

MADE TO MEASURE

This year's Focus on Germany feature sees us start with measurement and spark detection technology supplier Electronic Wood System (EWS). Stephen Powney speaks to EWS general manager Mr Hauke Kleinschmidt and head of R&D Dr Konrad Solbrig

Our annual Focus on German-speaking countries strives to bring updates from wood-based panels technology suppliers and this year we again contacted several companies to look at developments, innovations and give their assessments on markets.

First of all, we interviewed Electronic Wood Systems (EWS), founded in 1996 by Hans-Peter Kleinschmidt and which operates in the fields of measuring systems and spark detection equipment. The company is based in Hamelin near Hannover.

Its measuring systems for the panels industry cover thickness measuring, blow detection, foreign body detection, area-weight scales and scanners, moisture analysers and laboratory systems.

EWS general manager Hauke Kleinschmidt, son of the founder, joined with newly promoted head of research and development Konrad Solbrig to update readers about their latest news and developments, which includes the development of new systems and a factory expansion.

Reflecting on a unique two-year period, Mr Kleinschmidt remembers that EWS was about to embark on a site expansion project at its Hamelin facilities just before the

Covid-19 pandemic struck.

"At the time we wanted to sign a contract to extend our shop floor building because of good business but we did not sign it because the coronavirus first wave hit and business went down very much," said Mr Kleinschmidt.

"Nobody really was investing money because the pandemic was new and uncertain.

"About 99% of our customers were in foreign countries and the borders were closed, with our technical people unable to travel to do machine start-ups or maintenance. But the company could still do business with its existing orders and spare parts."

By the beginning of 2021 people were used to the new situation and travelling started back up slowly.

Mr Kleinschmidt explained that the wood-based panels manufacturers were doing amazingly well, with high sales and capacity utilisation levels.

"But they were not placing orders for measuring machines and we all wondered why not? If you have a production line and it's running perfectly and you make a lot of money, of course you won't want to stop it for a single hour as this costs a lot of money.

But you cannot always run it non-stop, you have to do maintenance on the production line sometimes."

By the middle of 2021 business was OK, but in the second half of 2021 something strange happened.

"It was like someone had turned on an afterburner in our business [with increased enquiries and orders]. At the moment we have a lot of work and our shop floor is full. So we now have to extend our company building, two years after we originally intended to!"

The 300m² extension will happen in the summer of 2022 and will increase the facility's size by one-third. EWS also has an option to rent a neighbouring building to help it through a busy 2022.

Mr Solbrig said the expansion is also about optimising the production process.

ADAPTING TO THE PANDEMIC

EWS believes the return of its technicians to travelling helped business to increase, allowing servicing and spare part order demand to rise. In fact, it is currently recruiting additional service technicians.

Mr Solbrig said the trend of customers unwilling to stop production lines in



Above: The Hamelin base of EWS



Above left: The SicoScan concept is a partnership between EWS and Siempelkamp
Above right: Konrad Solbrig and Hauke Kleinschmidt

good business times has made EWS make improvements in terms of short commissioning and start-up times to mitigate downtime during modernisation and also new production line projects. This involves optimising of systems and processes.

Mr Kleinschmidt added that pandemic positives had included the ability to start some machines up at customers' sites remotely with customer support.

"Nobody is shy anymore about sitting in front of a camera and using Teams and Skype. In the future, I think it [machine start-ups] will be a mixture of Teams meetings and travelling."

For service and startup, however, it is preferred to have the EWS expert on site, which has certain benefits for all parties and finally reduced time exposure.

EWS has invested considerable time in developing individually suited maintenance management concepts mainly focusing on preventive maintenance.

This includes the on-site service, a spare parts package and consideration of specifics of the production line and performance capacity of the line.

Mr Solbrig said a modern high speed thin MDF line would have different requirements compared to an OSB production line with older generation production equipment. These different conditions create different demands for the measuring equipment.

EWS recommends this preventative/individually tailored approach with customers for their measuring systems and also with the spark detection systems.

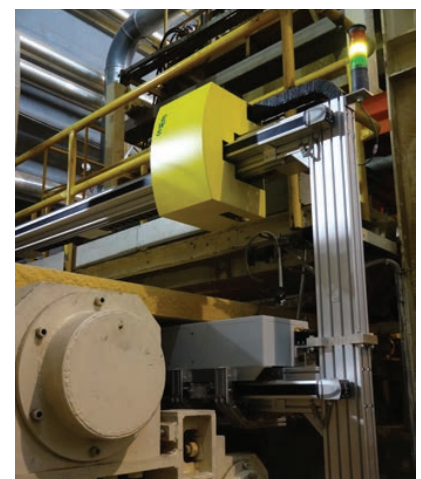
"You can decrease the downtime of your

production line so that all the equipment is effective. Then measuring systems are able to do what they are intended for – providing reliable data from the manufacturing process," said Mr Solbrig.

This is a bit like changing worn car brakes before they fail, explained Mr Kleinschmidt.

Siempelkamp has been a long term customer and partner of EWS. In 2007 the companies signed a contract that sees EWS machines incorporated into Siempelkamp production lines under the name SicoScan. Today, business with Siempelkamp represents a significant share of EWS' turnover.

Mr Kleinschmidt explained that the partnership represented much more than EWS technology in Siempelkamp livery – development work has created a concept



Above left: EWS plywood quality control system **Above right:** Mass-scan mat area weight measurement

where the measuring and spark detection technology communicates uniquely with the Siempelkamp technology world.

Mr Solbrig said the SicoScan concept was ahead of its time when developed and fitted into the Industry 4.0 way of thinking.

"We optimised this concept of SicoScan where we have a very deep integration of the measuring systems into the production line," he said.

"There are hundreds of pages of documentations and interface specifications for all of our systems where we have clearly defined how our systems and how Siempelkamp world works together."

This, he says, means panel industry customers get well prepared interfaces, which makes the line start-up time very easy, with integration already in place.

To date, around 170 Siempelkamp production lines have been supplied with this measuring system concept.

EWS also worked with Siempelkamp on the latter's EcoScan technology, also a part of the SicoScan family. This is an X-ray scanning system for the forming line, featuring two scanners to measure foreign body detection and the area weight measurement, giving reliable data to optimise forming processes.

RESEARCH & DEVELOPMENT

R&D is a strong focus area for EWS and recently Mr Solbrig was appointed head of R&D – he was previously head of technology, wood based composites.

Former university researcher Mr Solbrig started at EWS in 2016, bringing with him experience in wood technology, and he has been involved in development work, gaining experience with all the systems in the different applications.

His promotion brings R&D for both divisions – measuring systems and spark detection – together and is also intended to future focus the company and ensure stability.

The very experienced Matthias Fuchs is still responsible for all the technical management.

"Something that I really like here at EWS as an engineer is that we are allowed to apply new approaches and apply new research in order to put all of our innovations on a solid scientific foundation," said Mr Solbrig.

"This is possible for a small to medium sized enterprise like us are because we are very flexible."

Its R&D approach is not to distinguish directly between measuring systems or spark detection systems, but as a developer of technology for the wood based panel industry and considering the requirements of customers and their applications.

Currently, EWS is developing a new generation blow detection system based on ultrasound technology.

The development is intended to provide panels manufacturers with additional flexibility against a background of increasing product specifications and use of different raw materials.

Mr Solbrig said hybrid panel products had very different production set-up requirements compared to standard MDF, OSB and particleboard, including different material in different layers.

"There is a huge product range and we will serve this range with the outstanding flexibility of our new system."

Customer changing requirements for different thickness boards, such as thin MDF, is also factored into the new system so it can adapt easily to future board specifications change on the production line.

EWS is also busy developing the second generation of its spark detection system.

"We decided to have a change in the basic concept with both developments and we're focusing on our core competencies, which is measuring and detection applications, considering the material and the process," said Mr Solbrig.

This means sensors, system control and data evaluation, while IT components are supplied in tandem with sub suppliers and partners.

FUTURE BUSINESS PROSPECTS

EWS is predicting the next two years will see strong demand for its systems.

"The next year really is already full.

Siempelkamp is already placing its orders for most of its 2022 projects," said Mr Kleinschmidt.

Normally, the service team can help on the production floor during busy periods, but demand for service technician visits is also strong, which is why EWS is recruiting new service personnel.

"We can see what happened to markets

in the past – how our sales went up or down depending on the performance for instance of the furniture or housing sectors.

"Technology suppliers are usually a little bit behind the final customers, so you can predict a little bit from what's going on. If the panel prices go up or down, or if the demand from the final customer in the furniture sector goes up and down and so on."

Mr Kleinschmidt said another dynamic market factor was the shortages/delays of materials and components from sub suppliers. Delivery times for plastics or electrical components like semi-conductors are variable currently.

This situation does, however, give impulses for R&D as it's important to not get into situations where reliance on availability of one component impacts your ability to deliver a whole system.

"Already some months ago we noticed this situation and knew we had to buy more materials and components so our stock is really full like never before in the last 25 years," added Mr Kleinschmidt.

Framework agreements with suppliers specifying the amount of materials it will buy in advance for the year is reflected in EWS agreements with customers to order early so projects can be commenced on time.

Mr Solbrig said the situation required good organisation and project management.

"We ask to have customers' budget planning for the next year in order to meet the delivery date in 2022," he said.

EWS' distribution partner in China – Beijing Euro-China – has already ordered for 2022 and will receive three shipments of spark detection components for sale during the year. "This is fantastic, you can plan all these things in the production much better if you get the orders already," added Mr Kleinschmidt. ●



Above: Spark detection and extinguishing system