



# THE WORLD OF MEASURING SOLUTIONS

FOR WOOD-BASED PANEL PRODUCTIONS

# SAFETY AND OPTIMAL PRODUCTION CONTROL



02/03

## INNOVATION IS OUR TRADITION

Identify quality deviations at an early stage and take effective counter-measures at the right time, optimise the use of resources, avoid production losses. These are only some challenges which we want to help you to overcome with our measuring technology!

The measured values recorded with the GreCon measuring systems provide exact data and information which you need to control your production plant efficiently and reliably. Our measuring systems support your production process, e.g. from the wood chips cleaning via the thickness and moisture measurement to the edge inspection of coated wood based panels. Reliable measured values facilitate an exact production of the product quality which your customers request.

Detect and eliminate sparks before a fire breaks out! Since more than fifty years, GreCon spark extinguishing systems have protected industrial production plants in the wood based panel industry. They are used to monitor pneumatic and mechanical equipment, silos, filter systems or mills to detect sparks also in demanding environments and activate the corresponding protection measures within milliseconds - without any interruption of your production. It happens "without being noticed" in the background.

The uniform user interface of our systems makes the handling of the GreCon product family easier for your employees. Our worldwide service network supports you in the implementation and maintenance of your GreCon systems.

Rely on our experience of more than fifty years!



## LENGTH MEASUREMENT

The measuring system determines the length and the speed of solid, soft and moist materials by recording the measured value without contact with laser beams. The optimization of the documentation and control processes for our customers is in the focus when the length measuring system is used. However, also material costs by reduction of the cutting scrap are saved.

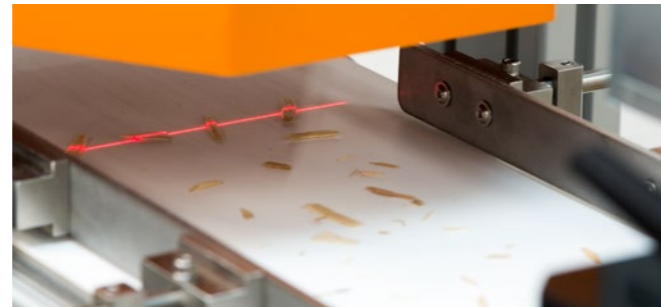
### 9 LENGTHCONTROL



## PARTICLE GEOMETRY MEASUREMENT

The measuring system to analyse the particle size measures and classifies all three dimensions of particles. The relation of particle surface to volume is the decisive parameter for the effectiveness of the gluing of particles. Specific adjustments of the protrusion of the knives at the knife ring flaker make a saving of glue and an optimisation of the mechanical properties of the board possible.

### 12 3D PARTICLEVIEW



## LABORATORY SECTION MEASUREMENT

The results of the laboratory section measurement must be made available quickly. With the automatic and non-contact thickness and weight per unit area measurement, the values are available within a few seconds without time-consuming sample preparation. In addition, the fully automatic measurement can be used to measure the moisture distribution across the laboratory cut.

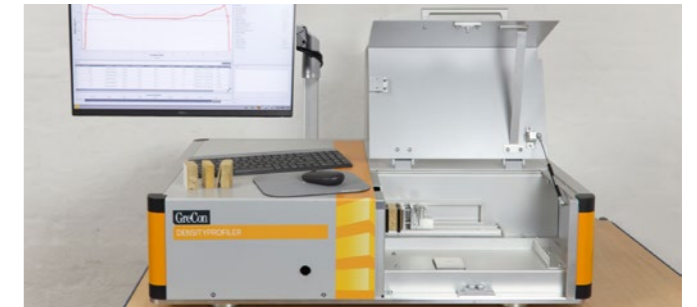
### 13 BOARDCONTROL



## LABORATORY RAW DENSITY PROFILE

High-resolution measurement of the density profile allows for precise analysis of the panel quality and the process parameters. The density profile analyser can measure several panel samples simultaneously within seconds. Special software functions allow several profiles to be superimposed for production control and the profiles to be integrated into the inline raw density profile measuring system.

### 16 DENSITYPROFILER



## MOISTURE MEASUREMENT

Material drying is expensive, but essential. If the moisture of the raw material is too high, problems occur at the downstream production processes and with the panel quality. If it is too low, valuable resources are wasted. The exact continuous determination of the moisture makes an optimised use of energy and an improvement of the further production process possible.

### 10 MOISTURECONTROL



## EDGE INSPECTION

Split glue joints, broken edges, uncoated areas or doubling are only some of the imperfections that may occur around the edges when wood materials are coated. Our edge inspection system checks the edges for such imperfections. Compact laser sensors measure the area three-dimensionally, thus allowing you to draw conclusions about the causes of the defects.

### 11 EDGEINSPECT



## PANEL TESTING LABORATORY

The automatic test laboratory allows for high repeatability and representative data volumes. The system is used for automated transverse tensile and lift-off strength testing of MDF, HDF, OSB and chipboard in accordance with EN 319 and EN 311. Equipped with a raw density profile measuring device and microwave moisture measurement, these values can also be determined automatically.

### 14 SYN TEST PTM



## EMISSION ANALYSIS

The emission of formaldehyde of wood based materials is subject to legal regulations. Too high emissions are unacceptable and can cause serious quality defects. Due to the more stringent limit values, the presently used measuring methods are quickly unable to cope with the requirements. The reliable and exact determination of the formaldehyde emission makes a safe compliance with the limit values possible.

### 15 GASANALYSER





## FOREIGN BODY DETECTION

Foreign bodies and particles of a high density can cause enormous damages or impair the panel quality. With the CHIPINSPECTOR, foreign bodies are sorted out right at the beginning of the production process. The MATCONTROL detects these foreign bodies in the chip and fibre mat and protects the steel strap. Even areas which are too lightweight as blowholes or missing material can be detected.

### 1 CHIPINSPECTOR

## WEIGHT PER UNIT AREA

The weight per unit area provides information on the quantity of material used. If the weight per unit area is too high, valuable material is wasted. If it is too low, quality defects may result. With the measurement it is possible to optimise the material quantities used and reduce deviations.

### 2 MATCONTROL

## OPTIMISATION OF FORMING

The uniform material distribution in the mat is an important requirement for a good panel quality. Fluctuations result in material waste and deviations in the planned panel quality. The material use is optimised by a uniform material distribution in the mat so that significant material savings can be achieved with an improved product quality.

### 2 MATCONTROL 3 FORMATOR

## FIBRE MEASUREMENT

With respect to the manufacture of fibre panels, the largest part of energy is consumed for the generation of the fibres. The analysis of the percentage of large shives in the surface of the fibre cake leads to conclusions on the necessary quantity of energy. Also the time when the refiner discs are to be changed can be defined specifically. Thus, quality problems can be avoided.

### 4 FIBERVIEW

## RAW DENSITY PROFILE

The raw density profile is an important parameter in the production of wood-based panels. If the profile is not optimised, this can have a massive impact on the mechanical properties of the panels. By permanently monitoring the raw density profile, it is possible to predict the board quality, which can be optimised by specifically adjusting the process parameters.

### 5 STENOGRAPH

## THICKNESS MEASUREMENT

Fluctuations of the thickness due to production can be detected in time by means of the inline thickness measuring system and material waste or quality losses can be avoided. The use of different measurement transducers as lasers or roles makes the use of numerous applications possible. Feedback of the measured values allows automatic control of the press or grinding machine, for example.

### 6 THICKNESSCONTROL

## WEIGHT MEASUREMENT

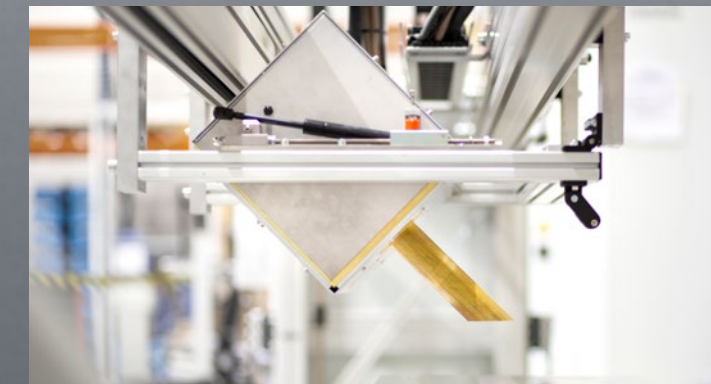
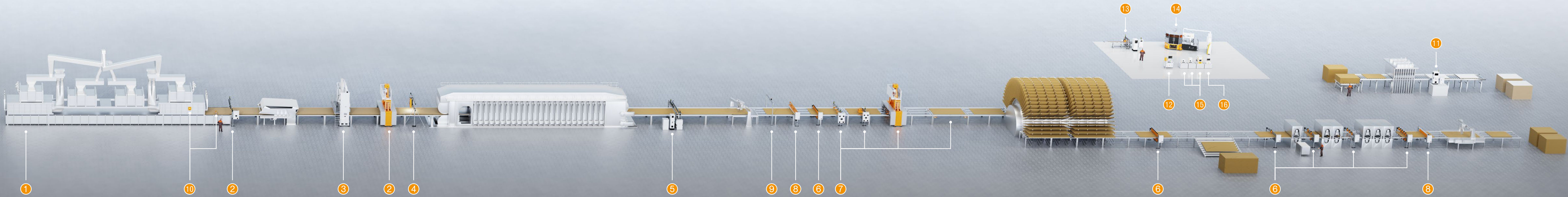
The weight is an important parameter for the manufacture of panel materials. It is possible to determine the raw density via the weight as one of the most important key figures in the panel industry. The quantity of the raw material can be verified as well. By means of high-precision and comprehensive x-ray systems it is furthermore possible to illustrate the weight distribution.

### 7 BOARDSCALE

## EARLY BLOW DETECTION

The early blow detection identifies any delamination in different materials which may occur due to the process. Additionally, the ultrasound measured values provide information on important panel parameters (moisture, weight per unit area, etc.). Hereby, it is possible to optimise the production process. The system can be calibrated or maintained anytime thanks to the use of ct technology.

### 8 DELAMINATIONCONTROL







## MAXIMUM AVAILABILITY OF YOUR GRECON SYSTEM

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### A SERVICE TAILORED TO YOUR NEEDS WHICH PAYS OFF

The maximum availability and reliability of your GreCon system is what we want to achieve! In the field of measuring technology as well as in the fire prevention area. Measuring technology by GreCon helps you to optimise the use of e.g. energy and resources by obtaining objective data. The quality and the reliability of these measurement results influence your product quality and your production result. The service which you need specifically is available to you thanks to the individually combinable service modules - no matter when and where you need it.

Starting with the complete assembly, the project planning on site and the assembly support via the commissioning, the inspection or the maintenance. We compile a service package tailored to your needs - and you always have the optimal solution to avoid standstill times and reduce malfunctions and disruptions to a minimum. We support you where you need us. Also online!

### SATELLITE - SAFE, SIMPLE AND FAST

With the remote support SATELLITE, GreCon experts are available to you worldwide in case of urgent questions or a possible failure. By means of a remote diagnosis we will help you to make your GreCon system safe, easy and quickly available again. The access to the data history makes a specific and quick analysis of the cause of failure possible. Local interventions can be better prepared thanks to GreCon SATELLITE and even completely avoided.



## PIONEERING SPIRIT, PASSION AND INNOVATION

We are more than just a company, we are a community where pioneering spirit and passion for excellence are our driving forces. Our employees are the key to our success, and our customers are our partners on the path to outstanding solutions.



In 1911, Carl Benscheidt founded Fagus GmbH for the production of shoe lasts and punching tools. His great-grandsons Ernst and Gerd Greten integrated the companies GreCon-Anlagenbau and GreCon-Elektronik. Numerous inventions originate from this merger, including shoe lasts for the right and left foot; measuring technology to record thickness, surface characteristics or the weight by X-ray; the industrial spark extinguishing system.

Today's Fagus-GreCon Greten GmbH & Co. KG is a family business in its fifth generation. Fagus has stood for precision and fit for over 100 years and is an established partner for the international shoe industry. GreCon has been supplying sophisticated solutions for a wide range of applications in various industries in the "fire protection" and "measurement technology" sectors for 50 years. Thanks to numerous innovations and the commitment of our more than 700 employees worldwide, we have been able to establish ourselves as a leading international partner for our customers in each of these areas.

The UNESCO World Heritage Fagus Factory is a special fourth business unit as a cultural enterprise within an industrial setting. In 2011, the building complex at the Alfeld site was listed as the "UNESCO World Heritage Fagus Factory". The Fagus factory built in 1911 as the first building of the architect and founder of the Bauhaus, Walter Gropius, is considered the origin of the modern era of architecture.

### **Fagus-GreCon Greten GmbH & Co. KG**

Hannoversche Straße 58 . 31061 Alfeld . Germany

+49 5181 790 . [info@fagus-grecon.com](mailto:info@fagus-grecon.com)

[www.fagus-grecon.com](http://www.fagus-grecon.com)