracted a lot of criticism in editorials of Current Science Journal published in India (Anon., 1940). Kamesam, however, confident of his findings, took up the issue with the government, resulting in the constitution of a scientific inquiry committee with Sir C.V. Raman as its chairman.

The Raman Committee found out that the Kanpur company did not use the ASCU formulation, but used a green dye treatment to fake ASCU colour. To camouflage the entire episode, Mr. L. Mason, President of FRI, had to issue an explanatory note regarding withdrawal of ASCU publication, asserting that FRI had not condemned ASCU, but had found some shortcomings regarding training of operators and fixing treatment norms for adequate penetration levels (Mason, 1940).

Indian response

Kamesam started his own company, 'ASCU Wood Products', with headquarters in Bangalore and started manufacturing the preservative as well as supplying ASCU-treated wood and put up several timber structures using treated wood and bamboo.

However, it was too early for the Indian wood industry to realise the importance of treating wood with preservatives. At that time, Indian forests were flush with supplies of durable species like teak, sal, deodar, rosewood, etc. No one was interested in using alternate wood species such as 'Kokat' (jungle wood).

Traditional knowledge based on myths – such as harvesting wood in Krishna-Paksha (waning moon phase), water leaching and exposing wood to kitchen smoke for several months prior to putting to actual use were other factors limiting the need for scientific seasoning and preservation of wood.

The largest wood user in the country was the Indian Railways, for laying new rail tracks. They used mostly durable species like teak, deodar and sal for railway sleepers. Four pressure creosoting plants were established at Naharkatya (Assam), Olvakot (Madras Presidency), Bareilly (United Provinces) and Dhilwan (Punjab).

CCA was included in Indian Standard 401 'Code of Practice for Preservation of Timber', published as a tentative standard in 1954.

However, as supplies of durable species dwindled over time and the rising demand for

3 A CCA-treated Chir (Pine) hut constructed in 1935 (L) is in fairly good condition (R) even in 2019.



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secondary wood species found significant application in defence stores, mines and construction, scientific protection of wood remained on the back burner.

By 1979, only 70 pressure treatment plants – with a combined treating capacity of 1.7 million cubic metres – were in existence. The requirement, however, stood at 7 million cubic metres of treated wood; and the volume of wood actually treated was a mere 13% of capacity (Kumar, 1979).

Journey abroad

Kamesam got his formulation patented in Great Britain (BP 404855) in 1934, which mentions an optimum ratio of different salts:

As₂O₅.2H₂O: CuSO₄.5H₂O: K₂Cr₂O₇ at 1:3:4.5. The Indian standard specifications IS-401, issued in 1954 and IS 10013, Part II mention the ratio as 1:3:4. Another patent (BP 485109) was granted in 1938.

US Patent 2106978 and Canadian Patent 353531 were awarded to Kamesam in 1938, and ASCU came to be known as "Green Salt". The substitution of K₂Cr₂O₇ by Na₂Cr₂O₇.2H₂O (a cheaper substitute) resulted in a formulation called "Green Salts-S".

Although ASCU was still facing controversies in India due to withdrawal of official publication by FRI, purchase of patent rights for manufacture and use of ASCU by the American giant Bell Telephone for US\$ 80,000 (a staggering sum in 1939) set the wheel in right direction for Kamesam.

The American Trade Consul, while handing over the check on behalf of Bell Telephone Co. remarked in disbelief that it was for the first time in commercial history that the US was buying a patent from an Indian technologist. Kamesam became a celebrity as well as a rich person!

ASCU was recommended for treatment of poles by the American Wood Preserver's Association in 1942 (Lumsden and Hearn, 1942). The formulation found large-scale application not only in electrical and telecommunication transmission wooden poles but also in treating timber for cooling towers, wooden props for mines, timber in marine applications and wooden piles for housing.

In 1953, Hicksons of the UK bought patent rights for ASCU on royalty basis for the British Commonwealth and Dominions and started its marketing it as 'Tanalith'. A comprehensive account on the performance of ASCU wood preservative, based on extensive laboratory and field trials, was published in 1956 (Naraynamurthi and Puroshotham, 1956).

A wooden hut constructed in 1935 using ASCU-treated non-durable Chir (*Pinus roxburghii*) is an important mention in this report and its survival till date speaks volumes about this wonderful preservative.

(To be continued)

– The author is Wood Advisor to American Connexion. He retired as Scientist SG at the Forest Research Institute, Dehradun (satishdun.1940@gmail.com).



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Cork: from wood waste to hi-tech flooring

1 Portuguese cork parquet manufacturers have evolved global sales networks.

With its Cork Oak forests, Portugal is undisputedly the centre of the global cork industry. In recent years, floor coverings have undergone a gradual change, with their robustness, feel and appearance all evolving.

Manufacturers of pre-finished cork parquet have quietly capitalised on the trend toward LVT (luxury vinyl tile) in the floor covering industry, with cork largely being replaced by vinyl as a covering layer. No other country in Europe is home to as many manufacturers of LVT products as Portugal.

Portugal has been a major manufacturer of cork flooring for some 60 years. As glued parquet flooring, it was sold in the standard dimensions of 12"x12" and 24"x12". In the 1980s, Germany became more aware of the importance of protecting the environment, with the Green Party making up the government for the first time in the first state parliaments in Germany.

Cork appeared to be an ideal product made from renewable resources and was marketed as the "ecological floor covering". The standard 30x30-cm cork tile was manufactured from by-products from the bottle cork industry and low-quality cork. Cork, therefore, became the dominant floor covering in German households in the 1980s.

Stabilising floor

However, it was not easy to lay the flooring. The substrate had to be level, and adhesive was applied to the entire underside of the cork tiles, which were then sanded and sealed

– clearly a task for an interior contractor, rather than a home handyman.

In 1990, the Amorim Group began gluing the cork substrate onto MDF, creating a new product. The cork stabilising layer was used to both dampen impact sound and level out the floor in case of slight unevenness. The standard tongue-and-groove profile was added to the MDF middle layer.

It was possible to lay floating flooring of this type. The process simply involved gluing the tongue-and-groove joint with PVA glue. This enabled even home handymen to lay the floor, allowing manufacturers to tap into high-volume markets.

In the 1990s, more and more pre-finished cork parquet manufacturers were established and, just as in the parquet and laminate industry, the click-lock joint replaced the tongue-and-groove joint, making the floor laying process even easier.

However, there was also a shift in consumer behaviour. The brown colour of typical cork floor coverings became a less popular choice; so investments were made in this early period that were aimed at developing elaborate colouring and coating technology.

In the last few years, digital printing technology has arrived, enabling the creation of wood and stone patterns as well as designs conceived from scratch. But putting these designs onto the floor covering was made difficult by the porous surface, elasticity and hygroscopic nature of cork. ▶

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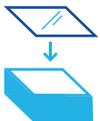
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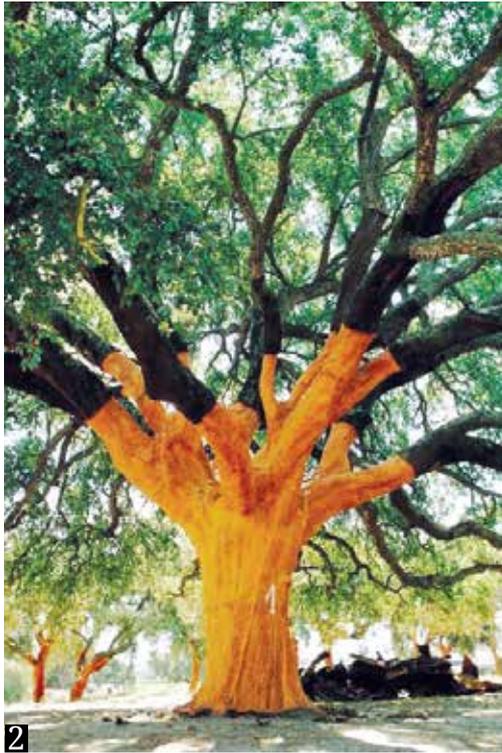


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5009
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2

2 Blessed with ideal conditions for growth of Cork Oak, Portugal has been a major manufacturer of flooring for 60 years.

People also started to expect the paint layer of the flooring to be more resistant to scratches and wear, resulting in major investments being made. At the same time, the paint had to be flexible to allow for the elasticity of the cork.

But, with commercial surfaces in particular, it was extremely difficult to make any headway. For a long time, a transparent vinyl film was used with paint applied following adhesion. This solution did not quite fit with the “environment-friendly” image of cork flooring, but was the only way of ensuring that the floor covering did not wear as a result of heavy footfall.

New products

One person who has had a lasting effect on this development in the last 50 years is Mr Herbert Brehm, a representative at Homag sales partner, ProjectA. Originally from Swabia, south-western Germany, he has lived in Portugal for over 50 years and continues to be a key contact person when it comes to the development of cork flooring.

3 Coming from renewable resources, cork is marketed as a “green” floor covering.

Back when ideas in Portugal were quite different to those in Europe, Brehm took his experience of the wood industry to Portugal after studying at Rosenheim University. His contribution was felt within the Portuguese cork industry.

Brehm continues to travel with his cork customers through Europe to a wide range of machinery manufacturers, allowing him to

make an active contribution in the development of new products.

In Portugal today, there are a handful of pre-finished cork parquet manufacturers. The floor production industry in Portugal is one of small and medium-sized businesses — even when taking into account the cork group Amorim, which dominates the market.

For the final production stage of profiling, every single manufacturer in Portugal uses machines from Homag. Through close collaboration with Brehm, and by continuously developing and fine-tuning machine technology for the niche product (cork/LVT) Homag has so far supplied Portugal with 15 lines for profiling pre-finished cork/LVT parquet.

LVT-cork combination

In a country otherwise poor in natural resources with a small domestic market, isolated on the edge of Europe, the Portuguese have relied on trade and export for hundreds of years.

None of the Portuguese pre-finished cork parquet manufacturers has its own MDF production line. Their core expertise lies in cork, and they have all evolved to become flooring manufacturers with global sales networks.

For a long time, Germany was the prime market for pre-finished cork parquet and still maintains an important position today. Companies entered new markets, but despite developments in new surface technologies and visual designs, it was not possible to prevent a slight downturn in the industry.

The conventional cork surface was simply not as trendy as it once had been. As a result, the small and medium-size companies, including inventors and product developers, were dependent on the continued development of pre-finished cork parquet.



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Together with a prefinished cork parquet manufacturer from South Tyrol – who is now based in Switzerland – the companies therefore seized on the LVT trend long before other companies in Europe.

Without making huge investments in production systems, the companies replaced the uppermost layer of the pre-finished cork parquet with vinyl – mostly imported from Asia, the birthplace of the LVT floor – or additionally applied vinyl to the top layer of the parquet.

This created a new, quieter floor covering with the same characteristics in terms of surface feel, texture and design variety as the newly emerging LVT floorings, along with the familiar properties of a cork floor. Thanks to the transparent vinyl protective film used in commercial applications for prefinished cork parquet products, this technology had already existed for many years.

This brought about another boom in sales. Today, vinyl surfaces, as opposed to cork surfaces, account for over 30% of some manufacturers' sales. Nevertheless, at least one layer of cork is always present somewhere

in this multi-layered modular floor covering.

New systems

The systems had to be adapted and optimised for the new surfaces – a process that took place in close collaboration with the machine manufacturer Homag. Compared to multi-layered products made entirely of vinyl, the pre-finished vinyl-cork parquet has a significantly more stable “click joint” that does not fail to work when exposed to sunlight.

If the product contains the base material HDF, then it does have one disadvantage: it is not suitable for use in damp areas. In contrast to most European laminate flooring manufacturers, whose flooring production is intended mainly to support sales of their own HDF boards, the Portuguese manufacturers are not bound to this base material.

Manufacturers are currently working hard on developing alternative water-tight base materials. But even in the new products that are currently under development, cork is one natural product that will undoubtedly continue to play a central role in the product design.

4

Do's & Don'ts for cork floors

Regularly sweep/dust the cork floor with soft broom

Use soft-sponge mop with warm water, minimal dish soap

Damp mop with a dash of vinegar once a week

Refurbish cork floor using polyurethane every 5 years

Use floor mats to prevent build-up of moisture

Keep away from direct sunlight against fading

Minimise scratches by avoiding high-heel footwear

Never drag furniture across the floor

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Value-addition is Malaysia's USP



1

Malaysia produces a wide range of value-added timber products such as furniture, mouldings, frames and builders' joinery and carpentry (BJC). The total export value for these products in 2018 was RM 9.8 billion, representing about 44% of Malaysia's total export value of RM 22.3 billion for all timber products last year.

Up to May 2019, RM 4.2 billion worth of these products have been exported, according to Mr Richard Yu, Chief Executive Officer of the Malaysian Timber Council (MTC).

"Ever since Malaysian carpenters and builders began to shape and use wood, the furniture, mouldings and BJC industries have grown by leaps and bounds. Today, a wide range of quality value-added products such as wood-based furniture, cornices, wainscoting, dado rails, doors and frames, windows and frames, flooring, decking, picture frames and laminated beams are produced in Malaysia and exported worldwide," he notes.

Malaysian wood-based furniture is much sought after by home, resort and property project owners around the world. The use of high quality materials and timber species such as Rubberwood, Balau, Kembang Semangkok, Nyatoh, Dark Red Meranti, Acacia and imported species – along with the application of hi-tech manufacturing methods

and designs – ensure the acceptance and admiration of Malaysian furniture in more than 160 countries worldwide.

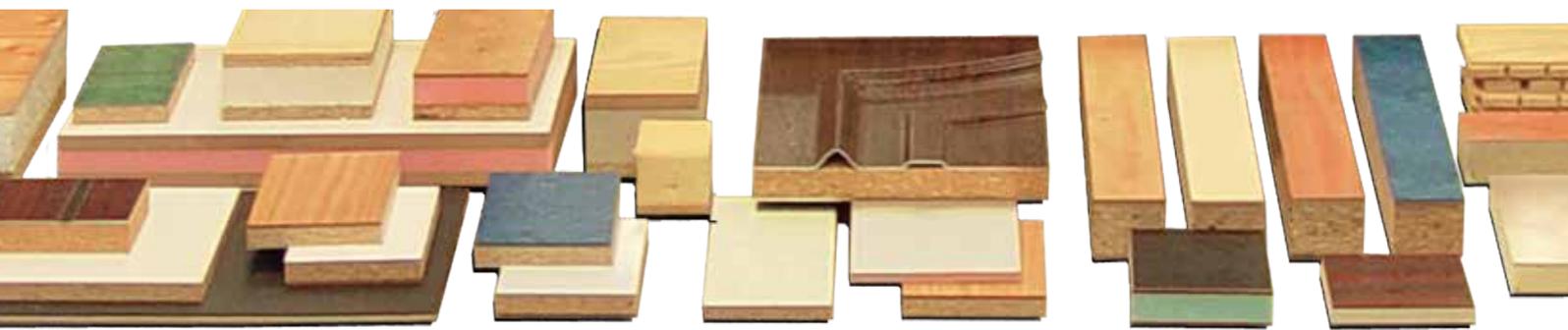
Moulding exports

By utilising the latest advances in technology, the industry has expanded its capacity to cater for both small batch orders as well as high volume serial production. To enhance product value, manufacturers are moving towards originality of ideas and creative designs, ▶

1 Premium flooring made from Merbau at a Proton showroom in Malaysia.

Wood Expo in November

Malaysian wood-based furniture and joinery producers are among the exhibitors who will be showcasing their products at the Malaysian Wood Expo, taking place at the Putra World Trade Centre in Kuala Lumpur from 19 to 21 November, 2019. Come and meet them for your source of these high quality value-added timber products.



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2

2 Exported to the US, China, West Asia and Europe, Malaysian picture frames are of the highest quality.

which have further improved the marketability of Malaysian-made furniture.

Malaysian timber mouldings have gained acclaim around the world, especially in Japan, Australia, the US and Europe. Various items are made according to buyers' specifications and produced from timber species such as Bintangor, Jelutong, Keruing, Meranti, Sepetir, Merbau, Nyatoh and Rubberwood.

3 Luxury holiday resorts throughout the world use decking made of Malaysian tropical timbers.

Decorative mouldings – among them architraves, cornices, base boards, aprons, dowels, jambs, louvers, wall claddings and skirtings – are the premier choices of architects, interior designers and discerning artisans who appreciate uncompromising beauty and quality.

4 Malaysian furniture from Rubberwood, Balau, Kembang Semangkok, Nyatoh, Dark Red Meranti and Acacia is exported to more than 160 countries.

Malaysian timber mouldings are machined to specifications using the latest technology to ensure superior finish and quality. Some manufacturers provide additional services such as veneer-wrapping and lamination, while others have experienced craftsmen and qualified designers to help create customised designs.



3

Hardwood flooring

Malaysian hardwood flooring is exported to highly discerning markets such as the European Union, the US, Australia and Japan. Buyers may choose between conventional solid strip and parquet flooring, or engineered flooring.

Timbers such as Balau, Belian, Giam, Chengal, Merbau and Dark Red Meranti are the best hardwoods for decking products because of their durability, strength and attractive grain.

Testament to this are the numerous world-class holiday resorts throughout the world – such as in the Maldives, Seychelles, Mauritius and Malaysia – where decking made of Malaysian tropical timbers add to their warmth and beauty.



4

Malaysian picture frame manufacturers, already adept at exporting high quality picture frames worldwide, are capable of meeting your every need including customised picture frames in small or large batches.

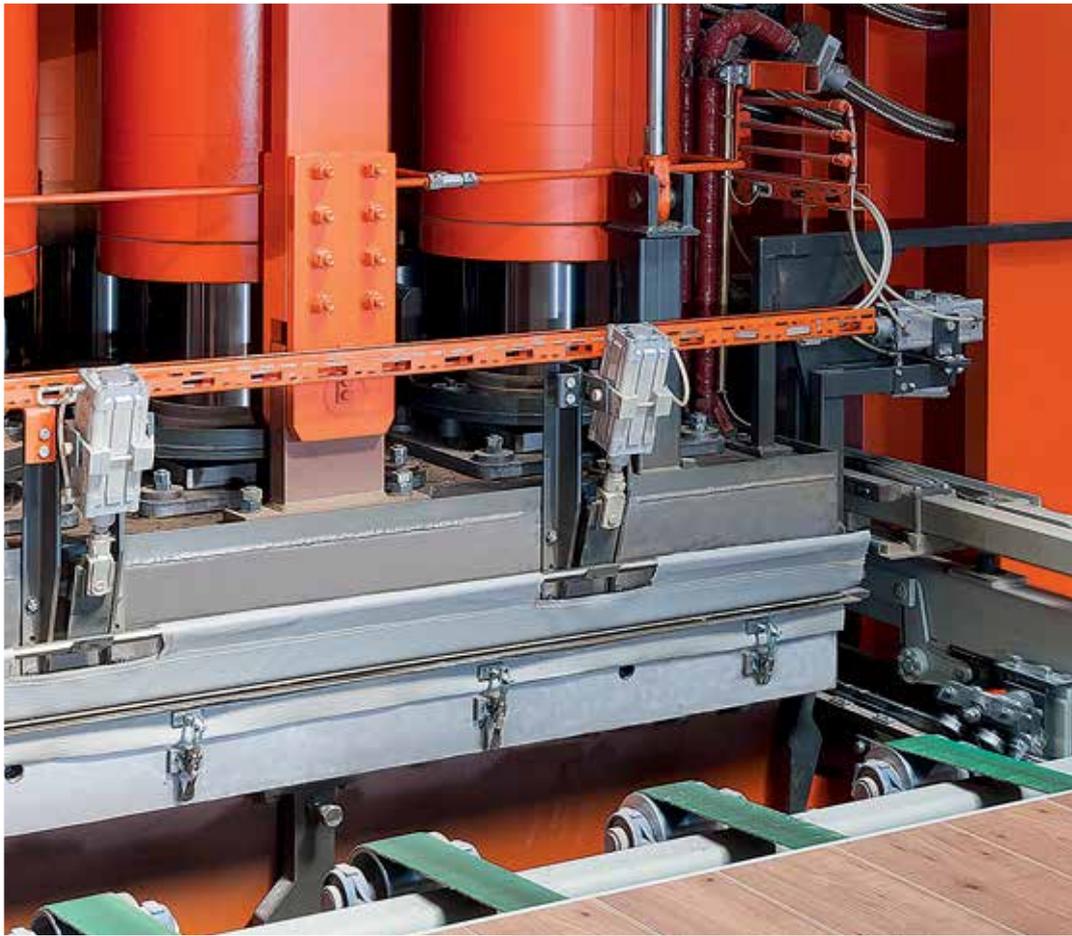
Exported internationally including to the US, China, West Asia and Europe, Malaysian picture frames are of the highest quality. They are manufactured with the latest technology at every stage of production.

Stringent quality control is the norm, and raw materials are carefully selected from a variety of species such as Jelutong, Penarahan, Pulai, Ramin, White Meranti and Mempisang for their stability.

Buyers can be assured that the wooden furniture, mouldings and BJC products they import from Malaysia are backed by years of research and development, strict regulations and strong support from established government institutions, such as the Ministry of Primary Industries, MTC, Malaysian Timber Industry Board, Forestry Department and Forest Research Institute of Malaysia.

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1



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*The maker of Bison Panels, NCL Industries (formerly Nagarjuna Cements), has entered the booming market for doors with a new, Rs. 55-crore factory near Hyderabad. **Mr K. Ravi**, Managing Director, told Dhananjay Sardeshpande why induction of new technology is essential to India.*

When an established giant in construction materials in the country enters the market with factory-made doors, it is imperative to take note. The Rs 2,000-crore, Hyderabad-based NCL Group has been a leader in building materials segment for decades – its bouquet extends from cement, ready-mix concrete, cement-bonded particle board, pre-fabricated shelters, uPVC windows and doors, pre-painted steel windows, wall putties and textures, emulsion paints and more.

In March this year, NCL Industries commissioned a fully automated, state-of-the-art door manufacturing facility at a cost of Rs 55 crore, spread over 2 lakh square feet in Malkapur, near Hyderabad. It has a production capacity of 1,000 doors per (8-hour) shift.

Branded Duradoor, its precision-engineered doors come in thousands of options to choose from. Installation is included as part of the base price and is done by trained and certified installation teams using modern tools.

Why did the company venture into the doors sector? According to Mr K. Ravi, Managing Director of NCL Industries, as India seeks to house its billion-plus citizens in cities, towns and villages, “doors are a necessity, not a luxury”.

In the past, furniture manufacturing, including doors and windows, was reserved for the small-scale industry and medium enterprises, he noted. “But the demand is huge, and there is a scarcity of carpenters. Moreover, carpenters cannot meet the

1 Among the highlights of Duradoor are pest- and moisture-resistant materials, aesthetic accessories and finishes, and beautifully integrated architraves.

demand in terms of quality, consistency and volumes,” Ravi added.

So precision-engineered, factory-made doors are a natural outcome of the situation – and costs go down as production scales up. He estimates the current doors market size in India at Rs 15,000 crore, and growing at a healthy rate.

Ravi also dismisses the “slump” in the housing sector – new construction activity nearing a halt, or a surplus inventory of unsold properties – as a temporary phase. “We need houses by the millions, both in the urban and rural landscapes of modern India,” he insists.

Company DNA

“The second reason is that innovation is part of the company’s DNA. Since its inception, NCL Industries has brought in new products, in collaboration with top technology providers from around the world,” Ravi says, noting how it progressed from ordinary cement to specialised products.

Another big business success story is NCL Industries’ collaboration with Bison Werke, where the German entity provided technology and production machinery to manufacture cement-bonded particle boards, a first in India.

Bison Panels has been a runaway success since its inception 30 years ago because of the boards’ strength, termite- and weather-proof properties, and advantages of being fire-retardant and offering good sound insulation.

NCL Alltek provides acrylic spray plasters, emulsion paints, plaster and putties for the construction industry. It is a collaboration with the Swedish company, International Coating Products, and counts among its clients the Army Welfare Housing Organisation, Larsen & Toubro and GMR International Airports.

Before this, the company imported Italian technology to set up NCL Seccolor, to manufacture pre-painted and powder-coated galvanised iron doors, windows and partitions. Among its clients are Ashok Leyland, BSNL, the Indian Air Force, Reserve Bank of India, auto-maker Toyota and the Oil and Natural Gas Commission.

Its joint venture with Veka of Germany has resulted in the manufacture of 24,000 tonnes of uPVC profiles for doors and windows that go into more than 3 lakh new homes each year. The client list is equally impressive: Godrej Properties, Purvankara, Mahindra

Duradoor is looking for...

- Suppliers of high-density (more than 900 kg/m³), high moisture-resistant wood fibre
- International standard door hardware and accessories in India
- Indian suppliers for PVC foils, edge bands, honeycomb and tubular infills for doors
- Door installation professionals for teams across India
- Machine operators, factory supervisors and managers
- Channel partners across India with showroom space

Lifespaces and Shriram Properties, among a host of others.

New technology

Duradoor products are made from Bison cement-bonded particle boards for exterior uses, and high-density high moisture-resistant (HDHMR) imported wood fibre boards for interior spaces. Honeycomb infill is used where specified.

What is also new is the use of laminated veneer lumber (LVL) – an engineered product made from multiple layers of wood stuck together – to add enormous strength for installation of hinges, locks, stoppers and tower bolts in each door.

Hardware, lock body and hinge holes are pre-cut at the factory using precision CNC machines.

The doors have protective PVC foil coating; use hardware from Germany (Hettich, Hafele and others); and PUR adhesives from the same country (Kleiberit and HB Fuller). They also come with magnetic locking systems and casing wicks/beading to prevent flow of dust, sound and temperature.

All this is thanks to Duradoor’s collaboration with AGT (Advanced Technology in Wood Industry), a Turkish manufacturer and innovator of wood products since 1984.

AGT exports flooring, doors, wall panels, laminated MDF and profiles to more than 60 ▶



2



2 *The entire production lines (L) for cutting, lamination and door assembly are fully automated; and the profiling section (R) includes CNC machines.*

countries. The company's constant research and development in production techniques, using FSC-certified wood, has resulted in 327 product-based trademarks and 19 patents.

"We had a long-running relationship with AGT," notes Ravi. "The Turkish company has kept improving its door-making technology. We even appreciated its choice of door hardware, aesthetics of its finishes, and beautifully integrated architraves."

The deal with AGT was extensive: consulting, turnkey installation of the machines in the Malkapur factory, training of technical staff on various machines, setting up of installation teams and continued supervision of the factory.

Technical specifications

Factory-made 41-mm or 39 mm-thick shutters are sandwiched with HDHMR of 5.5-mm-thick skins on both sides, or Bison panel of 4.5-6 mm thickness for bathroom or similar applications.

Fire-rated doors with high-density imported honeycomb from Sanopan Boards from France will be available in future after regulatory approvals.

LVL holds the lock body and hardware, laminated with 0.2-mm-thick water- and termite-resistant PVC foil and edge-banded with 1-mm-thick PVC edge band using hot press and PUR adhesives.

The shutter is hung on factory-made door frame of 36-mm thickness manufactured with water- and fire-resistant Bison panel and WPC.

The frames are laminated with 0.2-mm-thick water- and termite-resistant PVC foil using hot press and PUR adhesive, fitted with casing wick (rubber beading) for energy efficiency and noise protection.

Frames are affixed to the wall using high strength expandable PU foam, using tension rods for precision and optional anchor bolts, side and top of frame attached together using dowel screws and quick acting adhesives.

In the factory

In the cutting and planing section, the major load is taken by Biesse's (Italy) Selco WNT-600 rear load, automatic panel saw that cuts HDHMR, Bison Panel, WPC and LVL panels into the required widths. Omega (Italy) cut off saws add to this capability.

At the heart of operations is the Sergiani door press, perhaps the first of its kind installed in India. Coming from the SCM Group of Italy, it is a fully automated, continuous cycle press for door shutters.

It places honeycomb infill inside for strength and adds the HDHMR sheets on top and bottom of the skeleton before pressing the skins to make shutters ready for edge banding. This machine can produce a shutter in 30 seconds.

Hogging the limelight are the completely automated lines and a 6-axes Kuka (Germany) robot which makes itself indispensable in stacking and moving of shutters in the door assembly line.

There is a rip saw from Raiman (now under ▶

“

The 'slump' in the housing sector is a temporary phase. We need houses by the millions, both in the urban and rural landscapes of modern India.

– Mr K. Ravi, Managing Director, NCL Industries.





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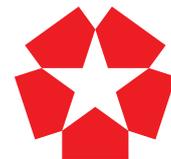
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3



3 *Duradoor products are made mainly from Bison cement-bonded particle boards for exterior uses (L); and include magnetic locking systems (R) and rubber beading.*

Weinig), a flying saw from Germany, Alton (UK) honeycomb cutting machine, a double-sided precision sizing machine from Global Machinery Company (UK), a Unimat profile cutting machine from Weing, and a hot press for doors from Umur (Turkey).

In the lamination section there are panel and profile sanders from Makor (Italy), Heesemann and Butfering (both Germany), planing machines from Wadkin (UK) and Weing (Germany), gluing and pressing machines from Barberan (Italy) and Unimak.

A double-sided edge banding machine from Homag does heavy duty edge binding; and the bulk and pot glue melters are from Nordson Corporation (US).

In the door assembly section, the factory has door lock, hinge and glass opening machines from Stemas (Italy). The door frame and sill 45-90 degree cutting machines (with lock and hinge opening) are also from Stemas.

Masterwood's (Italy) CNC router cuts different types of designs on Bison panels and shutters.

Bison panels

Bison panel is a cement-bonded particle board made out of 62% cement 28% wood – the remaining 10% are chemicals that bond the two main ingredients. The wood used is of fast-growing species like Eucalyptus (South India) and Poplar (North India).

The panel acquires the strength and durability of cement and easy workability of wood, a combination of qualities absent in other boards. The panels come in plain and pre-laminated (colours) types; conform to IS-14276 and IS-15786 norms; and are recognised by even the Bhabha Atomic Research Centre, Trombay.

Bison panels resist fire and moisture, are

asbestos-free, and certified for these properties by the Building Research Institute in Watford, England. The panels can take any surface finish, from lime wash to water bound distemper, emulsion paint to lamination and paper overlays.

As the Bison panel has high density, it weighs more. Higher density (1250-1350 kg per cubic metre) contributes to high compressive strength. The wear and tear in tools (circular cutting saw machine and drill machines) is less than that on other resin-bonded boards.

Ravi recounts how, after considerable research, a Swiss firm discovered that the twain (wood and cement) did not meet because of the sugar content in wood fibres; so they literally let nature take its course. The logs were left in the open for up to 6 months, so that bacteria could devour all the sugars.

Seeing is believing

Thereafter, the wood was processed into large flakes and mixed with cement to make cement-bonded particle boards – which is what Bison panels are all about!

Duradoor is looking at filling the large gaps in supply in the residential (housing projects), commercial (offices and schools) and hospitality sectors. Ravi is confident that once builders and architects take a look and feel the rich finish of his door products, there will be an immediate uptake in orders for the doors.

Right now, Duradoor has full-fledged showrooms in Hyderabad – including a display at the Hyderabad international airport – and in Bengaluru (on MG Road). NCL Industries is planning to set up more such touch-and-feel experience centres and spaces across the country, but is targeting South and Western India on priority.

OAK REDEFINED

AHEC and award-winning South African furniture makers, Houtlander, collaborated on the 'Preservation Bench' for 100% Design South Africa 2019. Known for their modern take on spindle furniture, Houtlander re-worked their signature style to celebrate the sapling growing from the forest floor, seeking the light and reaching up towards the canopy. By using thermally-modified American red oak, which is stable in the presence of moisture, the designers were able to create three grounded benches that curve into one gravity-defying twisted form that seemingly disappears into the air. So vast is the U.S. hardwood forest that all of the red oak lumber used to create the installation would be replaced through natural regeneration in less than 1 second.

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High-density, high moisture resistant (HDHMR) doors are the latest avatar for the industry. This novel application adds wings to your doors in both commercial and residential segments.

Inheriting the desirable properties – strength, durability and innovative application – such doors, manufactured by Action Tesa, are the best available substitute to flush doors and traditional doors.

Manufactured by using the finest and strongest wood fibres of eucalyptus and best quality glue made in-house enhances the desired product performance. Action Tesa's doors are available in the following sizes:



- Length (inches): 78, 81, 84 & 96.
- Width (inches): 27, 30, 33, 36, 39, 42, 45 & 48
- Thickness (mm): 25, 30 & 32.

Action Tesa's HDHMR pre-laminated doors are ready to install; have calibrated panels with no thickness variations; are dimensionally stable in all seasons; and are available in unique and rich looks.

Timber doors are Malaysian speciality

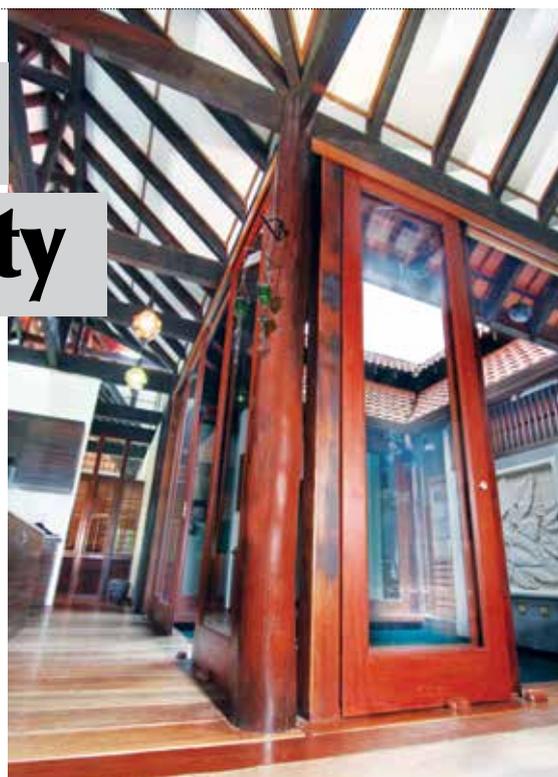
Malaysian-made timber doors are available in a wide range of designs and a variety of materials. Available designs range from traditional solid timber doors, with or without glazing, to engineered doors.

Timber doors, common since antiquity, remain today's preferred choice. A well-designed timber door adds to the exquisiteness of a building or room.

Malaysian timber doors are made from a variety of species that cater to the taste of a broad spectrum of customers from around the world. The doors are available in local timbers such as Dark Red Meranti, Nyatoh, Kembang Semangkok, Balau, Merpauh and Merbau.

Some doors are overlaid with popular foreign species such as Oak, Walnut, Cherry and Makore, as well as reconstituted veneer.

Using state-of-the-art technology, Malaysian manufacturers are well-placed to serve customers globally, whether for small orders



of custom-made doors or large orders of standard products.

Malaysian wood-based furniture and joinery producers are among the exhibitors who will be showcasing their products at the Malaysian Wood Expo, taking place at the Putra World Trade Centre in Kuala Lumpur from 19 to 21 November, 2019. Come and meet them for your source of these high-quality value-added timber products.



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Freud's HSI has remarkable performance

Freud high speed ISOprofil (HSI), with an exclusive locking system, allows the use of ISOprofil re-sharpenable knives at high rotating speed (100m/s) and at extreme feed-rates.

HSI improves the machine performance, enabling a higher production in a reduced time. The ease of access to knives and their fast re-positioning reduce both the set-up and the maintenance time.

Freud split-edge knives reduce the cutting pressure and prevent edge chip out. These knives, re-sharpenable up to six times, enhance productivity and increase profitability, always delivering a flawless profiling of door and window joints.

Freud leverages the hybrid technology, a combination of existing tested-locking systems, which process in 1-step, the 2-step phases of pre-cutting and finishing. This results in impeccable finishing and increased productivity.



Autotec sliding system from Hafele

We like to avoid obstructions as often as possible. Nowadays, with more work to do in less time, pausing to open or operate a door can be quite cumbersome. To provide the experience of independent and safe passage, Hafele has the new Autotec sliding system, which is designed to cater to all internal sliding partitions and doors.

With its modern design, automation, selectivity and aesthetic appearance, Hafele's Autotec sliding system gives your premises a sophisticated and urbane look. It works with the help of a motion sensor which senses the slightest movement in its detection field and sends out a signal to the motors to start their function – and ensure that the doors do not close until everyone has safely passed through them.

The smooth running of rollers ensures silent operation while opening and closing of the doors thus giving you no sign of their existence

at all. The system's flexibility allows you to adjust the speed at which the doors operate as well as the duration they should remain open.

The system's computer-supported technology provides diverse functionality and greater reliability with its various functions of opening and closing the door. The lock prevents unwanted intrusion; one-way passage ensures selectivity and partial opening of the doors helps in maintaining the indoor ambience.

You can also install an optional battery unit that can be used in case of a power failure. It works safely even in extreme conditions and has been tested for 10,00,000 cycles.





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Setting new benchmarks in pull handles



Hettich has always served as a trendsetter in furniture industry and recently, it has unveiled TopLine XL, a new sliding system for large and heavy sliding doors weighing up to 100 kg. The specially developed rollers serve easy running action and are perfect for wardrobes and cabinets, including 3-door wardrobe.

Pull handles can be best defined as the ulterior and undisputed basic ingredient of glass door fittings. A door pull handle can lend unimaginable visual attribute justifying its descriptive exterior in the contemporary modern design.

Hettich, with its wide range of opulently designed pull handles, has created a revolution in the world of architecture. The range encompasses every conceivable option and shape with installation height up to 85mm and installation hole-diameter of 12mm.

This facilitates unilateral mounting and back-to-back mounting with BB mainly being used in glass shutters and BT for wooden shutters in stainless steel finish.

The 3-point fixing and 2-point fixing lockable pull handle is another product by Hettich that finds uses in three major applications:



- For diameter up to 35mm as half-height pull (bolts down) where the handle is placed at the bottom of the door.
- Half-height pull (bolts up) where the handle is fixed at the upper portion of the door.
- As a visually gripping full-height pull (single bolt down) where the handle is fixed dually from top to bottom for maximum grip & convenience.

The handles find a multitudinous application in showrooms, restaurants, office environment and similar landscape.

Hettich pull handles serve as an integral portion of door glassware fittings that not only spice up the given door ware with aesthetic contribution but also boasts of technical superiority.



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Doors and window frames are fundamental parts of a house. They have to be able to guarantee the thermal insulation necessary for saving energy and the acoustic insulation to ensure optimal comfort levels, which are obligatory requirements for contemporary building standards.

At the same time windows are also part of the furnishings and wood. With its warmth, style and sense of hospitality, it is undoubtedly one of the best materials to furnish a space.

Wood is still the leading choice in a sector that increasingly demands a fusion of technology and design. Consequently, joiners need to have the ability to provide customised solutions, which are not always easy to manage.

To meet these demands SCM, a long-time manufacturer of machines for the production of door and window frames, has designed the accord range of flexible machining centres.



Accord 42 FX

The latest model of the range, the new and exclusive accord 42 FX machining centre, is ideally suited for joiners and manufacturers of doors and stairs. The new machining unit, with two independent routing units, reduces

cycle times considerably. Whilst one unit is machining, the other performs the tool change-over, to eliminate downtime.

The accord 42 FX in its new '4.0' version with an exclusive IoT solution, Maestro Connect, adds further fundamental advantages to this machining centre to increase its competitiveness.



Accord 50 FXM

This is a machining centre that can perform routings and drillings on work pieces with a height up to 500 mm. In recent years, the development of machining centres has mainly focused on 5-axes technology.

Today there are multiple applications for 5-axes machining centres: from classic panels to multi-ply curved panels, from classic solid wood components to design solutions, including applications with other materials, such as plastic, composites and resins.

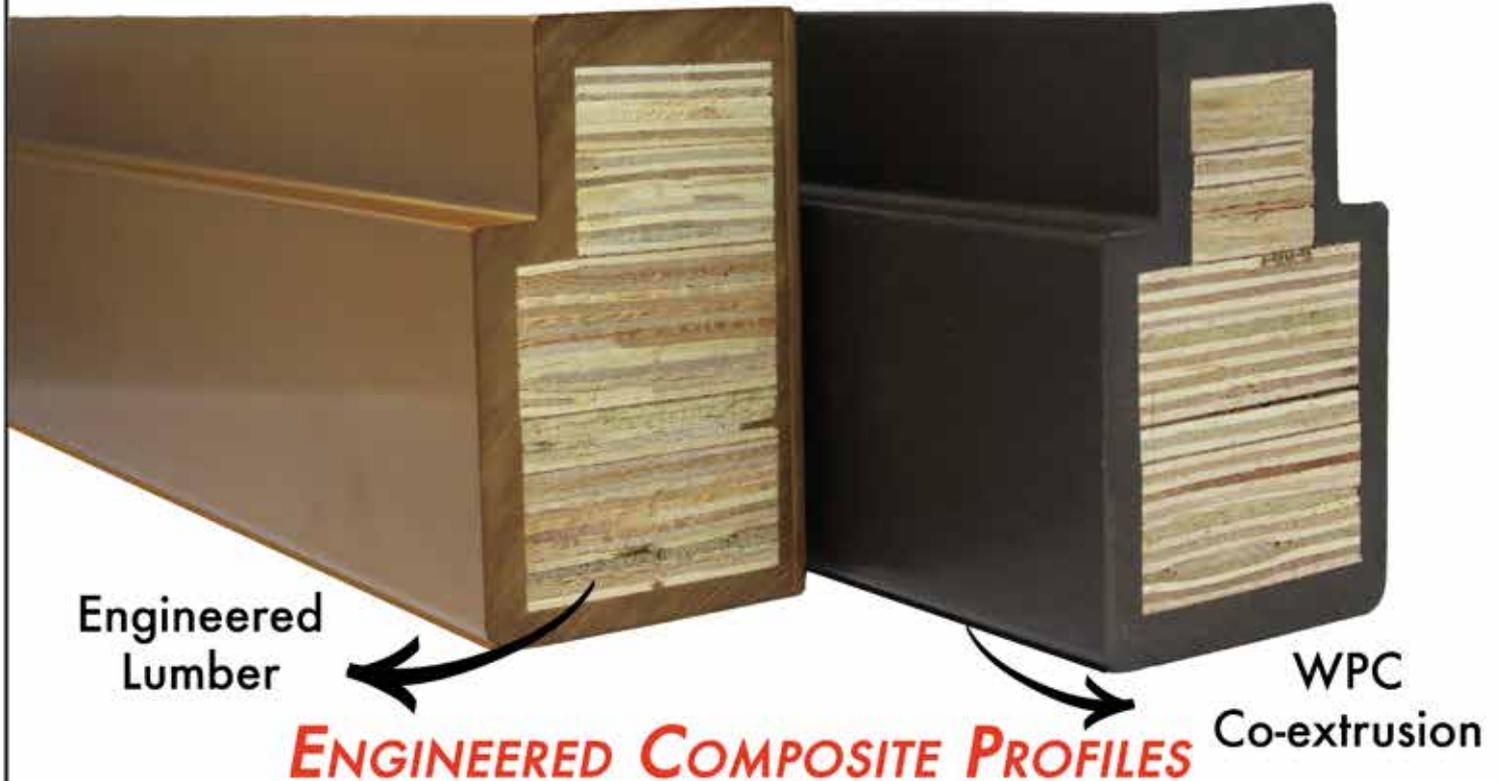
To meet the requirements of the new 5 axes applications, increase the maximum machining dimensions have been increased and the tool allowed rotating freely around work pieces with complex shapes. This led to the creation of the accord 50 FXM with 5 axes and mobile gantry.



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Accord WD

Automatic flow solutions are usually designed for the specific products being produced and have the typical high production capacity of cells as their main objective, compromising the flexibility of a machining centre.

Accord WD revolutionises this trend. The flexibility is the same as a stand-alone machine; pressing a button interrupts the use of the automatic loading/unloading system and the operator can use the machining centre in manual mode, to machine non-standard work pieces with maximum access to the worktable.

While the machine is working on one half-table, the finished work pieces are unloaded from the other one and the new ones are loaded. Up to 16 window components can be machined without the continuous presence of the operator.



Balestrini Pico MD3

This is a CNC machine that brings together tenoning and mortising functions. Its mechanical equipment and software render it particularly suited to machining frames for

door and window frames with 45° joints, whilst preventing splintering on solid wood profiles or tears on coated MDF.

The Pico MD3 can also end trim and drill; in particular, its ability to perform a series of mortises and holes on the long side of work pieces can be used to install hinges and handles along the uprights of door and window frames.

The machine can produce up to 200 tenons and 200 mortises in one hour and one frame every 72 seconds. The reduced setup times and programs can be recalled in just a few seconds, making it ideal for producing small batches.



Balestrini Pico OM

This is a small, multi-purpose machine for special joints and with its CNC tenoner, end-trimmer, drilling machine and mortiser it is the most compact machine in the market. The dimensions of a small two-table tenoner makes it a veritable machining centre able to machine the head of work pieces (tenons, end-trimming, multiple drilling) as well as the sides (multiple mortising, routing and drilling).

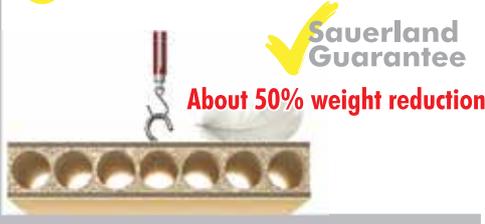
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Sharp Ply has innovative profiles for doors, windows

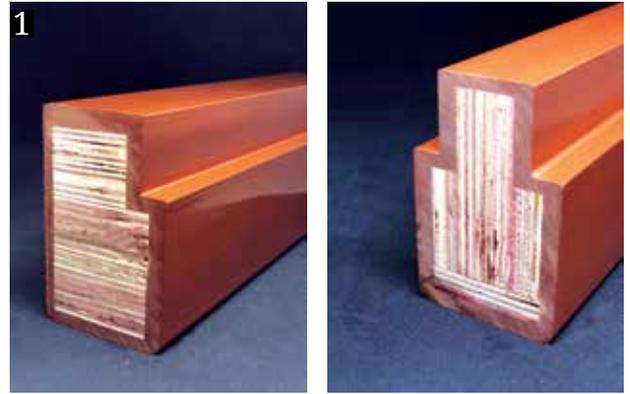
Engineered composite profiles (ECP) are a unique innovation developed to enhance the existing modules of wood work to better its longevity and convenience for users, especially in its usage in door and window frames.

ECP is made with co-extrusion of wood-plastic composite (WPC) on engineered lumber in an oriented manner. The outer layer provides great resistance to block out harsh weather conditions such as sun heat, frost and humidity, and making it 100% termite-proof.

The engineered lumber infill gives it great screw holding capacity, along with superior strength to the profile. The product's main goal is to achieve durability along with everlasting life while not compromising on the needs and ease of usage of the customers.

According to its manufacturer, Sharp Ply India Pvt. Ltd., the ECPs are smartly

1 ECP is made with co-extrusion of WPC on engineered lumber; the latter giving it great screw holding capacity.



engineered to be eco-friendly, with the core consisting of harvested wood and the outer layer made out of recyclable WPC. Owing to the chemical properties of PVC, which has abundance of chlorine in its formulation, the product has great fire resistance.

It is easy to install and can be fixed by any skilled carpenter using PU foam and anchor fasteners. The product, manufactured in Bengaluru, is currently available in 4"2.5" sections in the required length. It can be painted and polished as per the desire of the user.

Unlike wood, it doesn't expand or contract with temperature variations. It doesn't fade under exposure to sun or UV rays. Compared to aluminium, ECP doesn't allow transfer of heat; nor does it rust or corrode.

It needs minimal maintenance – just clean the interior and exterior frame with a standard soapy household cleaner diluted in water. For details email info@sharply.com.

No-wheels, concealed sliding solution

The Tricks system, from Krona Koblenz of Italy, is a new solution for sliding doors fixed to the wall with a concealed, gliding application that links a highly functional level with a modern design.

Besides hiding the system, Tricks allows to create a solution with only 10 mm gap. It slides without any wheels on the floor and ensures its best capacity with a 50-kg door with a dampened door movement both by opening and closing.

No wheels on the floor: this solution allows a smooth door gliding regardless the floor type. The system must be simply pre-assembled and the frame must be fixed to the wall: a fast

1 Krona's Tricks system is a concealed one for sliding doors, leaving only a 10-mm gap with the wall.



installation without any alignment problems.

A crossed cable solution used with the system ensures the door balance is whatever position it may be. Tricks is a 3-D adjustable system: vertical, horizontal and depth (a distance from and alignment with the wall).

The system allows installation of doors of any height and offers a possibility to create various

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2

2 *The Tricks solution allows smooth door gliding (L), and is balanced by a crossed cable solution (R).*

solutions such as cabinet doors, wardrobes and wall niches.

Krona Koblenz is a world leader company in door hinge production and technical solutions for furniture, glass and sliding doors. It aims at ensuring absolute quality of the applied materials, ideal performance of each system and high reliability in time.

Krona Koblenz also presents the new door hinges of the Atomika range and the Kubica Hybrid range. Unique and innovative hinges, the new Kubica Hybrids are made of high-strength steel and Zamak, a hybrid concept that guarantees excellent performance.

The new Atomika Karaker is completely made of high-strength steel and offers a capacity of load up to 80 kg. Thanks to the innovative production process and their materials, Atomika hinges guarantee greater resistance to fire, better performance at low temperatures, greater resistance to aging and oxidation, as well as better anti-burglar resistance and with an eye for the environment.

Krona Koblenz always looks for rapid and efficient solutions to interpret and satisfy the customer's needs with its high quality products and advanced technology, listening carefully to every customer's wish, providing with consulting and design, up to the final installation and assistance.

Krona is represented in India by Koblenz Utturkar Fittings Pvt. Ltd. (info@koblenz.utturkar.in).

The 'magic' of uPVC fenestration



1

1 *uPVC windows are fire- and weather-resistant, prevent water and noise ingress, and provide higher safety.*

Windows are pathways into the soul of a home. They can brighten up any room and act as a beautiful feature decoration as well. Windows come in varied sizes and shapes and each has the boldness of giving character to a construction.

2 *Casement windows (L) and tilt-n-turn ones (R) offer many advantages.*

uPVC windows have many benefits as compared to the standard wood and aluminum windows. They are fire- and weather-resistant, offer great protection against water ingress and filter out noise. They are quite tough to break into, providing higher safety, and are available in numerous styles and colours.

3 *Sliding windows are best employed to maximize interior space.*

Delhi-based Window Magic offers a variety of uPVC windows, each holding their own charm.

Window Magic has introduced classic styles in casement windows that will never go outdated. They are the epitome of innovation. Top-hung windows are a strong protection against rain and wind. These windows provide proper ventilation that can be adjusted.

Top-hung windows are economical and save energy; and are suitable for totally different requirements and are available in the market in a wide range of sizes and styles.

Fixed uPVC windows are placed while designing the home, to come up with optimum quantity of natural light, thereby saving on energy bills by reducing the requirement for electricity. Fixed uPVC windows also make small areas seem larger and roomier!

Additionally, the window ensures that the temperature of the room remains the same. Fixed uPVC windows are created in such a manner that they can face harsh climate.

French casement windows add glamour by providing a view of the surroundings and add an element of nature in interior spaces. In keeping with their popularity, Window Magic offers an engaging variety of selections in styles.

Window Magic's sliding windows add



panache to the house, crafted and designed in modern designs to enhance the interior style. With sliding windows, it is possible to bring nature into the living room. They are ideal for homes that need to economise on space.

They are especially useful in various restricted areas like interior partitions, cubicles and balconies.

Tilt-n-turn windows come with excellent features like versatility and next-generation designs. Simply by turning the handle of the switch once, you'll be able to open the secure windows for ventilation. By twisting the handle once more the window can swing inward on its hinges for a bigger opening.

These windows are energy economical, cut back noise and offer safety in homes. Low maintenance is an additional advantage of these windows.

Window Magic operates with technical expertise from Kommerling GmbH, the renowned German manufacturer of uPVC sheets for diverse applications, and another German company, Roto Frank AG, a leading hardware and technology provider for doors and windows. For more information, email info@windowmagicindia.com.



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Promising new solutions await industry

Mumbai WOOD

4th edition of Western India's top woodworking show is scheduled for 17-19 October, at Bombay Exhibition Centre

The forthcoming edition of MumbaiWood promises to outrank its own success and set a high benchmark with a grander event, both in terms of its size as well as the visitor turnout from across the country.

Organised by NuernbergMesse India Pvt. Ltd., in cooperation with PDA Trade Fairs Pvt. Ltd., the 4th edition of MumbaiWood is scheduled from 17 to 19 October at the Bombay Exhibition Centre, Mumbai.

India will once again offer the woodworking industry more than 5,000 square metres display of machinery, technology, raw materials, semi-finished products, components, hardware and fittings over three days for the interior and furniture manufacturing sector.

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

Save The Dates

MumbaiWood: 17-19 October, 2019:
Mumbai

IndiaWood: 27 Feb-02 March, 2020:
Bengaluru

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

Strongly established as one of the most important events of the Indian woodworking industry, MumbaiWood (along with IndiaWood and DelhiWood) has 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 in the western India region.

The expo will bring together the best brands, solutions and services for the woodworking and furniture manufacturing industry from across India, clearly marking it as absolute essential trade and technology platform for manufacturers and woodworkers, architects and real estate developers.

What's new

A significant highlight of the show is the special workshops and skills demonstration organised with Dimension Network and these sessions would focus on skill and knowledge ▶

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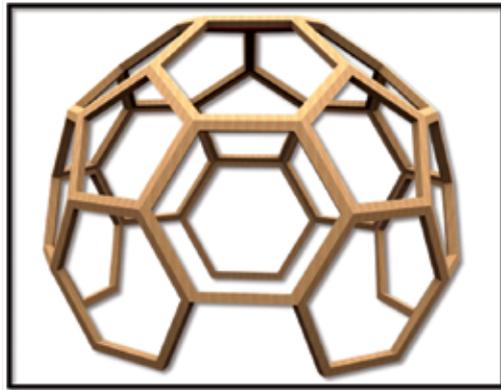
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development for innovation, conservation, education and sustainable development (surrounding wood and woodworking).



With live skill demos and workshops, the sessions would showcase skills in carpentry, material machinery to create a monumental solid wood structure. There will also be a live skill competition between mentees in the Dimension Network mentored by professionals in the field, and a product showcase by a few select members of the Network.

At A Glance

175+ exhibitors from all over India and abroad

For Furniture & Kitchen Manufacturers, Architects & Interior Designers

Builders & Traders also form a large part of visitors

Free entry; Visitor registrations from SMEs at a peak

Pre-registration at <http://www.mumbai-wood.com/Visitor-Registration>

Product launches

MumbaiWood has lined up several product launches from its exhibitors, with some stand out names such as WoodTech, which is launching its angular automatic edge banding machine (RapidEdge 296JS) and Jai Industries, which is introducing its Optimus range of machines which will go on display for the first time ever.

SharPly will have, for the first time in India, a display of its ECP for door and window frames. Advance Polymers is launching a new edge band in India from its Glam Series.

Accutec Tooling System is displaying its new PCD toolings and saw blade; Altendorf India will launch its edge banding machines for the North market; and Kuvam Technologies is launching water-cooled electro spindles.

Rohm Clamping Technologies is launching the world's first WiFi-connected electro-spindles in India; Rudani Enterprises will showcase KMR collated magazine screwdriver, which can drill up to 80 mm without prior drill into wood and plywood.

Smartedge Industries will unveil its new colour range in PVC edge band and new workstation legs profiles. Panamax Tapes International is launching mirror mounting tape, multi-stick tape, laminate bond and door protection tapes.

The primary focus for Agape World will be on its range of polyurethane foam, adhesive and sealants, paintable silicone sealants and hybrid polymers. Jagdamba Wood Industries is offering fire-retardant door and fire-retardant plywood.

Kbros will showcase its signature Aristo floor-to-ceiling concept for sliding wardrobes. Innofit Systems will have on display its new, aggressively priced height adjustable tables.

MVS Global is offering Sablon drilling jigs for the Minifix and Rafix applications in modular furniture making. Affordable and portable, these jigs can be used in factory or job site with ease.

For every single visitor to the event, there would be something promising, in terms of knowledge, information, networking and business prospects. Visitors from 340 cities have already pre-registered and planned their visit to MumbaiWood. You can also pre-register on <http://www.mumbai-wood.com/Visitor-Registration> and cut the queue at the venue. More information is available on www.mumbai-wood.com.

For space bookings, call

Belliappa MK (Project Manager) on +91-9916092922 (email: belliappa.mk@nm-india.com), or

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Standing tall with bamboo



WORLD
BAMBOO
DAY

By Roy Thomas

World Bamboo Day is celebrated on September 18 every year. It was officially established at the 8th World Bamboo Congress held in Bangkok (Thailand) in 2009 and people and businesses from around the world use this day to raise awareness of the benefits of bamboo and to promote its use in everyday products.

Since then this day is a world-wide event, gathering thousands of people to highlight the importance of bamboo as a plant companion for humanity and the multipurpose services offered by this humble plant. Where bamboo grows naturally, bamboo has been a daily element, but its utilisation has not always been sustainable due to exploitation.

The World Bamboo Organisation aims to bring the potential of bamboo to a more elevated exposure – to protect natural resources and the environment, to ensure sustainable utilisation, to promote new cultivation of bamboo for new industries in regions around the world, as well as promote traditional uses locally for community economic development.

This year, the event became more important not only as a 10-year anniversary celebration but also because the world is becoming aware

of the important role of bamboo to confront the challenge of climate warming, particularly with a lot of people exposed to the destructive effects of this threat, such as drought, super-typhoons, floods and landslides.

The plant

Bamboo is a fast-growing plant, with an amazing capacity of sequestering CO₂ and of producing a huge amount of biomass. With its ability to restore degraded lands and to stabilise soils against erosion and plague, and with its talent to produce renewable material bamboo in our present time, is becoming a masterful social and economic plant.

Bamboo produces more oxygen per acre than other plants and helps in combating global warming as it absorbs harmful gases. It also reduces soil erosion on account of its rhizome root system that binds the soil.

The International Network for Bamboo and Rattan (INBAR) is an inter-governmental organisation that assists governments, businesses and local communities to identify innovative bamboo-based opportunities for sustainable human development.

According to INBAR, one billion people around the world use bamboo in their daily lives as housing material, fencing and food, and in craft production, etc. ▶

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While bamboo production in Asia carries connotations of unsustainable forestry practices and illegal logging, INBAR is working to share lessons learnt and bring bamboo production in Africa's and Asian markets up to the highest standards.

Bamboo in India

There are more than 1750 species of bamboo in several genera found across the world. India is the second-largest bamboo growing area after China and has 30% of the world's bamboo resources.

But it constitutes only 4% of the global market. It has 90 lakh hectares of bamboo forests, but has only 4.5% of the world market. China, with 40 lakh hectares, holds about 50% of the world market according to the Bamboo Society of India.

Although bamboo is merely a 'woody grass', in India it was classified as a 'tree' for 90 years,

thus effectively preventing its commercial exploitation. It was only in 2016 that this miracle plant was recognised as a 'grass', facilitating its frequent harvesting.

In today's setting, responsibly sourced raw material will lend credibility to bamboo products in international markets. Certification of bamboo products under FSC (Forest Stewardship Council) scheme emerged as the highlight of the discussion that took place at the two-day International Conference on Bamboo Composites in Bengaluru recently.

FSC certification ensures that the raw material for products has been sourced from responsibly-managed forests, both environmentally and socially. It also carries the assurance for consumers that forests remain thriving environments for the sourced material for future generations and does no harm to indigenous people and the wildlife for which the forests serve as natural habitats.

The need for FSC certification for bamboo products is felt nowhere more urgently than in the eight North-East states, which together produce two-thirds of India's bamboo but have not witnessed progress of the material in the value chain.

The Ministry for Environment and Forest and Climate Change has, meanwhile, approached the Bureau of Indian Standards for providing standards for various bamboo products.

In construction

Bamboo can be utilised as a building material as for scaffolding, bridges and houses. Bamboo, like true wood, is a natural composite material with a high strength-to-weight ratio useful for structures. Among many uses of bamboo, housing is one of the major areas applications especially in the wake of residential shortages around the globe.

Bamboo has a higher compressive strength than wood, brick or concrete and a tensile strength that rivals steel. Bamboo as a building material has high compressive strength and low weight has been one of the most used building materials as support for concrete, especially in those locations where it is found in abundance.

Experts are of the opinion that efforts must be undertaken to turn bamboo from "poor man's timber" to "rich man's fancy". Manufacturers of bamboo-processing machines say certain bamboo products outlast similar products made of timber.



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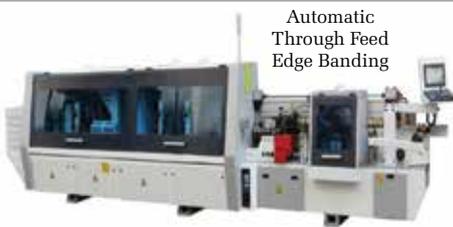
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ZOW 2020: ideas for compact settings

The ZOW supplier event in Bad Salzufflen, in the heart of Germany's leading furniture-manufacturing clusters, is popular because of its regional positioning, its workshop character, which allows plenty of time and space to intensively inspect innovations and discuss projects, and the presentation of ready-to-market products.

Also of particular interest are the focus topics at the business event, on subjects that will be shaping the furniture industry and trade in the future. One such hot topic, light-weight construction, will come under the spotlight in 2020.

In recent years, the innovative supplier industry event has attracted visitors from interior construction, the cabinet-making and carpentry trades, the car manufacturing and ship-building industries, as well as architects and designers, and will continue to do so.

Around 20 member stands and around 30 workbenches with demonstrations on

handling and processing lightweight materials will continue to be in vogue at the 3-day show (4-6 February). Special exhibits such as furniture, furnishing prototypes and components from the field of lightweight construction will be presented and a demonstration focussing on manufacturing of lightweight panels is also being planned.

The special area offers visitors the chance to learn about different lightweight materials and about corresponding tools and applications. With companies like igeL, Axxor, Henkel, Lightweight Solutions, Leitz, Leuco and Jowat participating, it will also help establish strong business connections.

The topic, 'Smart, light-weight design and construction', is still relatively new technology for the furniture/interior construction industry and is of strong interest to visitors.

Modern light-weight materials not only make it possible to achieve a significant reduction in weight and resource consumption, they also open up innovative possibilities such as the integration of functions or new design options with the same or even higher strengths.

Another, hitherto barely-tapped field which will be highlighted at the event is the development of intelligent, partially hidden applications or features in and for furniture, which are only possible with light-weight construction elements.



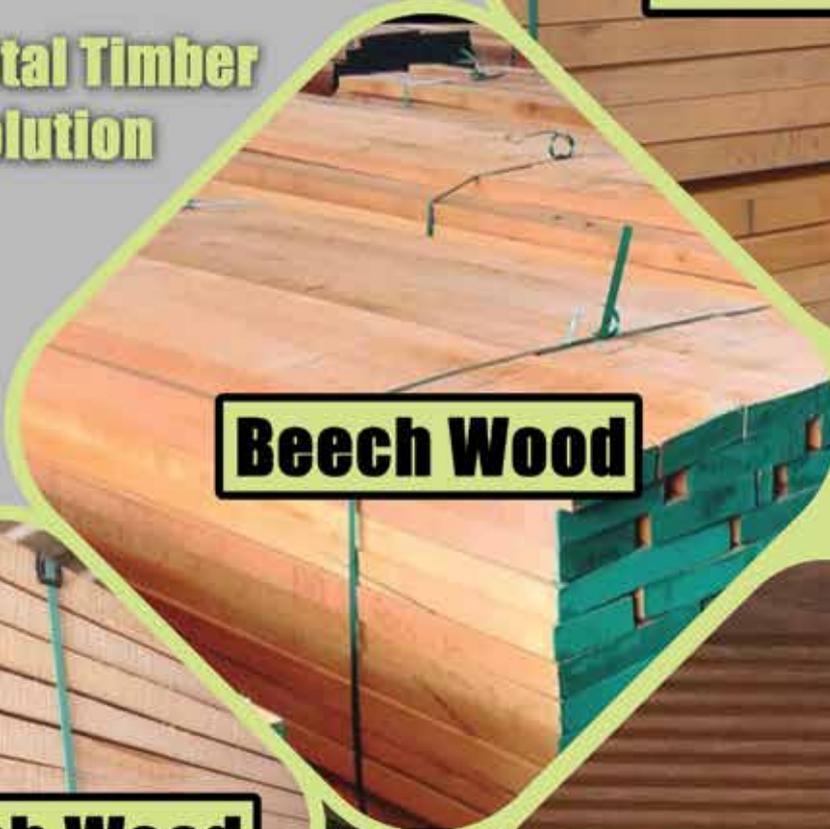
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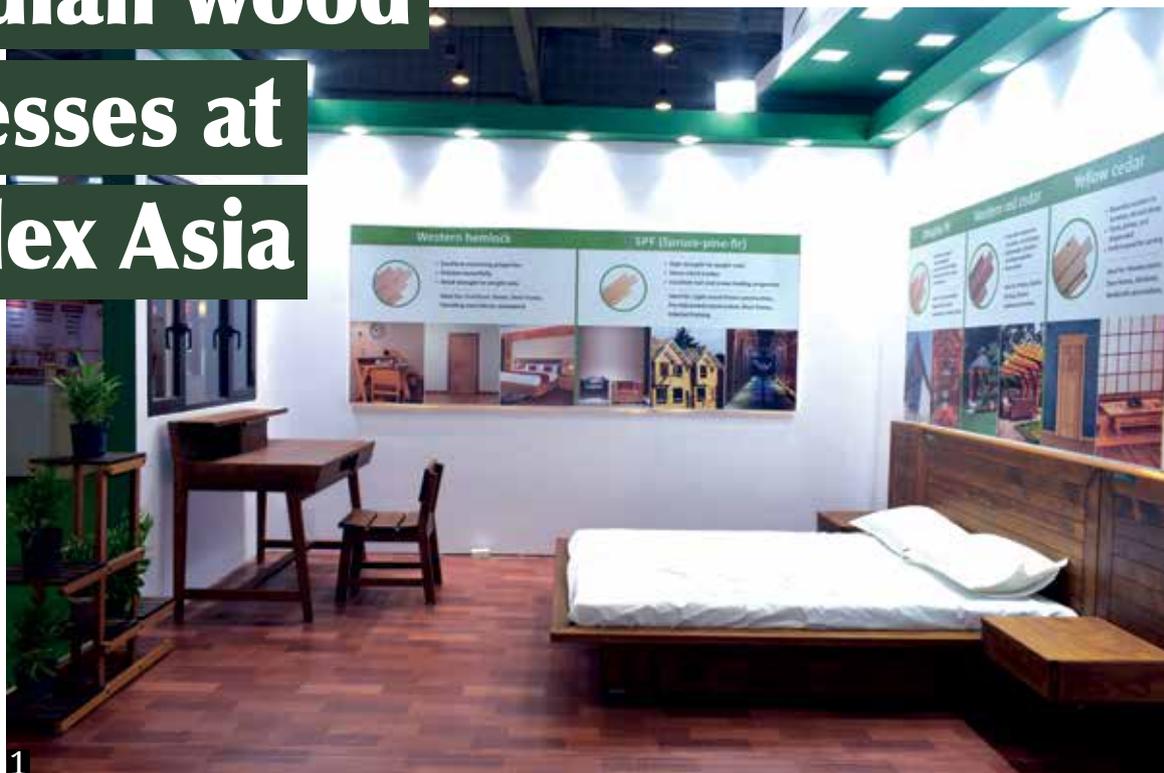
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Canadian wood impresses at Woodex Asia



1

1 Queen-size bed and study table made in Western Hemlock.

Canadian wood species of Western Hemlock, Spruce-Pine-Fir (SPF), Douglas Fir, Western Red Cedar and Yellow Cedar were used to create a warm and inspirational display booth at the Woodex Asia 2019 exhibition in Gandhinagar, which concluded recently.

2 Left door made in Western Hemlock with door frame in Douglas fir.

The PEFC/FSC-certified Canadian wood is sourced from British Columbia, Canada, the world leader in certified forests and the world's largest lumber exporter.

The items on display were doors and door frames, interior panelling, contemporary and traditionally styled solid wood furniture – all

made in Western Hemlock. Also showcased was a window set made in Yellow Cedar; a nesting table and lounge made in SPF; and exterior cladding made in Western Red Cedar.

The manufacturers, traders, importers and contractors were highly impressed with the versatility of the Canadian wood species and the many possibilities it presented to them to design in wood for different applications in future.

Canadian lumber samples and technical information were made available at the booth and the team of wood experts from Forestry Innovation Consulting Pvt. Ltd. (FII) assisted visitors on how best to use different Canadian wood species in their projects or product lines.

This one-on-one interaction made the visitors aware about choosing the right specie, grade and size of lumber depending on the intended end-use of the wood.

Speaking about the success of the exhibition, Mr Pranesh Chhibber, Country Director of FII-India said, "In financial year 2018-19, total wood imports into India showed 19% growth, softwood (logs and lumber) imports was 43% of total wood imports." For enquiries email info@canadianwood.in.



2



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| Display | LED | LED & LCD Digital | |
| Battery | 9V | 9V | 9V |
| Measuring Mode: | | | |
| No. Of Wood Calibration Scales | 150 | Inbuilt 150 | 150 |
| Pin Measuring Range % WME | 6 to 90% | 7.9 to 99% | 7.9 to 99% |
| Search Mode: | | | |
| Pin Less Measurement Range | NA | NA | Yes, 19mm deep (Relative) |
| Normal Depth of Measurement (mm) | 10 | 10 | 10 |
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Courtesy: visitnorway.com.

‘Under’water restaurant features oak & concrete

The world’s largest underwater restaurant – aptly named ‘Under’ – opened in March this year off the coast of southern Norway. The restaurant is a concrete tube, protruding out of the water for entry and descending below the surface.

Designed by award-winning Norwegian architecture firm, Snohetta, it is a 5,300-square-foot gourmet restaurant 16 feet below sea level, which can accommodate up to 100 guests.

The building itself is an architectural gem, reminiscent of a rock formation rising out of the sea. Concrete walls 19 inches thick provide resistance from waves and water pressure from the Skagerrak Sea outside. The monolithic structure is designed to fully integrate into its marine environment over time, as the roughness of the concrete shell will function as an artificial reef.

Down in the restaurant, the notion of an “ocean view” takes on a whole new meaning. Its massive window offers a view of the seabed as it changes throughout the seasons and varying weather conditions.

Oak is featured throughout the restaurant. An untreated oak-clad entrance, interior panels, and a giant oak staircase all work to create a warm atmosphere and stave off

claustrophobia. Bespoke charred tables and angular chairs were created by a local craftsman.

Locally caught fish, seabirds and wild sheep are on the restaurant’s menu.

1 Untreated oak clads the entrance.

2 Oak features in interior panels, a giant oak staircase and bespoke tables and chairs.



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Wood on walls is multi-functional



1

Pic courtesy: Jordan GmbH

Wood has proven itself as a building material for millennia. With ever new possibilities for fashioning and processing, wood can be used flexibly and diversely.

From solid wood to panels, wooden walls and panelling are the trend. And this not only because wood looks good. As a building material, the material also provides advantages from an ecological perspective.

While wood panelling used to serve as impact protection for the wall, it is today primarily used as decoration. Panelling was traditionally attached to the wall with the help of a sub-construction of slats, which served as the carrier and foundation for the sheets of wood, boards or slats used.

These are chipboard boards with a coated surface that can be mounted similar to laminates. The differentiation can thereby be made between seamless laying and seam visuals. The panels can be attached vertically or horizontally.

Natural trend

Wood panelling can vary in colour depending upon the wood chosen: the most popular include panelling of walnut, elm and oak. In addition to panels of chipboard, the trend is increasing toward natural materials, such as solid wood or tree bark.

That these types of wall cladding have nothing to do with the often somewhat absurd charm of the walls of the 1970s and '80s is shown by new designs of many companies.

Wall cladding of wood quickly creates a new feeling in the room. For example, the 'Paro' collection from Jordan GmbH is available as a variant of split wood. Extraordinary 3-D wall

designs, front fillings or decorative room elements can be realised with the 25-40-cm-long shingles, which are attached to fibreboard.

The relief surface is not only an eye-catcher, but also improves the acoustics in the room. Thanks to the absorption capability of wood, the humidity of the air in the room is regulated, depending upon the area and the type of wood.

Freund GmbH, an Austrian company, relies on natural materials for interiors, such as Poplar bark. Poplar is a willow tree and can reach heights of up to 45 metres.

Bark cladding

Bark House, a business partner of Freund GmbH, harvests the natural wood on the hottest days of the year. The bark is carefully peeled from the trees in one piece and laid out with heavy weights that press them into a straight form.

Following harvesting and drying, the bark can be used in one piece – gluing onto a separate carrier material is not necessary. The company also offers shingles of Poplar bark as a more economical alternative to the bark panels.

Whether a wall element is completely or only partially clad with wood also depends not least upon the function the wood is to fulfil. The selection process is very multi-faceted when purely visual aspects are involved.

However, wood can also have practical benefits as wall panelling – for example, when the wood panelling is to be used as noise insulation or to condition the air in a room. The type of design and the use of the natural material are always in the hands of the client.

1 Whether for the entire wall or as a cleverly placed accent in the room, panels from split wood are an eye-catcher.

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Aussie unveils 'no-tools' furniture



1

1 *The Oak & Hide coffee table requires no screws or dowels and can be assembled in a matter of minutes.*

An Australian company, Oak & Hide, is re-imagining flat-pack furniture that does not require any tools for assembly – and yes, you read that right! The Brisbane-based firm uses ingenious methods to pack its products for delivery.

Using locally sourced Australian Hoop Pine, its owner and joiner, Ben McGreevy, claims his furniture will outlive cheaper flat-packed products by decades.

With a desktop CNC (computer numerical control) machine, he creates timber joinery with pinpoint accuracy that is not possible to achieve by hand. The Oak & Hide coffee table is Ben's flagship product, borne out of his frustration with flat-packed furniture.

It features a clean, simple design with strong joints. "Even though I have probably assembled and disassembled this piece more than 50 times, I still enjoy slotting the pieces together," he says.

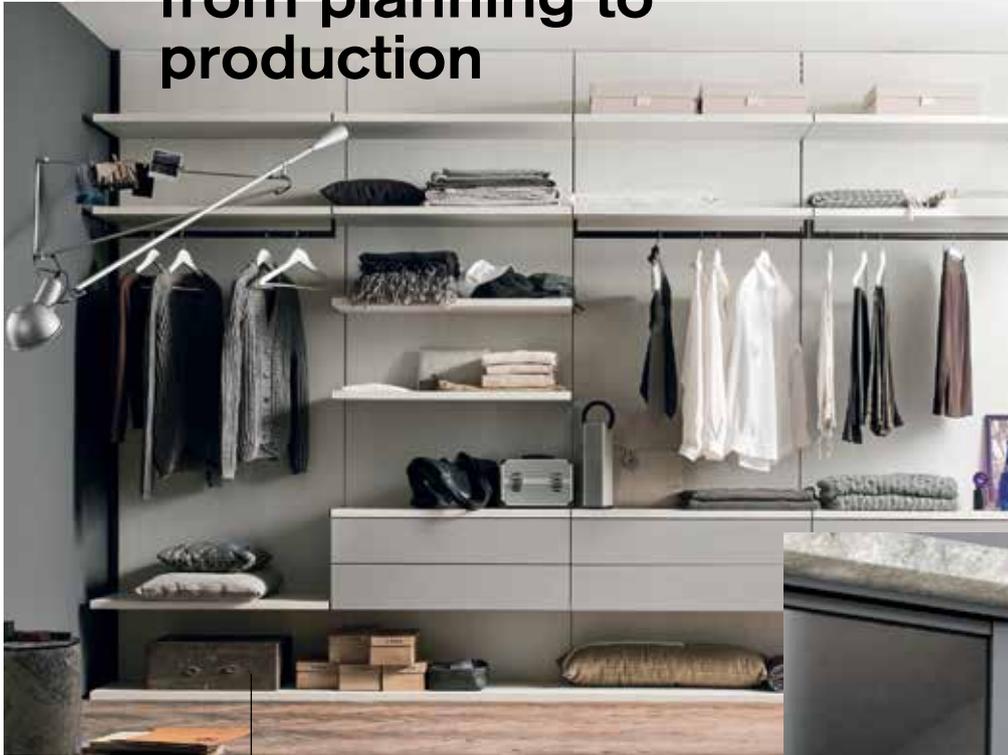
Despite studying mechanical engineering, Ben was drawn to wood work. "There's something special about making products from timber with every piece having a unique grain, different textures, smells and behaviours. It's just a great feeling when you make something that looks great and also has a purpose".

Ben sets his work apart from competitors by remaining staunchly committed to using sustainable timber. For his coffee table, he chose Australian Hoop Pine certified by Australia's Responsible Wood, which cooperates with PEFC (Programme for the Endorsement of Forest Certification)

Inspired by the strength of traditional framing joints, in combination with CNC machining, the Oak & Hide coffee table showcases minimalist design at its best.

Ben also uses certified Spotted Gum, Black Butt, Flooded Gum, Ironbark, Jarrah and Tasmanian Oak.

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Swedish style statement in Paris

In partnership with industry organisation Swedish Wood, two Swedish alumni of Beckman's College of Design in Stockholm have created a pine kitchen for one of the guest apartments at the Swedish Institute in Paris.

The kitchen is part of the Swedish Institute's refurbishment programme aimed at raising the profile of Swedish design in Paris. The apartments were unveiled during Paris Design Week.

"We wanted to create a comforting space, so we hit on the idea of trying to embody the restfulness of a pink womb. With the help of paint and pine, we were able to create a kitchen where you're surrounded by warmth and the intensity of the flesh tone," explain the designer duo, Lisa Lindh and Klara Hedengren, who came up with the concept for the kitchen.

The Swedish Institute in Paris is refurbishing its six guest apartments to give them a stronger design profile, with a focus on Swedish design and craftsmanship, sustainability, innovation and quality. The project goes by the name Swedish Design Moves and Hem-X6.



The rounded worktop now invites conversation with the person doing the cooking – it can even serve as a desk early in the morning. "The contrast between the white wood interior and the pink exterior is really interesting," says Björn Nordin, Director of Interior and Design at Swedish Wood.

"Pine is a wonderfully attractive and accessible material, and one that we've both worked with before. The two of us are passionate about bringing sustainability into our designs, and working with Swedish wood makes total sense from that perspective, while also being a great aesthetic choice," note the young designers.

The Hem-X6 apartment project is an initiative by the Swedish Ministry of Enterprise and Innovation aimed at promoting Sweden as a design destination, as well as raising awareness of Swedish design internationally.

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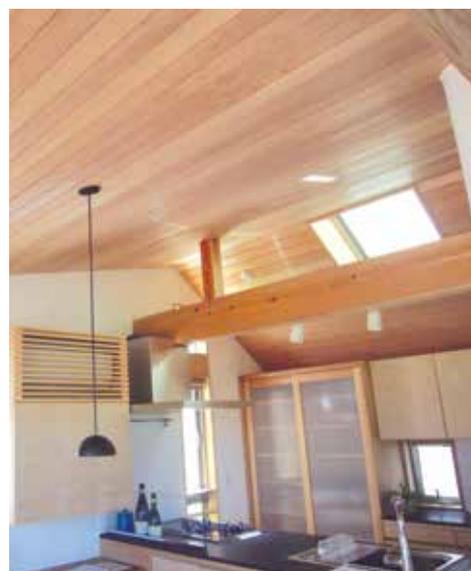
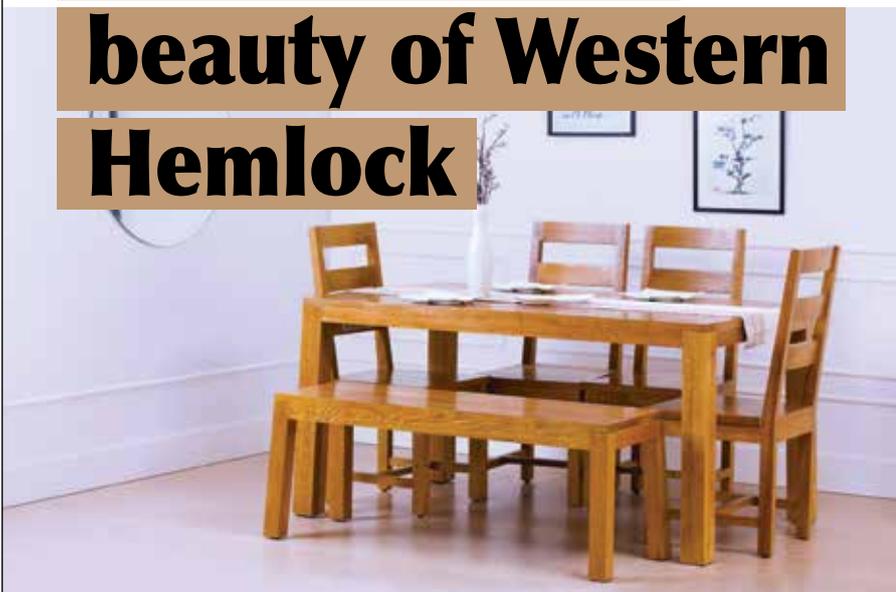


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FORMAT

Drench in the beauty of Western Hemlock



Monsoon is when we tend to spend more time at home, enjoying the beautiful lazy climate with a hot cup of coffee. For some, it's also a great time to take care of those indoor projects, additions, repairs and maintenance.

If you are considering a makeover, perhaps update furniture items, or add a wood feature such as solid timber wall panelling, ceiling or screening, consider the beautiful, warm and sustainable wood species from Canada.

Western Hemlock comes immediately to mind due to its fine grain, easy working properties and light colour. Western Hemlock is the first choice for mouldings and interior woodworking and known for its excellent working properties.

It is also widely used for interior panelling, furniture, doors and windows. It is non-resinous and takes any stains or finishes extremely well. It sands smoothly, glues easily

and has high nail and screw holding ability.

Besides, it has good strength-to-weight ratio; excellent machining properties; good sanding, staining and painting properties; glues satisfactorily and polishes beautifully.

Expert tips

Use a good quality, branded, moisture-resistant wood coating on all surfaces including ends, edges and rear surface.

In the case of panelling and screening, pre-coat with primer and first sealer coat before installation. Then, if necessary, add final sealer coat to exposed surface.

Use felt or rubber concealed caps on furniture legs in contact with floor. Western Hemlock is lighter but strong; therefore furniture items can be easily lifted rather than dragged when re-positioning.

(www.canadianwood.in).



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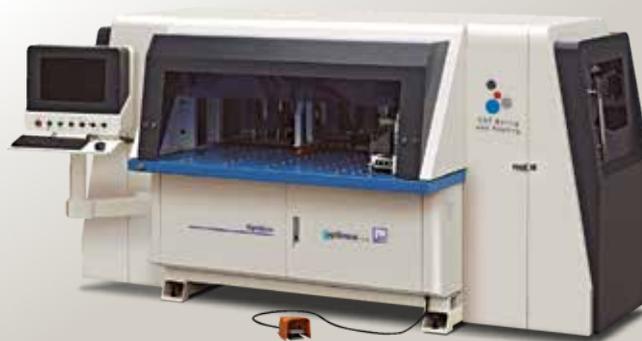
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Tasmanian heritage gets WAF recognition



1



Pix courtesy: Taylor & Hinds Architects

The World Architecture Festival (WAF) for the first time introduced a 'Best Use of Certified Timber' prize recently. The award highlights extraordinary buildings and inspirations that work towards a sustainable future in construction, and recognises architects for their use of certified timber as a main construction material for buildings.

Besides the winning project, the jury highlighted two more outstanding constructions. The first highly commended prize went to Krakani Lumi, a standing camp in Tasmania that is inspired by the traditional constructions of its indigenous peoples.

Designed by Taylor and Hinds Architects, located in North East National Park, the camp serves as a stopover for visitors taking guided walks through the aboriginal land. A key priority of the project was environmental awareness and respect for the native culture especially as it is a sacred site.

In considering the cultural background, the architects aimed at preserving the encounter with the cultural interior, while at the same

time delivering a modern building typology for a high quality tourism experience.

Aborigine culture

The result is a protective shroud that conceals the cultural interior, preserving the agency of the aboriginal community in the telling of their story. The camp consists of a communal dome and several smaller, half-domed lodges.

The main construction material is PEFC-certified, durable hardwood, supplied by Britton Timbers. While the exterior shroud consists of charred Silver Top Ash, opening the sliding doors reveals the warm interior, lined with Blackwood and Tasmanian Oak.

The domes were pre-assembled in a workshop and transported to the site. All linings were installed on site, with the help of members of the local aboriginal community.

A fireplace at the mouth of the dome invites everyone to gather and listen to the captivating stories about two centuries of war, aboriginal dispossession and exile, and the eventual return of a sacred landscape.

1 *Krakani Lumi (resting place) is a standing camp (L) within the Wukalina National Park in Tasmania, Australia. Each of the domes was pre-assembled and transported to the site (R).*

2 *A fireplace at the mouth of the dome (T) invites everyone to listen to the captivating aboriginal stories. All construction material (B) is certified, durable hardwood.*

“We have always sought to achieve an architectural sensibility that allows the spaces of Krakani Lumi to make the fullest experiential offering to the aboriginal community in the telling of their story,” said Mat Hinds, director of Taylor and Hinds Architects.

“Krakani Lumi is a remarkable project that gives Tasmania’s aboriginal community the opportunity to raise awareness for their story and their rights. Protecting indigenous people’s rights is a priority for PEFC, and a key part of our revised sustainable forest management benchmark standard,” said Ben Gunneberg, CEO of PEFC.

The WAF recognises outstanding architecture projects in various categories.



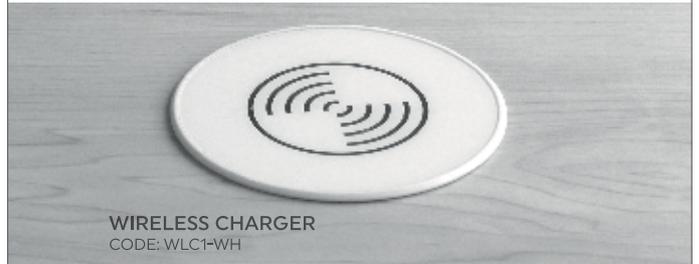
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1

Trees 'chat' over their own WWW

Nearly 20 years ago ecologist Suzanne Simard discovered that trees indeed communicate with each other through a fungal network, which scientists have nicknamed the 'Wood Wide Web'.

Now an international team of scientists has created the first global map of the vast underground network. They did this by creating a computer algorithm to analyse a database from the Global Forest Initiative, which includes 1.2 million trees in more than 70 countries.

The *Woodworking Network* reports that the algorithm takes into account the different fungal species that associate with each tree species. It also takes into account local climate factors, which the scientists say has the biggest role to play.

"It's the first time that we've been able to understand the world beneath our feet, but on a global scale," Thomas Crowther, an author of the study from ETH Zurich was quoted as saying. "Just like an MRI scan of the brain helps us to understand how the brain works, this global map of the fungi beneath the soil helps us to understand how global ecosystems work."

Certain types of micro-organisms live in certain parts of the world, and by understanding that scientists can figure out how to restore different types of ecosystems and also how the climate is changing.

Simard studied how, over the course of a summer, shaded Fir trees received carbon from Birch trees in the sun. The opposite happens in the fall, when Birch trees receive carbon from Fir trees as they start to shed leaves.

She discovered this exchange takes place underground, through a "mycorrhizal network", a symbiotic relationship between a fungus and the roots of its host plant.

Give and take

Both the fungi and trees benefit from the relationship. Since the fungi cannot photosynthesise (they have no access to light), they receive a type of carbon and sugar produced during the tree's photosynthesis.

In return for sugar and carbon, fungi release nutrients like nitrogen, phosphorus, and water to the trees.

But, as scientists discovered, it goes deeper. Fungi actually connect trees to one another, allowing them to share resources, call for help, and even wage war on each other!

Simard and her team of graduate students found that older, or "mother" trees use the network to supply shaded seedlings with sugars. The mother trees are actually able to identify young, nearby seedlings as kin.

If it identifies those nearby young trees as its own offspring, mother trees are more likely to share resources.

Scientists also discovered that dying trees may dump their resources into the network. If a tree is attacked by a bug, for example, it can release chemical signals through their roots. Those signals travel through the network, warning other trees to activate defences.

Other plans are more sinister. Certain types of orchids, for example, may hack the network in an attempt to steal resources from nearby trees. The black Walnut tree spreads toxic chemicals to hurt or kill nearby plants.

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Sustainable sunglasses from 500-year-old timber

Courtesy: kickstarter.com.

Taking a waste material and turning it into something useful, while eliminating the need for a new resource, is about as sustainable as it gets. This is precisely what Loch, a new company from southern Ontario (Canada), is doing.

Loch makes gorgeous wooden sunglasses from reclaimed timber that has been pulled up from the bottom of the Canadian Great Lakes. These logs are from trees that began growing about 500 years old, the remaining spoils of the logging boom that ravished eastern Canada's forests throughout the 19th century.

At the time, millions of logs were transported along waterways, floated down rivers and over rapids and hauled across lakes by tugboats in giant booms. They were destined for the shipyards of Europe and sawmills of America.

Sometimes these logs sank to the bottom of the lake, where they were preserved in the cold, dark water. Only now, nearly 200 years later, are they resurfacing.

Loch works with a diving company, licensed by the federal government, to salvage sunken logs. Most come from the Georgian Bay area and are dated, using dendrochronology, to determine their precise age.

The logs are then dried in a microwave kiln and cut into small veneers that are cross-

laminated in 10 layers for a strong, durable sunglass frame.

Tim Waggoner, co-founder of Loch, explains that old-growth wood is desirable because it is unusually strong as, half a millennium ago, these giant trees grew in a more dense, competitive environment, giving them tighter growth rings compared with modern lumber, which is grown in carefully managed forests.

After staying in a zero-oxygen environment underwater for a prolonged period the nanomaterial inside the timber cells has been replaced with water. After drying, the water evaporates, leaving hollowed-out 'pores' inside the wood that make it light-weight yet incredibly strong.

The logs themselves are gorgeous and Loch works with three types of wood – Oak, bird's eye Maple, and flame Birch. The Oak comes in two shades, regular and dark, the latter stained by minerals at the bottom of the lake.

Nor does this method cut down any new trees for a product that is more about fashion than necessity. The potential for environmental disruption by hauling these settled logs out of the deep is also considerably less than what is caused by logging today and avoids the mess created by machinery when it moves into an area.

A boat with a crane, diver, and air balloons lifting old logs out of the water seem much gentler than logging!

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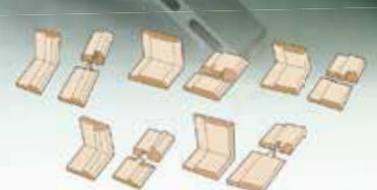
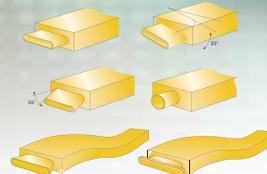
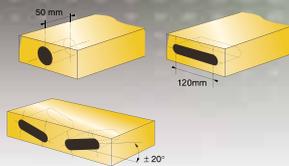
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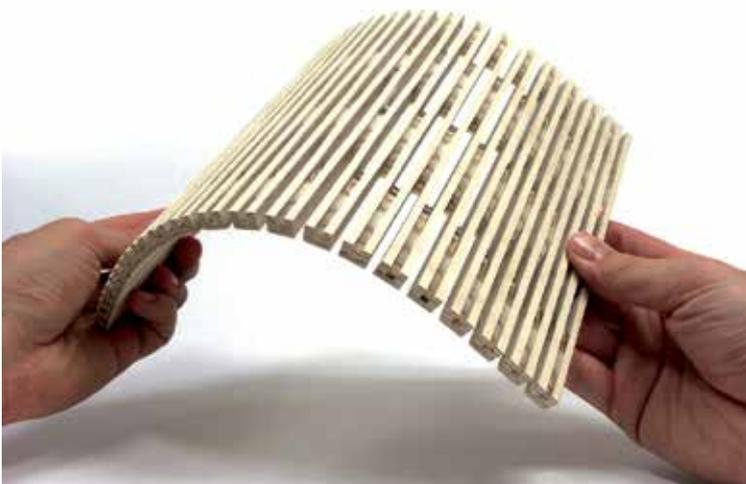
Using elements such as a quick-release button for fast movement or swivelling pressure plate, it fits every work piece perfectly and is therefore a must for every craftsman.

And as the icing on the cake, the two gear clamps in the GK30-Set are accompanied by an appealing multi-tool. It impresses with typical elements, such as extra-large shears, and is not available separately in this version. Each of its seven tools is black, thus making the tool a real eye-catcher and a collector's piece.

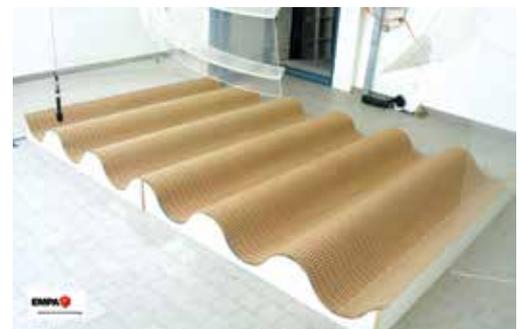
The GearKlamp is patent-registered and incorporates greater working safety, added comfort and as has no protruding handles, protects the joints and tendons and minimises the risk of damage or injury. The enclosed design protects against dust and dirt.

Innovative, customer-oriented solutions in clamping technology, cutting technology and precision steels are a tradition at the company. The bright, steel-drawing plant has been setting standards and has numerous patents for manual hand tools and the most state-of-the-art ultrasonic and eddy-current inspection methods in the field of precision steels.

Dukta bends it like no one else!



Dukta GmbH of Switzerland is now exporting its flexible wood to the US and Asia-Pacific. It is a sandwich of engineered wood and felt layers that allow the material to be bent and shaped readily into curves and contours.



Dukta's Zurich location serves as a development and design office, from which it helps clients develop new applications based on its internationally patented Dukta incision process, for use in architectural interiors and for numerous products.

Dukta has licensed building owners and designers, and wood products firms, to use its Dukta flexible wood, advising customers through technical and design matters. ▶

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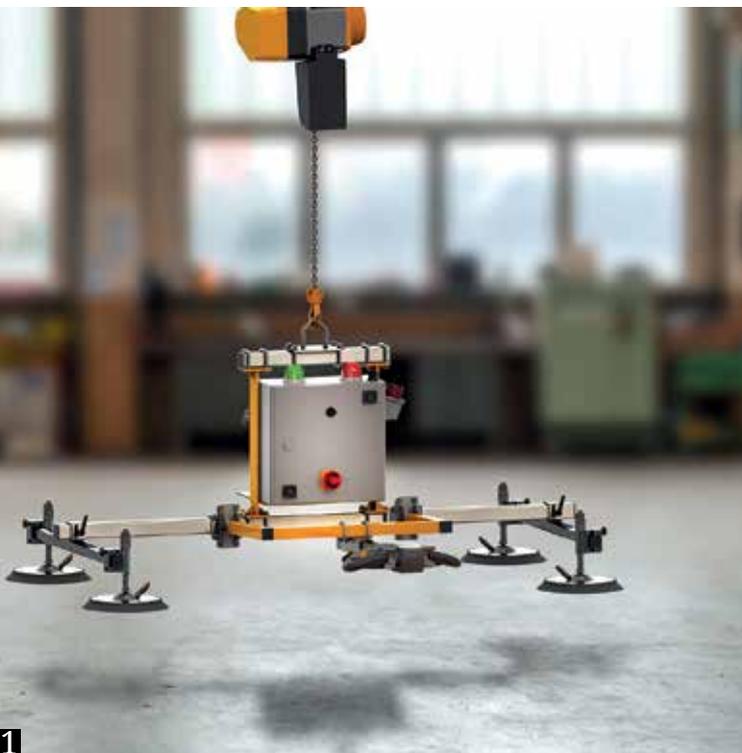
The complex, versatile and patented process has its roots in wood bending experiments dating to 2007. Thanks to a CTI research project and various exhibitions and awards, Dukta has become synonymous with flexible wood products throughout the world.

Two brothers, Serge and Pablo Lunin, tested alternatives to the well-known processes of steam bending and gluing layers together. They carried out numerous experiments

which showed that certain arrangements of incisions give the wood a great deal of flexibility, but also weaken it.

By 2013-14, work concentrated on large contracts such as the cinema and concert hall in Toni-Areal, as well as on the two large Wood Loop exhibitions in the Winterthur Museum of Commerce, and the Brengenzerswald Exhibition Centre in Andelsbuch.

EuroTech to present new lifting devices



1

1 eT-Hover Panel for horizontal panel handling.

EuroTech are leaders in the field of vacuum technology and implements standardised and customised handling and transport solutions. With three brand new products, the company will demonstrate its competence at the international trade fair for sheet metal

processing at the Blechexpo trade fair, in November.

In addition to a new eT-Hover Panel series lifting device for removal of narrow high-bay drawer racks, the vacuum specialist has expanded its product portfolio with other eT-Hover Modesty series lifting devices.

The vacuum lifting devices of the eT-Hover family are used for lifting vacuum-sealed, flat loads, such as glass panes, sheet metal and plastic or wooden boards. The lifting devices of the eT-Hover Panel series start at a load capacity of 250 kg. Depending on the base frame and equipment, such as longitudinal cross beam and suction plate selection, a maximum load capacity of up to 4,000 kg can be achieved.

As an extension of this series, a very flat version was designed for removal from narrow high-bay drawer racks. Things are made easier by a telescopic and swivelling handle with operating panel, which is also used in other models. The operating panel can be used to control all relevant processes if the user desires.



WOODNEWS

WoodNews thanks the various companies that have submitted information. For any editorial submissions, please contact Mr. Dhananjay Sardeshpande, Chief Editor, at dhananjay@pdatrademedia.com. The information published in *Notes and News* is as per the details furnished by the respective manufacturer/distributor. It does not reflect the views of WoodNews or of the management of PDA Trade Media.



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2

2 *eT-Hover Modesty for pneumatically or manually rotating and turning.*

A vacuum pump with an integrated non-return valve generates the vacuum. Devices of this design are currently available with a load capacity of 500 or 750 kgs.

The eT-Hover Modesty series lifting devices serve as an alternative to similar, more extensively equipped devices. Devices of this series are equipped with two handles for easy manoeuvring and positioning. Despite its simple design, it fulfills all required functions.

3 *Electronic hand-held suction device, type Nemo.*

The devices can be rotated pneumatically, but can optionally also be rotated manually. The new feature of this series is a version that pneumatically enables swivelling of the workpieces by 90°. Lifting devices of this series are operated entirely with compressed air; therefore an electrical connection is not necessary. Due to their compact design and vacuum generation by an ejector, these lifting devices have a very-low dead weight.

The Nemo type electronic suction device, modified by Eurotech, is a mobile, electronic, handheld suction device. With a holding force of up to 170 kg, the Nemo can be used on just about any surface. This handheld suction

device makes it possible to easily move various materials and place them down safely.

The vacuum pump installed in the handle generates the necessary vacuum to hold the workpiece steadily. The installed vacuum meter with red/green area is used for monitoring. The vacuum pump is equipped with an economy circuit. Once the pump reaches the safe negative pressure, it will be switched off. If the vacuum in the suction device drops, it will automatically switch on again.

The Nemo battery-powered, handheld, suction device is the perfect addition to the tool kit for a wide variety of professionals – from construction professionals and warehouse employees to service and workshop employees. In all sectors, where heavy lifting is the order of the day, this powerful tool minimises the risk of damaging expensive materials. Nemo maximises productivity while reducing the physical workload.



3

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Heavy Duty Helical Planer Cutter Heads with Changeable Knives
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Helical Planer Cutter Heads with Changeable Knives
Knife: 15 x 15 x 2.5 x 30°
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Changeable Knives / T.C.T



Spindle / Double Surface Planers Helical Planer Cutter Heads with Changeable Knives
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15 x 15 x 2.5 x 37°
30 x 12 x 1.5 x 35°
30 x 12 x 2.5 x 35°
14.6 x 14.6 x 2.5 x 30°



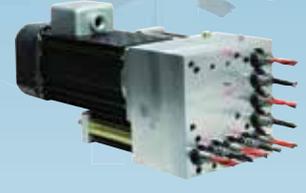
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WD213

| MODEL | PITCH |
|-------|----------|
| WD211 | 14~82mm |
| WD212 | 32~160mm |
| WD213 | 18~100mm |



WD315

| MODEL | PITCH |
|-------|----------|
| WD314 | 14~96mm |
| WD315 | 20~122mm |
| WD316 | 32~192mm |

CNC Tool Holder and Collet Series

HSK63F Series



Collet Type:
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Collet Type:
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Felder's panel saw for angular cuts



1

The new Format-4 Kappa 590 with double-tilting sliding table saw is the first of its kind. Combining precision with digital intelligence, the Kappa 590 delivers the highest accuracy in every step – every cut is a masterpiece of precision.

1 *Felder's Format-4 Kappa 590 with the double tilt circular saw unit.*

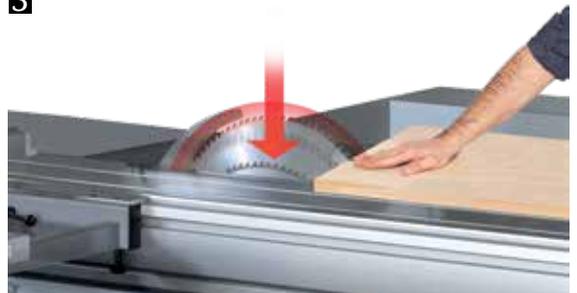
The machine is the benchmark for premium sliding-table panel saws with the highlight being the new, double-tilt circular saw unit. The double-sided tilt of +46 degrees each

2



2 *Felder's Kappa 550 incorporates the PCS system.*

3



3 *PCS triggers the lowering of the saw blade at the speed of light.*

offers significant advantages when doing mitre cuts of frame parts, with the visible side continuously on top, as well as complex compound cuts and grooves in mitre cuts.

The overhead saw-guard can be adjusted quickly and effortlessly for double-sided tilt or completely taken out of the work area.

With a tilt area of a total of 92 degrees the 550-mm diameter saw blade achieves an impressive 202 mm cutting height at 90 degrees, as well as 140.8 mm at 45 degrees and 118.7 mm cutting height at -45 degrees, the cutting height limit is eliminated.

The highly efficient synchronous motor offers

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maximum torque with high efficiency. The motor, with continuously adjustable speed control from 2,000 to 5,000 rpm, guarantees constant high performance and best power transmission with state-of-the-art poly-V belt technology.

Easy selection of the optimum rotating and cutting speed via the machine control is another unique feature.

All axes of the machine can be controlled ergonomically and intuitively by the central operating unit with 15-inch touch screen. The in-house software with graphical user interface, a multitude of programs, a USB interface and the prepared network connection make work easier and guarantee efficiency and productivity.

The new premium panel saw has also proven Format-4 virtues and quality features such as the completely maintenance-free tilt segment guide 'Easy-Glide', the patented 'X-Roll' format sliding table, the world's only tool-free 'Easy-Lock' saw blade clamp, the controlled 3-axes scoring unit with park position and much more.

4



4 The saw is ready to use again at the push of a button.

Safety innovation

The patent-pending safety innovation, xxx (PCS), is available as an option with the Format-4 Kappa 550 sliding table panel saw and supplements the existing standard protective equipment.

When the risk of an accident is detected, the device triggers the lowering of the saw blade under the saw table at the speed of light. The functionality, based on the electro-magnetic law of repulsion, allows for an extremely short response time of a few milliseconds.

The PCS safety lowering mechanism works damage-free and at no extra cost. The sliding table panel saw is immediately ready to use again at the push of a button. (www.felder-group.com).

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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 components. All the products are backed by dedicated service and guidance.

Jai currently manufactures 30,000 machines a year in its seven plants spread over 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.

The Optimus and Modula series are a range of solid wood machinery in the premium segment and have high-end features that are specially developed for units engaged in solid wood-craft business.



OptiCut 3.2 (auto) Beam Saw

This is a high-tech beam saw equipped with optimization software & a label printer and has unbelievable saw carrier speed and optimum thickness cutting, all adjustable to requirements. The stability and service life of the machine is indeed, noteworthy.

Other features include heavy-duty suspension grippers, which grip the panel perfectly, thus reducing labour intensity and improving production efficiency.

Its air-floating table helps avoid scratches on board surface and assures smooth board

movement that makes it suitable for heavy and big panels.

The HD Touch screen with optimized software programmed, provide safety and quick speedy cutting. It comes with label printer and ensures reduced wastage of material.



Opti Edge 6.5P High Speed Auto Edge Bander

This auto edge bander delivers high quality, precision and reliability perfected to the highest standard possible.

- High performance machine with high-feeding speed of up to 25 m/min that ensures more production.
- Easy accessible, user friendly Smart Touch PLC control panel. The corner rounding unit is controlled from the control panel, with the option of choosing the shape of panel.
- Motorized up-down movement of pressure beam for easy thickness setting.
- Automatic lubrication system circulates lubrication to the required parts of the machine, ensures efficient operation and increase life of parts.
- Safety air tank provision for non-dropping of air during process. Two tanks are provided, one for general air supply & other for specific round cornering unit.
- Model without Pre-Milling OptiEdge 6.5 also available.



Panel Saw J-3200.in

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Salient Features

- Sturdily built, heavy duty machine that suits Indian working conditions for precise cut with burr-free cutting.
- Heavy-duty, precision sliding table with linear bearing developed using advanced technology with multi-chamber system for maximum rigidity of the double-roller carriage.
- Lifting and tilting of saw unit by hand wheels both at the front 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 positioning.



J-5100Rc.in (Auto) Edge Bander

Sturdily built, heavy-duty machine that suits Indian working conditions, for precise application of edge banding material with round cornering. Can be used for edging the required materials like veneer, melamine, PVC or ABS to the linear edges. It has optimal features to make edge-banding extraordinary with a perfect finish.

Salient Features

- Robust feed chain & conveyor system with a German gearbox (with long-life synthetic lubricant) for effective pressure on panels.

- High-performance machine with feeding speed of 11 m/min gives more production.
- Innovative, pre-melting sensor-operated glue tank having glue-drop system which consumes less than 50% glue compared to other edge banders, resulting in increased profits.
- No setting required to change thin to thick PVC edge band.
- Three edge banding pressure rollers actuated by pneumatic cylinders, gives adequate pressure on edge for effective banding.
- High-frequency compact motors sliding on prismatic guide ways for perfect finishing with trouble-free performance.
- Easily accessible, user friendly Smart Touch PLC control panel positioned at machine in feed, for quick operations.
- All electronic & pneumatic parts are from well-known international brands.



J-3000.in (Semi Auto) Curvilinear Edge Bander

The edge bander has consolidated features along with fast-n-friendly controls and techno-trendy looks.

Salient Features

- The machine has a specially designed, hylum surface working table for heat insulation and side roller support at both ends, which helps in easy movement and feeding of work piece on the table.
- The machine guarantees perfect gluing on board as well as on tape at all times and is versatile and suitable for small and large manufacturers.
- The pneumatic cutting device can be set to actuate the cut of band for a pre-defined length, using an electronic counter.

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- The glue pot, glue leveler, wiper, extrusion screw and the heating element all make a bonding system.
- Hylum surface working table can be tilted from 0 to 45° & a unique “Swivel Bar Roller system” for guiding & supporting the work piece.
- Easily accessible, user-friendly PLC control panel positioned at machine front, for easy & quick operations.



J-2102.in Double head Multi Boring (Semi Auto)

The J-2102.in is the preferred machinery for the knock-down, modular furniture industry.

Salient Features

- Heavy-duty frame to hold boring heads with quick-change spindles chucks.
- Pneumatic cylinder for tilting of the tiltable head assembly from 0-90 degree.
- Elegantly designed, electro-pneumatic control panel.
- Horizontal & vertical Boring. For vertical boring application both heads work parallel vertically.



J-50T Cold Press

The machine combines maximum efficiency & reliable performance with minimum maintenance cost.

Salient Features

- Machine suitable for pressing various types of lamination on MDF, particle, plyboards, composite wood cork boards, fiber board, honey comb board for furniture industries.
- Manual & semi-automatic controls, emergency stop switches, motor overload relay. Timer control, can set pressing time according to production technology.
- Heavy-duty rigid construction to take care of pressing distortion with specially designed platen and base, to have uniform pressure system on work piece.

Leitz makes ‘Industry 4.0’ lighter

The term “Industry 4.0” has been, for years, the subject of numerous definitions and interpretations, which in turn are used in a wide variety of industries and technologies. In the wood processing industry, too, this topic, with its numerous types of design, has been part of a wide variety of forward-looking solutions.

With the LeitzXPert concept, Leitz convincingly demonstrates the combination of proven technologies and technical

applications. It is a complete package that makes the digital workflow and, thus, the advantages of Industry 4.0 available to the industry and stands for more efficiency and productivity in production and absolute flexibility and transparency of processes.

Future components of LeitzXPert are solutions that partly already exist in their original form as proven individual solutions. What is new is the creation of a uniform, digital service concept that meets requirements for

SLIM LIFT - TRIPLE E



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1

1 With the flat rate for tool service, Leitz offers its customers the possibility of cost-saving and process-optimized tool reconditioning.

2 Reliable supply of information for more efficiency, productivity and flexibility. The information platform provides Leitz customers with relevant data and information about production, service, process knowledge and tool technology. (Pix: Leitz)

information and data provision on a compact and clear platform.

Intelligent tool systems increase productivity and efficiency. Since the nineties, products equipped with data chips or Datamatrix codes have been a fixed and proven component of the Leitz tool programmes and are now standard for many of its products.

The clear identification of each individual tool is done by recognition of an individual serial number and thus enables the provision of corresponding extensive tool information by means of the App. Thus, tool information as well as supporting information can be passed on to the user for the respective application.

With the help of the App, information such as on service intervals or lifecycles, will in future be transmitted directly to the user and help increase flexibility, transparency and sustainability. In conjunction with the appropriate Tool Management model, such as

the Leitz Service Flatrate or the Complete Care Service concept, the simplification of the entire tool logistics can also be achieved.

Further advantages include increased availability, reduction of stocks, increase of process reliability, build-up of process knowledge or the simplified tool commissioning after sharpening. Valuable user information offers process and product know-how.

By connecting to additional information platforms, such as Leitz homepage or the Leitz Lexicon, users can optimally supplement their process and production planning in the future. In addition, there is the possibility of quick and direct contact with a Leitz Process expert or the personal product contact person.

LeitzXPert impressively demonstrates the advantages of digital process optimization, especially for small and medium-sized as well as craft-oriented companies. For Leitz, Industry 4.0 is a practical solution to support customers and LeitzXPert creates an intelligent App that provides tool-specific know-how in real time that optimally support solving manufacturing challenges.

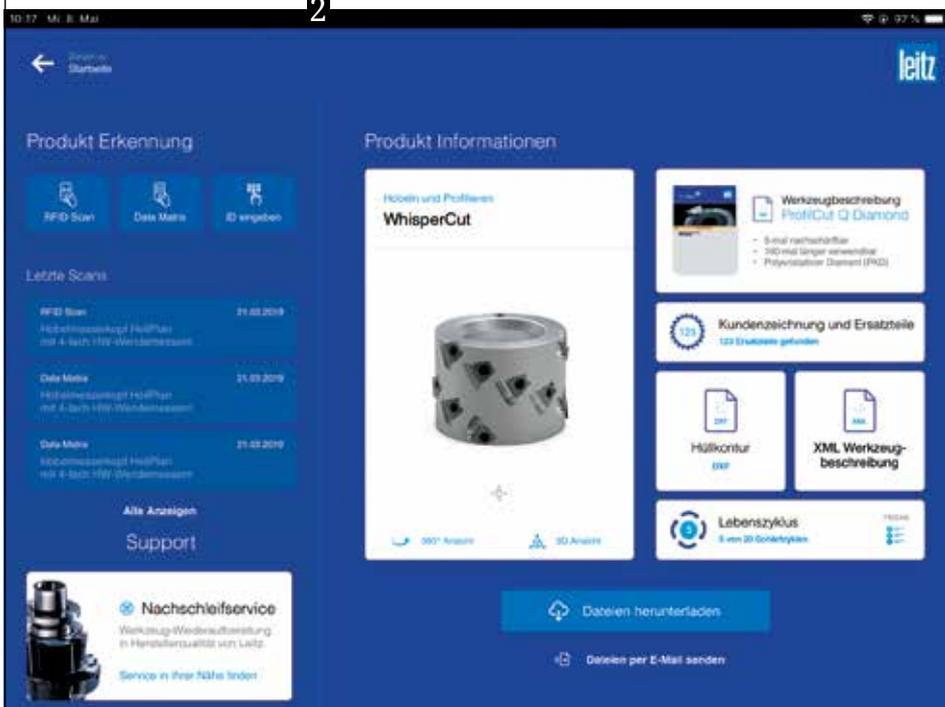
Personalised service

Around 15 million tools per year, including tools of any manufacturer, are efficiently serviced in Leitz's worldwide service center. More than 1,000 service employees work daily to meet the individual needs of the Leitz customers. 120 service locations all over the world, including 45 diamond competence centers, form a productive network of contact points for the reconditioning of tools of all kinds.

Leitz has also been a pioneer in the field of accompanying services and last year, the LeitzXPress Button, a technical service concept that enables customers to contact Leitz at the touch of a button via an online interface, was introduced.

The premium offer in the service sector is Complete Care, which combines various service offers including procurement, management and reconditioning of his complete tool inventory and training in the handling of tools.

2





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PlyMahal launches fresh laminates

With the arrival of the festive season, many people start revamping their homes to uplift the mood and welcome guests. While a few home owners opt to buy new furniture and décor items, others seek ways to stylishly refurbish the existing ones.

PlyMahal is launching an exclusive golden laminated ply collection that quickly transforms living spaces to a royal home. The Delhi-based PlyMahal is known for its range of decorative laminates, veneers and decorative panels that are innovative and luxurious.

The company has proved, time and again, that laminates are an integral part of interiors and the right ones can lift any dull space. The company strives hard to source the best products across the globe so that its clients can get a taste of superior surfaces.

The range of decorative laminates powered by PlyMahal has wide applications. For exceptional furniture items, glossy laminated sheets can do the trick. PlyMahal offers textured golden sheets that give a realistic look to both walls of a home and matt finishes to use in corporate offices.

The Metallic Magnificence collection by PlyMahal is masterfully engineered using robust innovative techniques making them architecturally grade and non-breakable. In addition to this, each design is water-resistant and termite-proof.

Decorative golden surface laminates are available in dimension of 2440x600 mm with a thickness of 1.5mm.

This means, the products are easily installable and require less possible maintenance. The rich decorative surface panels can be used in a wide range of applications including walls, doors, cabinetry, furniture, and commercial spaces.

PlyMahal sources its surfaces from around the world, including Korea, China, France, Italy and Germany.



Caple raises the bar of service standard in India



Precision grip ensures clean cut



1

In furniture production, every millimetre counts. Optimal arrangement of work pieces with different geometries is crucial when it comes to saving on expensive raw materials. Schmalz, the market leader in vacuum automation and ergonomic handling systems, offers a flexible vacuum solution that and holds on smooth surfaces and ensures short set-up times.

1 The vacuum blocks VCBL-G K1 can be placed directly on the wear plate of the machine.

2 Using the adapter plates, AP-G, the vacuum blocks VCBL-B can also be used on nesting machines.

The nesting process is commonly used to lower material costs. The individual elements are slotted together or nested, resulting in minimal waste. A wear plate is then clamped on the grid table of the CNC machine.

The vacuum is so strong that the wear plate is able to keep even the smallest milled parts safely in position. Horizontal processing, such as drilling, is not possible during nesting; but this is not a problem with this clamping system.

Flat construction

The vacuum blocks of the VCBL-G series are particularly suitable for use directly on the

MDF wear plate of nesting machine tables. This means the user does not need to set up the machine, which avoids long downtimes.

The suction cups are connected directly to the vacuum system of the CNC machine via hoses in order to generate the necessary vacuum. If the user places the work piece down, a touch valve with a soft surface activates the vacuum block – this protects the workpiece surface.

Unneeded suction cups can also remain on the machine table. The friction pad on the underside of the suction cup creates a high holding force, even on smooth surfaces.

Schmalz has designed the connection to the suction plate with a robust main body made from plastic so that the suction plate can be easily replaced in the event of wear. Another advantage of the vacuum block series is its minimal operating height of 30 mm. This makes the VCBL-G solution ideally suited to 3-axes machining centers with low Z values.

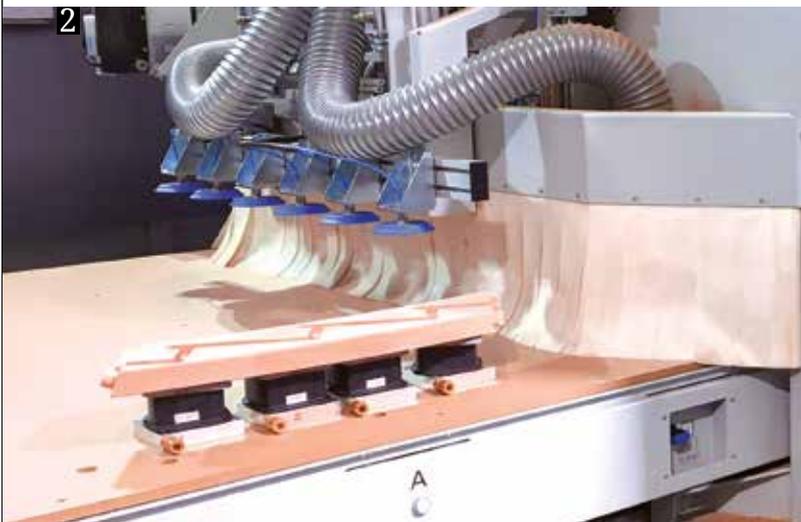
Flexible system

For users who want to use a vacuum block VCBL-B instead of a suction cup VCBL-G, Schmalz has developed the adapter plate, AP-G. The vacuum is still generated directly from the nesting machine system via a hose.

The suction cup mount includes a grid. The vacuum blocks can be inserted in the adapter plate in 15° increments in any direction, so that the suction area can be aligned as desired.

The modular system – vacuum blocks are available in three different heights and with four different suction areas – increases flexibility and shortens set-up time.

Due to the variable working heights, users can also use the Schmalz system for 5-axes machining centers.



2

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New features in Homag's woodCAD|CAM



woodCAD|CAM offers optimal work support: from planning and presentation right through to design and production. The continuous improvement of the design software always takes account of the customer requirements and the current market trends, thereby ensuring that the customer receives the greatest possible benefit.

The 2018 version focuses on process optimisation and user-friendly operation.

To increase efficiency in production, the Production Manager software bundles customer orders into production batches. Cross-order production lists, CNC data, and information for cutting optimization are created automatically and help to optimize the production sequence.

A further highlight is the new collision control. This allows collisions between connectors and between connectors and components to be detected automatically, which means that incorrect designs are avoided and any collisions that are found are marked and reported.

The optimized derivation of the drawing enables single part drawings to be

automatically generated as a three-panel projection. View drawings can also be labeled based on rules, and dimensions can be positioned in the drawing.

As part of the introduction of woodCAD|CAM 2018, versions woodCAD|CAM 11 and older versions will lose their update and support authorization. This means that from April 30, 2018, Homag Consulting and Software will no longer provide any updates and patches for these versions. Support, however, will continue to be available on request.

woodCAD|CAM is the software for furniture and interior design. Whether standalone furniture or complex room designs - the entire process from the first draft to the finished product is as simple as it is impressive. By mouse click, production drawings and bills of material are immediately available after finishing the design.

Design data are automatically forwarded to Homag Group CNC machines for further processing. An impressive photo realistic visualization provides not only a smooth communication with architects or building owners, but a successful sales or prototype presentation.

Kuraray has 'green' solution for white adhesives



Polyvinyl alcohol (PVOH) plays a very key role in the manufacturing of polyvinyl acetate emulsion (PVAc) as an emulsifier and stabiliser. PVAc emulsion is used mainly for woodworking, and PVOH plays an important role to influence its performance.

One of the important performance parameters in wood adhesives is water resistance. In general, high water resistance is achieved by using a cross-linking agent. However, the main cross-linking agent used is known to generate formaldehyde.

Formaldehyde is gradually emitted to the air and can, with prolonged exposure, cause serious damage to human health. The impact to children is more serious, and can cause chronic ill health.

The awareness to control toxic chemicals in the air, like formaldehyde and total volatile organic compounds (VOCs), for the safety of human health and environment is expanding in the world, and many countries have already successfully initiated the change in establishing their own local regulations.

The Japanese company, Kuraray, has been leading the adhesive industry's transition towards green chemistry and working towards environment-friendly solutions which benefit both consumers and the industry.

Kuraray's specially designed Exceval is a perfect and proven solution for consumers looking to achieve high water resistance in white adhesives with low or no formaldehyde emissions.

Keeping the global pollution situation in mind and the benefits of the green science for consumers and industry, Kuraray is looking forward to partnering with the Indian adhesives industry to reduce emissions from formaldehyde-based chemistry.

The Tokyo-based Kuraray Co Ltd, the pioneer in polyvinyl alcohol (PVOH) technology, has a very successful history of over 90 years in synthetic fiber innovation and a global presence.

In Japan, formaldehyde and other toxic VOCs have been controlled by law in light of the social movement to avoid "sick house syndrome" since the turn of the century.

The permitted formaldehyde concentration in the air is below 0.08 ppm, and the guideline strictly prohibits using a cross-linkable monomer generating formaldehyde. Korea, China, and indeed much of Asia and the developed world, has embraced strict regulations to curb VOCs in interior spaces.

Kuraray India has a business office in Saket, New Delhi. For details, email kishor.bhandary@kuraray.com.



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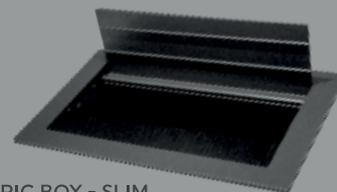
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1

One-stop shop for raw material

Pyramid Timber Associates in Mysuru (Karnataka) prides itself in being the one-stop shop for the finest quality of raw materials in the industry today, offering the best quality decorative veneers, kiln-dried sawn lumber, pre-grooved veneer door skins, fleece-backed veneer rolls for profile wrapping, and ready-to-use live edge table tops.

1 *The well-stocked veneer warehouse at Pyramid Timber Associates in Mysuru, Karnataka.*

Veneers are produced from logs sourced from across the globe, and even custom sliced, based on the customers' requirements of thickness and lengths. For door and panel manufacturers, veneers are readily available for selection from the state-of-the-art warehouse that stocks over 1.5 million square metres of decorative veneer.

Pre-grooved veneer door skins have eliminated the issues of veneer delamination during pressing and veneer chattering at the time of grooving. These skins have made manufacturing of grooved flush doors extremely convenient.

A wide range of designs are readily available and even custom designs are manufactured.

Pyramid Timbers is a leading supplier of kiln-dried lumber in the country today, with an

installed seasoning capacity of 16,000 cubic feet. It ensures sawn sizes with optimum moisture content are supplied. A wide variety of hard and softwood species are available in various thicknesses.

Since 1987, Pyramid Timber is engaged in the manufacturing of wooden doors, door frames, decorative veneers, finger-jointed boards and wall panelling. It has a manufacturing facility spread across 3,00,000 square feet and a team of dedicated and technically skilled workforce, along with a strong brand presence.

Pyramid Timber has grown by initiating innovation and advanced technology, coupled with old world craftsmanship, resulting in an unmatched source for fine products and the ability to anticipate and cater to the changing market trends.

Backward and forward integration in the supply chain and manufacturing ensures that the quality measures are completely in the control of Pyramid Timber. Today Pyramid Timber has grown to become the largest manufacturer of pre-hung door sets in the country.

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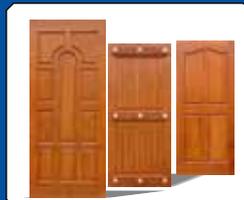
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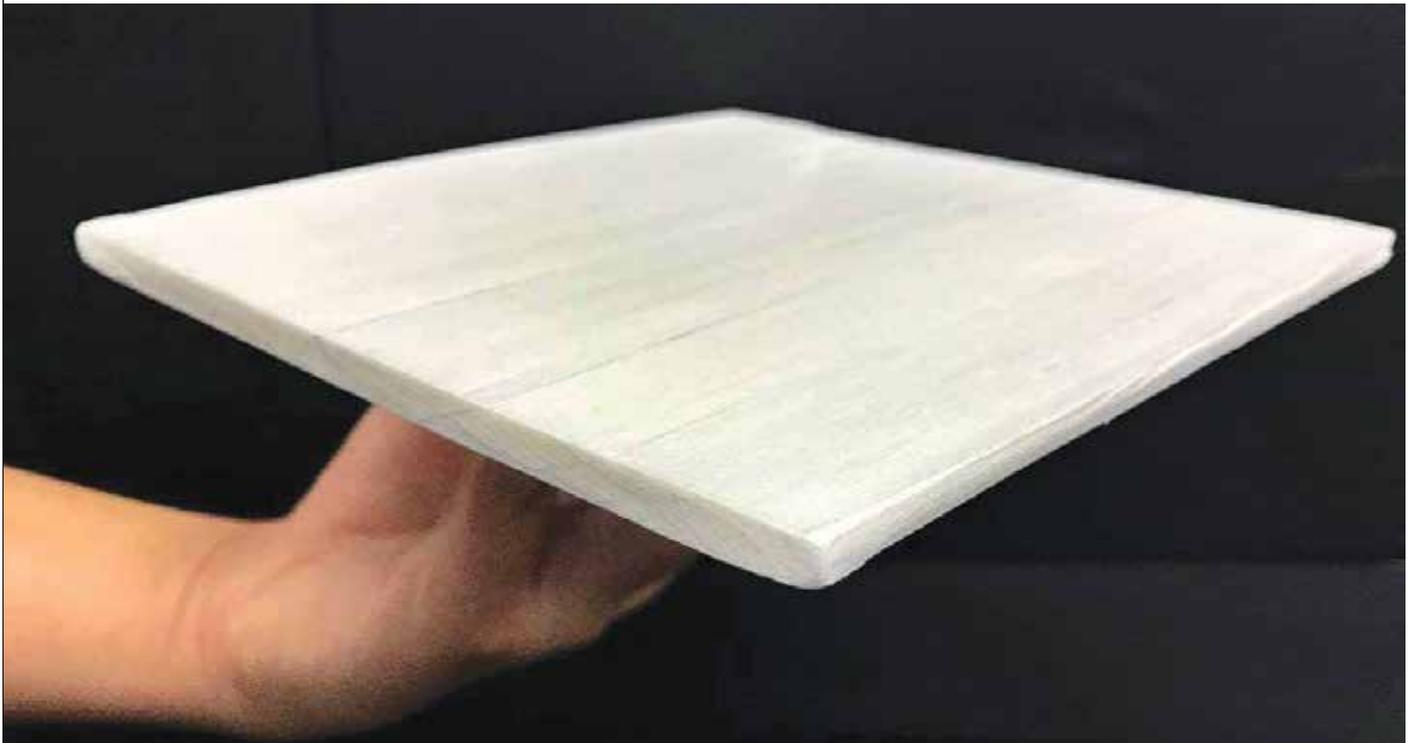
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Engineered wood is 'cool'

Researchers at the University of Maryland and the University of Colorado hope to find a passive way for buildings to dump heat sustainably. The solution is wood, which is already being used as a building material and is renewable and sustainable.

Using tiny structures found in wood – cellulose nano-fibres and the natural chambers that grow to pass water and nutrients up and down inside a living tree – the researchers engineered wood that radiates away heat.

The Maryland team soaked basswood in a solution of hydrogen peroxide, which destroys the wood's lignin. It then used a hot press to compress the remaining cellulose and hemicellulose components together. To make it water repellent, they added a super hydrophobic compound that protects the wood.

Researchers tested the bright white material, which reflects virtually all incoming light, on an Arizona farm one hot afternoon. They found that the cooling wood stayed an average of 6 degrees Celsius cooler than the ambient air temperature, even during the hottest part of the day.

It stayed 12 degrees cooler than natural wood, which heats up far more easily in sunlight. The team estimated that in buildings constructed since 2004, the material would save 20% in air-conditioning costs. In desert regions, the material could save AC costs by as much as 60%.

Wood isn't regularly used in roofing though, as it is more flammable and less durable than asphalt shingles. It also would make heating a building harder and more expensive.

The Maryland team's "superwood" engineered material is more than 10 times stronger than natural wood, but six times lighter and five times thinner.

Other engineered wood materials are on the rise. One such material involves marine tunicate, an exotic sea invertebrate, which has been combined with wood pulp to form a composite material that is flexible, sustainable, non-toxic, and UV light-reflective.

The material could be used in construction, food packaging, bio-medical devices, cars, trucks, and boats, say researchers.



Wood-based biofuel to save the planet?

The Forest Bioproducts Research Institute's (FBRI) pilot plant at the University of Maine has turned wood biomass into clean crude oil with heat and pressure, rather than with the use of chemicals.

According to Hemant Pendse, director of the FBRI, the crude oil being produced from the plant doesn't contain sulphur, making it cleaner than other crude oils.

Pendse explains that undergraduate students were experimenting with salt and high temperatures when they found that a particular kind of mixed-salt produced crude oil vapours. With a 20-minute process of high heat and pressure, wood pulp is turned into acid before it is turned into salt, which produces the crude oil when introduced to high temperatures.

The current production amounts are small, about 1 tonne a day, but the private sector is interested in the engineering data, which is a patented piece of intellectual property available for companies to amplify research.

FBRI has also been sending samples to the United States Air Force, which is testing the specifications to see if military and commercial aviation can use the Maine-made refined jet fuel as a sustainable option.

Additionally, the Department of Economic and Community Development is already implementing the technology in Maine. Its commissioner, Heather Johnson, says that a \$750,000 investment in Biofine will make an additive to home heating oil, which would allow more efficient heating oil without converting or modifying burners.

"Wood-based biofuel is about 60% lower on green-house gas emissions than traditional diesel fuel," Johnson notes. "It will help support and strengthen other uses for wood products and will have a positive impact on climate change."

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When kids crafted their own chairs

Mumbai-based Solli Concepts recently organised a unique workshop for children to teach them the basics of woodworking. It focused on imparting carpentry skills to the young ones under the supervision of parents. About 30 children, under parental supervision, learnt how to measure, angle, cut, saw, drill and sand wood.

The children created an interesting piece of furniture: a star-gazing chair that was taken home by them as part of the learning experience. Solli Concepts founder and designer, Sohel Contractor said, "It is important for the younger generation to be exposed to creating and crafting things by hand."

Solli Concepts spearheaded is a design studio dedicated to the creation of hand-crafted, timeless furniture showcasing the innate beauty and authenticity of wood and its unique ability to fuse with other natural materials. (www.solliconcepts.com).

Ebco addresses furniture cluster meet

The Tamil Nadu Modular Furniture Manufacturers' and Traders' Association successfully conducted its Furniture Cluster Meet at Kodaikannal recently. The main objective of the gathering was to impart knowledge on expanding business, new products and innovations through presentations, technical workshops and question-answer rounds.

Speaking to the packed audience at the event, Mr Rajesh Nair, Director of Sales at Ebco, spoke on what ails the industry, the role of the

CEO in a company, why many have not made it big, lack of product focus, marketing/branding themselves, need for funding, financial discipline, creating core team in their respective companies, etc.

He highlighted his company's experience with its pan-India display centres and how they impart training to technicians, carpenters on a regular basis with respect to installation and fitment. Mr Vineet Kamath, Regional Manager Sales at Ebco, also conducted a technical workshop during the event.



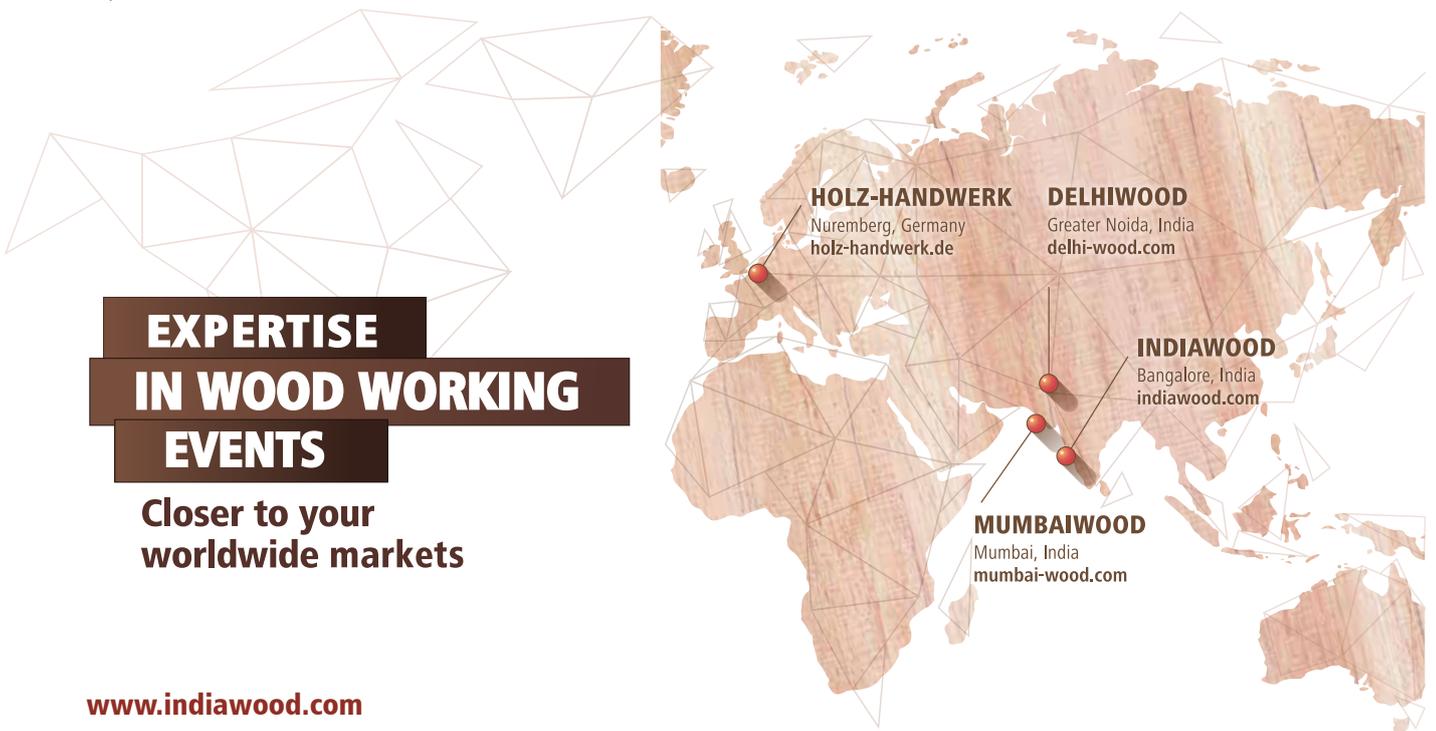
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Godrej Interio to launch e-commerce platform

In a bid to tap the growing ecommerce market in India, the Godrej Group is planning to foray into online furniture retail through Godrej Interio, its furniture retail arm.

The company has also confirmed an investment of about US \$62.6 million to

facilitate online retail over the next three years. The investment will allow Godrej Interio to enhance its production capacity. It will compete with UrbanLadder, PepperFry, Furdo, FabFurnish and Furlenco.

Godrej Interio currently has about 52 company-owned stores. As per a recent report, it will look to add another 8-10 stores, in line with the new development.

The company is now focussing more on a franchise model.

Kurl-on in expansion mode

Leading mattress seller Kurl-on has recently ventured into home comfort products. It plans to open multiple flagship stores to display the mattress and is also tying up with companies like Portico, Obsession and Iris so that their products will retail from these stores.

Kurl-on operates with 9 factories in India, spread across different regions and are setting up three more factories in Bhubaneswar, Guwahati and Anantapur. The company operates about 1,300 franchise stores and have opened 65 stores. And by the end of this year will have around 100 stores to showcase mattress and home-comfort in a new way.

In three years, the company plans to clock Rs 2,000 crore in revenues. Kurl-on's plans to further expand its market share by increasing



its focus and catering to the next generation with a slew of innovative products and technology.

British Columbia girds up to meet challenges



British Columbia's Council of Forest Industries (B.C. COFI) released a plan – "SmartFuture: A Path Forward for B.C.'s Forest Products Industry" – with 60 policy choices that can be

made today to secure a stronger future. The forest industry has been a cornerstone of the B.C. economy, generating about 1,40,000 jobs in the Canadian province.

Some of these policy choices can be implemented by industry, others will require government action, and many will require the collective effort from all those involved in the sector.

The 60 choices for a better future are outlined under five major areas: Invest in, and protect, B.C.'s working forest land base, have smart rules to protect the environment and encourage investment, strengthen participation of partnerships with communities, double down on market and product diversification and be the global hub for expertise in low-carbon, green building.



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Xylexpo 2020 to introduce focus components

Xylexpo, the international showcase of wood and furniture technologies and supplies for the first time will span four days instead of five. It will also show the woodworking business and furniture production in a new light following the momentous change of Industry 4.0. The changes have been appreciated by the industry with big players like Biesse, Cefla, Homag, IMA, SCM, Weinig leading the group.

The event will also see the debut of “Focus

Components”, an area dedicated to supplies, components and semi-finished materials for the furniture industry.

The new format is a collaboration with MADE EXPO who will contribute with their experience and relationship with architecture and many big industry players.

The project will revolve around the possibility for exhibitors to have a dedicated area to introduce their products and showcase their strategies and organization.

Do endangered woods make better guitars?

Some of the woods used for guitar backs are revered by guitar players for their acoustic qualities and tonal superiority. A study led by Lancaster University tested six steel-string acoustic guitars which were specially built.

They all had the same design and material specifications except for the back and side plates which were made from Brazilian rosewood, Indian rosewood, Mahogany, Maple, Sapele and Walnut, of varying availability and price.

Overall sound quality ratings were then given by 52 guitarists who played the different guitars while wearing welder’s goggles to prevent visual identification. They gave similar ratings to all six guitars, while blinded tests indicated that they could not easily distinguish the guitars by their sound or feel.



The results suggest that the back wood has a negligible effect on the sound quality and playability and that cheaper and sustainable wood can be used as substitutes of expensive and endangered wood without loss of sound quality.

This is one of the few studies that explicitly address the issue of back wood species combining physical and perceptual measurements.

Sarawak sourcing more from plantations

Increased exports of plantation logs from Sarawak Logs from industrial plantations are fast becoming a major export for Sarawak as production from the natural forest has been reduced drastically.

According to Sarawak Timber Industry Development Corporation (STIDC), in the first half of 2019 Sarawak exported over 399,000 cu m of plantation logs, mainly acacia mangium, most of which was shipped to Indonesia.

Of the total log export volume of 731,758 cubic metres in the first six months of 2019, plantation logs accounted for about half. Acacia Mangium exports have expanded rapidly since 2013 when some 147,100 cubic metres was exported.

However, expansion of the planted area has fallen far short of the State target of one million hectares for 2020. Meanwhile some Japanese companies have also been testing acacia mangium and falcata as alternative raw material sources.

Local manufacturers have noted an increase in imports of birch plywood from Russia, which has gained market acceptance.

American hardwoods do not need to be certified



American hardwoods are legal and sustainable in line with all relevant international standards, according to the recently revised Seneca Creek ‘Assessment of Lawful Harvesting & Sustainability of U.S. Hardwood Exports’, as well as the Technical Review Panel commissioned by the American Hardwood Export Council (AHEC). Together the conclusions provide a credible assurance that the U.S. hardwoods do not need to be certified.

The study also states that ‘the analysis presented in the report can serve as an alternative to forest management and chain of custody certification for purposes of demonstrating low risk of illegal or unsustainable hardwood sourcing from the United States’.

It also confirms that all U.S. hardwood-producing states are at a low risk of sourcing illegal hardwoods, according to the requirements of the EU Timber Regulation (EUTR), Australia’s Illegal Logging Prohibition Act, and Japan’s Goho Wood program.

Wal-Mart sourcing more goods from Vietnam

Wal-Mart wants to widen the as range of Vietnamese goods in its stores Vietnamese products continue to attract foreign retailers. Recently, representatives of Wal-Mart were in Vietnam to explore opportunities to expand its network of suppliers.

Wal-Mart now has stores in 28 countries with a total turnover of over US\$500 billion 2018 and the stores are visited by an average of nearly 270 million people per week.

To meet consumer demands it wants to widen the range of Vietnamese goods in its stores and is willing to provide technical assistance and advice on legal compliance for the various markets.



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Machine cleaning & checking

- The machine and working area must be clean and devoid of working scraps and anything that could hamper the working cycle or could access the machine itself.
- No material not needed by the machine should gather on it preventing safe operation and causing danger to the operator during the normal working-cycle.
- Regular cleaning of the machine and, in particular, the table and guides is an

important safety factor. Not doing so can be an obstacle for correct machine movements and could damage machine efficiency.

- Do not use detergents or lubricants.
- Make sure the machine is lubricated regularly.
- Check the electric system safety for the condition of the electric cables. Make sure there are no signs of wear and tear, etc.
- Do not press work pieces that are too large or too small for the machine to handle.
- Check the clamping of the various mechanical components.
- Check the oil level in the tank weekly, and top up, if necessary.

Problems/Causes / Remedies

| Problems | Causes | Remedies |
|----------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------|
| Machine switches off by itself during operation | Power short circuit or tripping operation | Remedy cause of phase failure. |
| | Too hot to shut down the circuits | Adjust the circuits and put the hot relays reset |
| Upper table is unbalanced | Maladjustment between balance tooth of rack and lifting gear wheel | Adjust till it meshes. |
| | The screw of oil pump is loose | Tighten it. |
| Oil leak on any joint | Loose joint | Tighten it using PTFE tape. |
| No effect on pressure | Pressure valve or electromagnetic ball is damaged | Change a fitting value. |
| | Oil circuit has leakage | Check it. |
| Motor switch ON but press is not ON or there is noise from oil pump. | Oil pump | Replace with a new pump. |
| Pressure Gauge into pressure too fast | Hydraulic Control one –way valve or Electromagnetic ball is damaged | Change it. |
| Oil raw foam | Inlet link leakage | Tight it or change it. |
| | Liquid level too low | Feed oil up to level. |
| | Oil quality wrong | Change oil. |
| Platen swinging while lifting | Trolley of the lifting position eccentric shaft bending | Change the Eccentric Shaft. |
| No lifting platen while pressing the button. | power shut down | Switch on. |
| | Problem in power phase | Check & Correct. |
| | Breaker not connected | Connect. |
| | Thermal relay or contactor problem | Check & replace. |
| | Electromagnetic valve is damaged | Check & replace. |
| | Pressure gauge problem | Check & replace. |
| | Intermediate relay is damaged | Check & replace. |

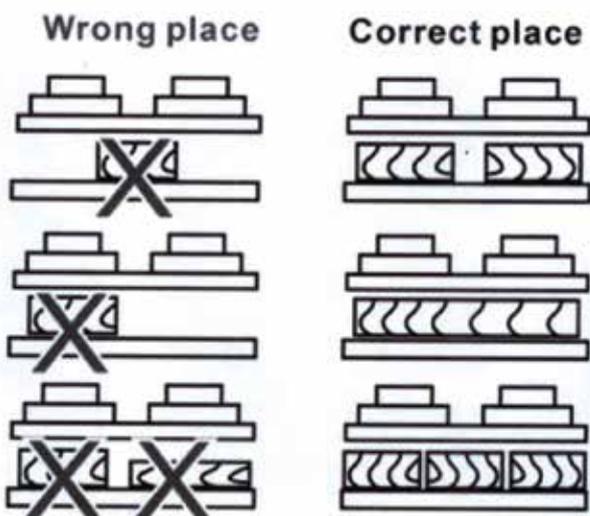


Figure For inserting Workpiece:

Workpiece should be evenly placed in the middle of two cylinders, with same thickness as shown in Figure. It is strictly prohibited to place or press workpiece with uneven thickness, to avoid seriously damage to the machine.

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INTERMOB

12-16 October, 2019

Venue: The Tuyap Fair Convention & Congress Center,
Istanbul, Turkey

This 5-day event is the most important trade fair for the wood industry in Turkey. It showcases an extensive range of products such as machinery and technical equipment for processing forestry products, semi-finished products, surface finishing, assembly and packaging, and brings together local and international companies involved in the industry. Wood processing machinery, cutting tools and hand tools will be on display at this event.

www.intermobistanbul.com

SICAM 2019

15-18 October, 2019

Venue: Fiera di Pordenone, Italy

SICAM is an international trade fair for components, technology products and accessories for the furniture industry. It presents international exhibitors and is an opportunity to view the latest products and trends in the industry. Because of its diversity, this exhibition is an ideal platform for manufacturers and suppliers to establish new contacts. This annual fair is open for trade visitors only.

www.exposicam.it/en

WOODEX 2019

03-06 December, 2019

Venue: Crocus Expo, Moscow, Russia

Woodex is Russia's leading international industry event where well-known manufacturers and suppliers demonstrate their latest equipment and technologies for woodworking, furniture production and wood waste utilisation.

The exhibition, held biennially, is supported by the European Federation of Woodworking Machinery Manufactures (Eumabois).

www.woodexpo.ru

CAIRO WOODSHOW

05-08 December, 2019

Venue: Cairo International Convention & Exhibition Centre, Egypt

Cairo WoodShow is the premier destination for wood specialists from across the globe. It is the region's only dedicated business-to-business meeting place for the wood, wood accessories and woodworking machinery industry and is one of the largest and most developed international exhibitions in North Africa. The fifth edition will provide opportunities for business professionals not to just meet industry experts but also learn about the latest technologies and products.

www.cairowoodshow.com

EVENTS CALENDAR

IFMAC

9-12 October, 2019

Venue: Jakarta International Expo Kemayoran, Jakarta, Indonesia

The only dedicated exhibition for the furniture and the woodworking sector, IFMAC+ Woodmac is the leading procurement source where around 250 industry leaders will gather. It is positioned as Indonesia's premium trade exhibition that presents high-technology machinery, unique products and creative manufacturing methods for the furniture market. It is also the industry's foremost sourcing, procurement and information event for the furniture manufacturing and woodworking sectors.

www.ifmac.net

HOLZ BASEL

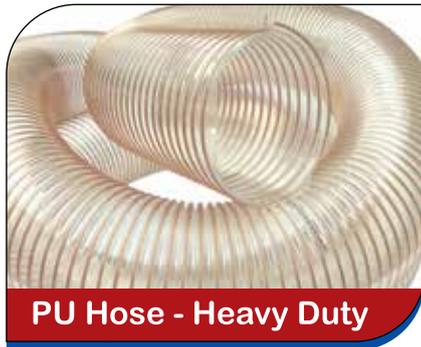
11-15 October, 2019

Venue: Basel, Switzerland

The Holz, first introduced in 1957, is the leading Swiss exhibition for the woodworking industry and is held once in three years. Around 350 national and international exhibitors will be introducing their latest innovations in machinery, tools, materials and accessories at this time. Just about everyone in the building, construction, infrastructure sector, will be visiting the trade show.

www.holz.ch

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