

BWQ 5000

Inline Weight Per Unit Area Gauge to Measure
the Material Distribution



GreCon®

Reliable Measurement of the Material Distribution to Optimize the Material Consumption

The GreCon Weight Per Unit Area Gauge BWQ 5000 ensures a high product quality while the use of raw material and energy is optimized. The properties of particleboard, MDF and OSB board depend on the precise spreading of the mat. The main goal of using a BWQ 5000 is the optimization of material consumption. A heavy board is still acceptable to the end customer, but the material and production costs are much too high for the manufacturer. A board that is too light has only poor quality properties.

The BWQ 5000 monitors the material distribution of loosely spread or pre-pressed wood based mats. Graphical and numeric representations enable the operator to adjust the forming process to achieve consistent panel quality while the use of material and energy is optimized.

Inline Weight Per Unit Area Measurement with X-Ray Technology

The continuous monitoring of the mat distribution across the production prior to the main press ensures an optimum production flow. Belt tracking caused by imbalances in the mat can be prevented.

The recorded measured data makes it possible to easily trace production processes to expose optimisation potentials. With the BWQ 5000 information combined with other process data in a higher-ranking process control system, additional optimization potentials are revealed.

Measuring Principle

The weight per unit area gauge works in a non-contact method. An X-ray source is installed below, and a high-precision sensor above the material. Depending on the specific density and the amount of the material, more or less X-radiation is measured by the sensor. This is a measure for the weight per unit area (kg/m^2 / lbs/ft^2).

Operation Modes

The GreCon Weight Per Unit Area Gauge BWQ 5000 can operate in three different modes. The measurement of the material distribution across the production is done in cross mode and in both directions. Should a special zone be analyzed more precisely, or, should the longitudinal profile be measured, the measurement transducer can measure in stationary mode at a certain position. Should several positions be analyzed one after the other, this is done in step mode at predetermined time intervals or at certain points on the mat.

Software Functions

The visualization software of all GreCon measuring systems is based on Windows®. The software of the traversing Weight Per Unit Area Gauge BWQ 5000 consists of the following program modules:

Network Connection

For the data transmission to higher-ranking process control systems, different network connections, such as OPC or ODBC, are available.

Visualization

The core of the software package is the visualization software. It records all measured values and processes them graphically. The simple menu structure, which is standard for all GreCon measuring systems, makes intuitive operation possible. Clear information and graphics enable the operator to quickly and effectively intervene in the running production process. The measured values are represented as a profile. Since measurement can be effected in three different operation modes, the mode determines how the profile is represented: as cross profile, as longitudinal profile or a combination of both profiles. Out of tolerance limits are marked with changes in colour and tolerance relays, with voltage-free outputs, are activated.

Recipe Management

This is a product database in which different panel types and production parameters, which are relevant for the measuring system, may be stored.

Your Benefit



- Optimization of material consumption
- Monitoring of material distribution
- Fast traverse movement - quick and strip-wise measurement of the cross profile to quickly intervene in the production process
- Measurement of the longitudinal profile for detection of systematic distribution failures lengthwise/crosswise
- Automatic calibration with homogeneous test samples for best quality of measured values
- Intuitive operation using TOUCH

Database

The database stores the measured values and provides a function to export them to other file formats for further processing and evaluation. A uniform data structure provides easily accessible data for process control systems.

Service

GreCon measuring systems are equipped with GreCon online support SATELLITE. This provides safe, simple and fast remote support when there is trouble or to check the system. Each online support is logged and stored in the system's history.

Technical Specifications

- Supply voltage 230 V / 115 V
- Frequency 50 Hz / 60 Hz
- Power consumption 1,500 VA
- Compressed air supply 6 bar (90 psi)
- Measuring ranges 2 to 40 kg/m² (0.4 to 8 lbs/ft²)
- X-ray tube max. 50 kV at 1 mA
- Repeating accuracy ± 10 g/m² ($\pm 1 \sigma$)
- Measuring resolution better than ± 20 g/m²
at 40 kg/m²
..... better than ± 5 g/m²
at 2 kg/m²

Calibration

■ Automatic Calibration

The quality of the measuring results essentially depends on constant conditions during measurement. To obtain a high

measuring accuracy, the BWQ 5000 is calibrated automatically at regular intervals. For automatic calibration, an appropriate sample is placed in the calibration position, which is located near the material flow.

References

- Particleboard
- MDF board
- HDF board
- Hardboard
- OSB board
- Insulating material (mineral wool and insulating board)
- Machined car parts
- Rigid foam board

Applications

In particleboard and OSB board production lines, the traversing weight per unit area gauge is installed directly after the forming station. In MDF production lines, it is used after the pre-press. An additional measurement of the completed panels is also possible. This is especially useful where the measurement of the material distribution prior to the press is impossible or additional information is desired.

Why GreCon



- Customer-specific system design
- High innovative capacity:
more than 10 % of the employees work in the R & D division
- Worldwide customer service network:
more than 80 service technicians on duty worldwide
- Efficient sales network: represented in more than 35 countries
- High expertise: more than 40 years of experience in the measuring technology sector



OUR HEADQUARTERS AT ALFELD - BUILT BY WALTER GROPIUS IN 1911

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