Procemex
Dirt Count Analyzer

Reduce Customer Claims

Reduce Compensation Costs

Improve Pulp Quality

procemex

Member of the ANDRITZ GROUP

Online Dirt Control in Pulp Production

With Procemex® Dirt Count Analyzer you can improve your pulp production process and reduce customer claims arising from shives and dirt in pulp.

Key benefits

1. Inspected web area is up to 100 % of total production.
2. Dirt classes comply with ISO5350-2 and TAPPI/ANSI T563 standards.
3. Camera pixel resolution of 0.1 x 0.1 mm: even the smallest dirt is caught accurately under all conditions.
4. An easy and illustrative graphical user interface.
5. The compact inspection beam fits even the smallest machine positions.
6. Connection with bale tracker systems.

INSPECT UP TO 100% OF TOTAL PRODUCTION

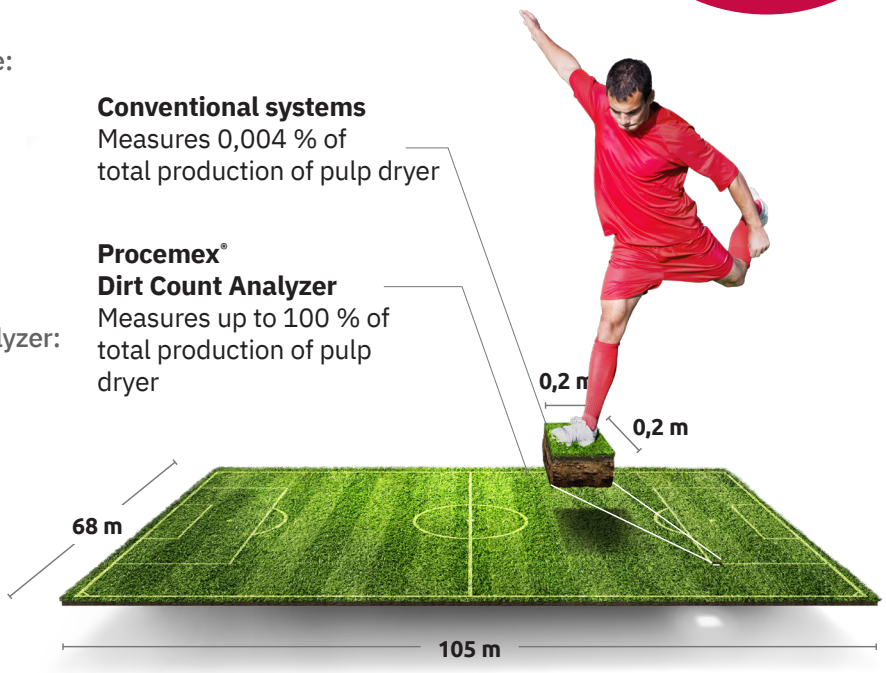
1 Compare Procemex® Dirt Count Analyzer and conventional systems

Pulp dryer measurement example:
- 6.7 m width
- 170 m/min speed

Conventional measurement:
- Sample every 10 minutes
- 3.7 m^2 measured/hour

Procemex® Online Dirt Count Analyzer:
- Continuous measurement in MD
- Continuous measurement in CD
- 68 340 m^2 measured/hour

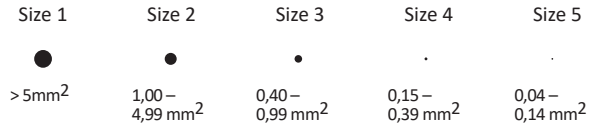
With Procemex® Dirt Count Analyzer you cover over 68 000 m^2/h - that is about 9.5 football fields, whereas with conventional systems you catch only 3.7 m^2/h - that is about the size of a small doormat.



2 Detect dirt according to standards

Procemex® Dirt Count Analyzer is designed to accurately follow ISO and TAPPI standards. It provides a reliable basis to agree globally with your customers over an accepted amount of dirt in the pulp. This prevents quality claims with expensive and unwanted product returns or compensations.

Standard used ISO5350-2 Dirt classes



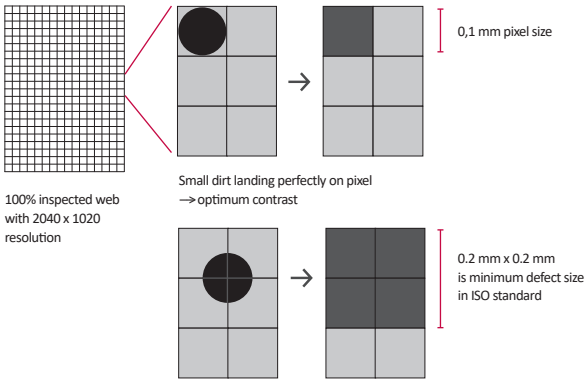
According to standard the smallest dirt size is 0.2 mm x 0.2 mm = 0.04 mm²

3 Detect even the smallest specks

0.1 mm pixel for reliable measurement physics

With small enough pixel size and powerful strobe LED lights you can stop movement and detect even smallest specks of dirt in the pulp.

Thanks to uncompromised physics, it doesn't matter whether the dirt lands on a single pixel resulting a strong contrast difference or in a 4-pixel crossroads resulting into a weaker difference.

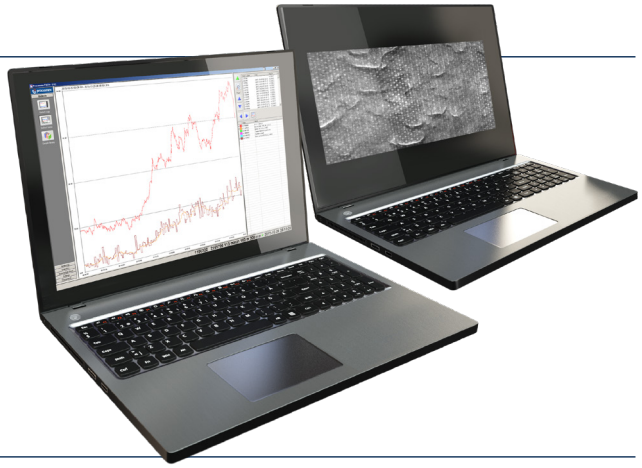


Procemex® Dirt Count Analyzer

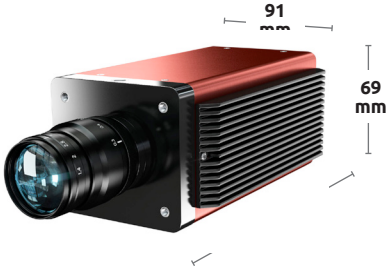
- Detects shives above 1 mm²
- Camera pixel resolution 0.1 mm
- Analyzed area / camera in CD 220 mm

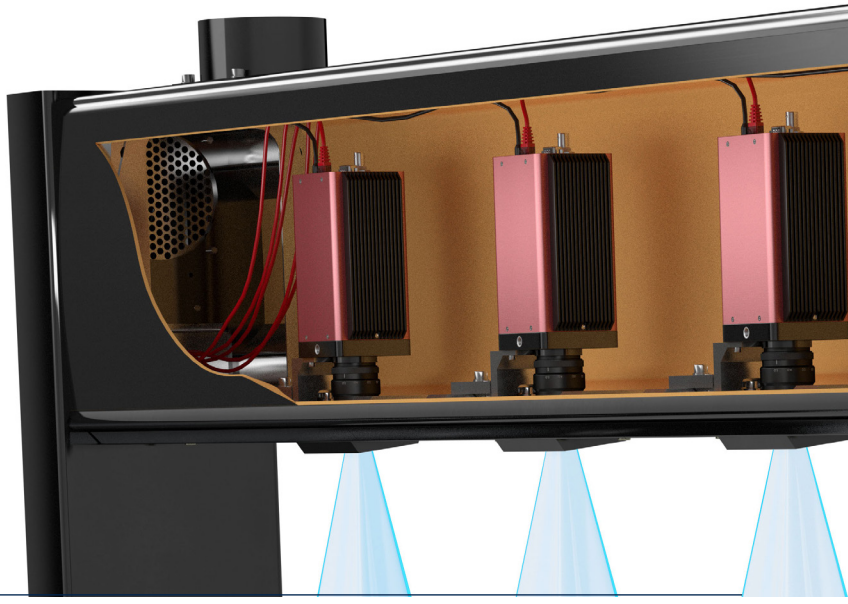
4 An easy and illustrative graphical user interface

- Dirt count is measured and reported per bale or per adjustable time period
- Dirt count data is connected with a customer bale tracking system
- Online Dirt Count Analyzer informs operators in real time about process changes and enables fast corrective actions.



5 The compact inspection beam with smart cameras fits even the smallest machine positions





6 Connect with bale tracker systems

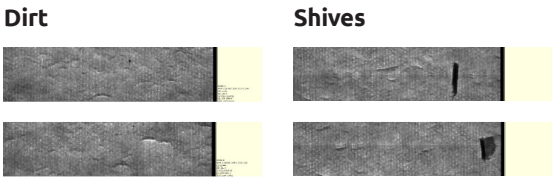
The connection with bale tracker systems provides an easy access to any of the history files.

How We Do It?
Procemex Process

Step 1

The Procemex® Dirt Count Analyzer is an online measurement system. It detects and classifies dirt and shives according to ISO and TAPPI standards providing both dirt count per square meter and dirt area per square meter (ppm).

Dirt that does not qualify as dirt according to the standard is rejected from the calculation. Beyond standards, some objects like metal wires, oil and special particles relating to different raw materials are detected and classified based on their shape.



Step 2

The Procemex® Dirt Count Analyzer is measuring in transmission with strobe LED lights with the camera resolution of 0.1 x 0.1 mm to meet TAPPI/ISO standards. You can choose between full CD/MD coverage or one camera per bale or just few measurement points.

Step 3

The Procemex® Dirt Count Analyzer detects dirt in real time and stores every defect individually into the system database. The system keeps operators up to date with the amount of defect per set, per bale and per time. The amount of dirt in each bale is indicated both in real time values and with color coding. Operators can monitor real time dirt count trends indicating process changes and enable fast corrective reaction.

Step 4

The dirt count values are transferred to the customer quality data management and bale tracking systems providing an easy access to any of the historical information.

Case Story – a Pulp Mill

The Starting Point

The customer had an existing system. The 'black box' type of a system provided a dirt count number from one measurement spot.

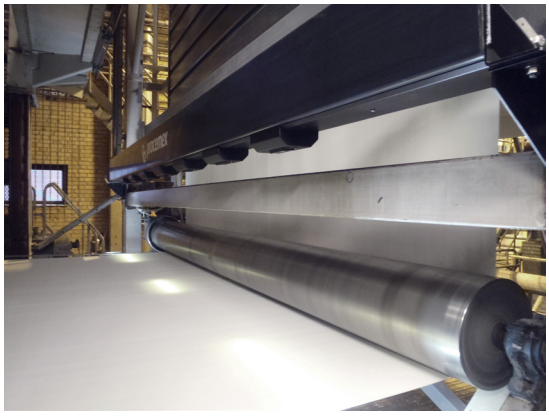
Their current system was getting old, and there were issues with support and spare part availability. They wanted a modern online Dirt Count Analyzer with a classification function that complies with the ISO-5350-2 specification.

When Speed Matters

It's not just a number on screen. With visual, real-life image you can attain and analyze information fast and make more accurate decisions.

Procemex Solution

- Provided a system based on Procemex 2.1 Mpix smart cameras and strobe LED light technology
- Same type of cameras and lights were already in use on one paper machine at the mill.
- Procemex strobe LED lights easily penetrated the hardwood pulp and produced crystal clear and extremely detailed images and measurement.
- Procemex® Dirt Count Analyzer measures 3 out of 7 bales. As the measurement frame reaches already across the machine, it is easy to add cameras and measure all bales later on – if needed.
- Dirt count data transferred to the mill quality system



Results

Procemex® Dirt Count Analyzer Displays
- Trends
- Per bale view
- Per set view

The system's simple yet advanced design solutions offer unlimited potential for customization. In addition to quality data transfer, Procemex® Dirt Count Analyzer is widely accessible from other mill systems via various links and database view - connections.

The most cutting-edge advantage the customer experienced was the early discovery of defects. This allowed their operators to take fast actions, which ultimately resulted in more efficient production and improved quality.

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Future Proof & Backward Compatible

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