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NEWS

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Measuring
Technology

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Fire
Protection



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Measuring Systems

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MEASURING SYSTEMS

GreCon measuring systems have been used in many different industries for more than 30 years. All relevant parameters, such as temperature, moisture, raw density profile, thickness, weight per unit area, internal bond, object detection, particle measurement, gas pressure and formaldehyde emissions, can be measured with GreCon measuring systems using modern ultrasonic, x-ray, microwave and image processing technology.

Our systems provide customers with the correct measuring values and the required accuracy. GreCon supplies reliable systems that give the users an advantage over competition.

GreCon
HPS 5000





GreCon

NEWS
Measuring
Systems

BONDOMAT

Revolutionary internal bond measurement as to accuracy and measuring time

EASYLOG

Wireless temperature measurement during hot pressing of thin wood based panels

SUPERSCAN SPR 5000

New surface inspection of uncoated wood based panels

HPS 5000

New high-precision scale to measure weight per unit area and material distribution

DMR 6000 und DML 6000

The new generations make thickness measurement faster, easier and more reliable

UPU 6000

Quality control of wood based panels and blow detection

SUPERSCAN SPF 5000

Surface inspection of fibreboard

MM 6000

New inline moisture analyser with microwave technology

GreCon Customer Service

Safe, simple and fast support with GreCon SATELLITE

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BONDOMAT
Revolutionary internal
bond measurement
as to accuracy and
measuring time



The BONDOMAT is a testing machine, standardised according to EN 319, for the internal bond strength of wood based panels. It allows automated glueing of samples with a glue application machine in an exactly reproducible manner.

Specified and configurable times, temperatures, pressures and glue quantities guarantee a never-before achievable accuracy in the testing of the internal bond strength of wood based panels. Due to the elimination of the operator's influence on the measuring result and as a positive consequence a clear reduction of the standard deviation glue quantities can be saved in the production by 5% or more.

Fast testing times of approx. 90-120 seconds per sample are achieved by active re-cooling or heating of the test yokes. The short testing time allows for the internal bond test for quality and production control to be carried out very easily and independently by laboratory staff or, for the first time, by the operator in the control station.

New Features and Benefit

- Measuring time: 10 samples in 20 minutes (compared with 10 samples in 2 hours with manual testing methods)
- Significant minimisation of variability in testing
- Faster, more accurate and standardised quality and production control of the internal bond, independent of the influence by the operator
- Maximum saving of glue through reduced spreading. Hence, reduction of safety reserves for internal bond strength

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EASYLOG

Wireless temperature measurement during hot pressing of thin wood based panels



Close to the heart of the action in the hot press: GreCon added EASYLOG to the CONTILOG product family to measure gas pressure and temperature. This smaller chip measures the temperature of wood based panels and subsequent processes (MDF, particleboard, OSB) during hot pressing.

A wireless sensor, 2.5 mm flat, is placed in a wood based mat as a so-called lost component and runs through the hot press to measure the temperature for the entire pressing procedure. After leaving the press, the measured data is wirelessly read out with a reader and transferred to a PC for evaluation using a USB stick.

The mat temperature of any position within the press provides information on the curing of the resin in the mat. The press program for the individual panel types can be optimised to reach a core layer temperature of 100 °C as soon as possible.

In addition, the EASYLOG is also suitable for continuous monitoring of the cooling down conduct in the star cooler, the temperature development in the panel stack or further subsequent process steps, such as coating.

The obtained data are transmitted with an RFID reader via Bluetooth to a tablet PC. The great advantage of the data transfer by means of RFID technology is that the data can still be read even when the batteries of the EASYLOG are already empty. The transmitted data can then easily be transferred for evaluation with a USB stick from the tablet to a stationary PC.

New Features and Benefit

- Suitable for thin panels (from 10 mm)
- Measures the mat temperature and panel temperature in any position within the press
- Provides information on the curing of the resin in the mat
- Reduces press run-in times
- Optimises the hot post curing in the stack and the conditioning phase
- Intuitive control with touch-screen tablet PC

GreCon

SUPERSCAN SPR 5000

New surface
inspection of uncoated
wood based panels

GreCon
SPR 5000

With SUPERSCAN SPR 5000, GreCon expanded their range of surface inspection systems with an inspection system for uncoated wood based panels (MDF, HDF or particleboard). The first system is successfully installed in a large wood based panel plant.

The automatic image processing system inspects the surface of each panel inline, guarantees 100 % inspection and allows continuous, consistent sorting by detection of surface faults and defects, such as rough areas, chatter marks and dirt, of raw panels. Upstream production processes can be optimised through fault and statistics reports.

The detection of faults and defects is done by two inspection modules that are integrated in the frame. They inspect the panel surfaces with different lighting and camera concepts. The inspection performance results are a combination of the results of both modules.

Besides the easy operation of the system, new defect types are learned automatically and individual sorting criteria determined.

New Features and Benefit

- Evaluation of sanding results (optically and topologically)
- Detection, classification and distinction of defect types
- Early detection of defects prior to further processes
- Easy operation, learning of new defect types and creation of individual sorting criteria

GreCon

HPS 5000

New high-precision scale
to measure weight per
unit area and material
distribution

GreCon
HPS 5000

GreCon

The new High-Precision Scale HPS 5000 by GreCon measures the weight per unit area distribution of finished panels directly after the press or saw in high resolution and across the entire material width. With the absorption measuring method of x-ray technology, minute deviations in the weight per unit area distribution can be detected in a non-contact way. The HPS 5000 provides the exact weight of each panel and the material distribution within the panel. Measuring across and along production immediately reveals deviations, fluctuations and out of tolerance areas. Represented as key figures, the results can be made available via an OPC interface and serve to monitor the weighing technology in the forming line. Automatic calibration ensures reliable measured values. Thus, the HPS 5000 guarantees reliable and resource-conserving production.

New Features and Benefit

- Complete non-contact measurement
- High accuracy and flexibility due to fine resolution and tareless measurement
- Weight measurement of the entire panel and grid evaluation in a selectable resolution
- Optimisation of material consumption
- High measuring accuracy even at high production speeds
- Measuring reliability due to quick calibration
- Parallel measurements and comparison of laboratory cuts by HPS and in the laboratory
- Little space required for installation
- Optional linkage with DIEFFENSOR for automatic regulation**

** Interface for regulation available



GreCon

The new generations
DMR 6000 and DML 6000
make thickness measure-
ment faster, easier and
more reliable

For the production of wood based panels, fluctuations in panel thickness and deviations from nominal values reduce quality. Your customers will identify these as product defects.

Due to their highly developed technology, the new Thickness Gauges DMR 6000 and DML 6000 by GreCon provide the necessary information for the fine-tuning of production processes to increase system availability and output.

The new thickness gauges by GreCon are based on tried and tested measuring principles. Measurements with the DML 6000 are non-contact using an optical laser. For measurements with the DMR 6000, high-precision rollers contact the material and convert thickness variations into vertical motion within the transducer.

New Features and Benefit

- Production control within precise tolerance limits
- Temperature-resistant frame
- Quick and timely recognition of quality deviations
- Display of effects of changes in the production (intentional or unintentional)
- Display of optimisation potentials
- Reduction of costs by minimising excess material required to be added for sanding (0.1 mm ~ 0.8 % material)
- Ensures high system availability
- Measuring System Analysis according to MSA, type-1 study
- Quick press adjustment to new products

GreCon

Ultrasonic Measuring
System UPU 6000
Quality control of wood
based panels and blow
detection

The Ultrasonic Measuring System UPU 6000 by GreCon is the optimum system to fulfil the quality standards required today.

Process trending allows cost-optimised production of high-quality wood based panels, sub-standard panels are immediately detected.

The integrated early blow detection reduces and eliminates the production of blows and as a result reduces customer complaints. Application areas can be monitored by innovative GreCon technology where only special solutions were available in the past.

Thus, with the help of a product extension in the future, blisters can now be easily detected in panels of thicknesses of up to 55 mm and in light panels ($> 450 \text{ kg/m}^3$). With automatic adjustment of system-specific recipe parameters, the ultrasonic measuring system can be parameterised without prior knowledge. This ensures optimum configuration of the ultrasonic measuring system at any time.

New Features and Benefit

- Fast and early detection of quality fluctuations
- Realise optimisation potentials by visualising the effects of changes in the production process
- With ct-frame: calibration, service and maintenance during running production
- High availability with ct-frame and minimal maintenance expense
- Warning of blisters
- Optimisation of pressing times
- Minimisation of production costs by optimising production and reduction of rejected material to $< 1 \%$



GreCon

SUPERSCAN

SPF 5000

**Surface inspection
of fibreboard**

With Fiberview SPF 5000, GreCon expanded their range of surface inspection systems with an inspection system for unpressed fibre mats (MDF/HDF). The first system has been successfully installed in a large wood based panel plant.

Inspection is done after the pre-press with a camera and illumination unit installed above the mat. Visualisation of the results using the integrated automatic image processing system which ensures continuous monitoring of the produced fibre quality. Besides the fibre size, other parameters, such as slenderness ratio, are measured. Perception of a light/dark contrast allows identification of quality-reducing fibre bundles as light objects and bark and rubber inclusions as dark objects.

Classification and visualisation of these parameters as a trend allows control of the cooking and refining processes. Fibre quality as well as energy consumption can be optimised. The following parameters can be fine-tuned:

cooking temperature, refiner disc distance, pre-steamer, ratio of wood types.

New Features and Benefit

- First continuous evaluation of the fibre quality
- Specifically adjustable fibre process depending on product requirements
- Active homogenisation of fibre quality
- Optimisation of replacement cycle of refiner discs

A photograph of an industrial production line with several large rollers. A square, metallic moisture analyser is mounted on a yellow base, positioned to measure material as it passes between rollers. The analyser has a circular sensor area on its top surface.

GreCon

MM 6000

New inline moisture
analyser with
microwave technology

The new Inline Moisture Analyser MM 6000 by GreCon allows precise monitoring of one of the most important production parameters.

The continual availability of the material moisture allows for easy adjustment of the production process to ensure a high standard of product quality.

Measurements, for which the material has to pass the planar sensor of a ceramic microwave sensor and the microprocessor-controlled evaluation unit, provide the density-independent moisture content of the sample.

The MM 6000 can be used in different positions of the production process. The (residual) moisture can be measured after the fibre dryer directly after the rotary valve. The use of a moisture analyser in or after the forming line gives final data about the moisture of the spread chip or fibre mat. Automatic control of upstream processes of chip or fibre processing is possible. In the star cooler, the finished panels are checked inline for the pre-determined moisture values. Thus, an end product with reliable properties is ensured.

Optionally, the measuring system can be expanded to a density analyser.

New Features and Benefit

- Extremely fast and precise moisture measurement
- Measurement of core and surface moisture
- No influence by colour and form of the material to be measured
- Direct contact with the measured material
- Independent of material density



GreCon

GreCon Customer Service

Safe, simple and
fast support with
GreCon SATELLITE

Support, whenever necessary, is provided by the new GreCon remote support SATELLITE. This high-performance remote maintenance tool allows GreCon experts to quickly analyse and eliminate troubles to keep production downtimes as short as possible.

GreCon-SATELLITE is

- **safe** because it complies with the highest certified security standards. Access to the system is only possible after approval by the customer.

GreCon-SATELLITE is

- **simple** because service requests are triggered by simply pressing a button. Required system data can be automatically made available and completed.

GreCon-SATELLITE is

- **fast** because there are no waiting times for feedback by phone or e-mail. GreCon experts can respond quickly to messages. With GreCon SATELLITE, service visits can be prepared in the best way possible and may even be avoided.

GreCon offers SATELLITE rates that are based on the different customer requirements. SATELLITE Flat, Easy or Flex offer unlimited remote support, defined time quota or flexible remote support according to the current service rates. Customers signing maintenance agreements at the performance level „Professional“ also get a SATELLITE time quota.

Customer Benefit

- Minimisation of service costs
- Increased system availability and reliability
- Faster troubleshooting
- Optimisation of service visits
- Flexible rates