

X-FORCE-SCAN for quick, reliable on-line inspection of products for foreign objects or defects



Check your products for defects before shipment



On-line production control and regulation

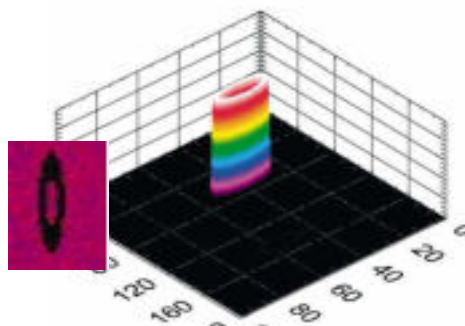
Manufacturing of high-quality products requires accurate and close product control in order to ensure integrity of product components and avoid foreign objects in the final product. Non-destructive control systems working on-line improve product quality and facilitate automatic production regulation. Such features reduce total production costs.

Applications

X-FORCE-SCAN is designed for on-line inspection of products moved by conveyor belt systems. The instrumentation uses high-resolution radiation transmission to measure area weight distribution. The instrumentation detects and identifies:

- Foreign objects in foodstuff
- Bone residues in meat products
- Voids and density in foam products
- Foreign objects in panel plate production
- Packages with missing content

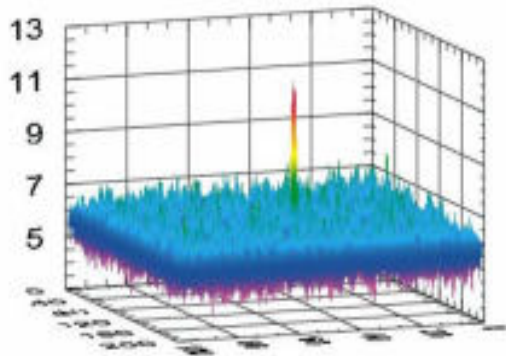
- Packages with defect products
- Products of non-conforming shape
- Material distribution across bandwidth
- Unit weight.



Small invisible tension disc (\varnothing 6-mm) detected on the production line in a mat for a MDF panel board at a speed of 1 m/sec.

Examples from demonstration of detection performance

Size of foreign object



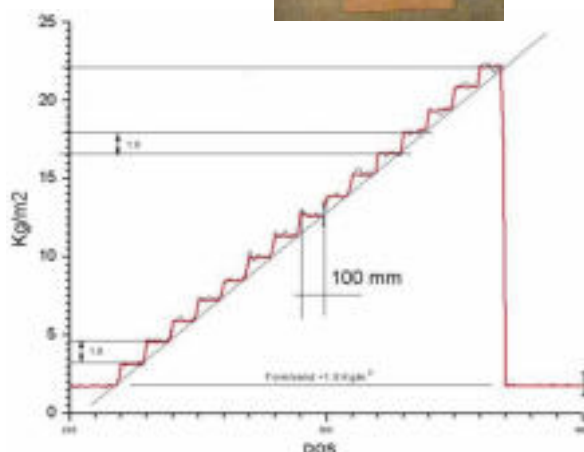
< 2 mm stone identified in a wood fibre mat for a 5,5 mm MDF-board. Production speed: 0,7 m/sec.

Area weight measurement

Precision, dynamics and linearity of performance demonstrated by detection of increasing overlays of MDF-board moving through the instrumentation.



Overlaid 2-mm thick MDF-panel board with area weight. 1,8 kg/m². Overlay interval is 100 mm.



Detection result measured with a belt speed of 0.2 m/sec.

Advantages

- Complete picture of the weight distribution
- Detect invisible defects and hidden foreign objects of deviating density
- Replace metal detectors
- Non-conforming products can be rejected automatically
- Customers experience only quality products
- Short payback time of the instrumentation
- Protect subsequent production units against damages from foreign objects on the conveyor.

Description

The **X-FORCE-SCAN** measuring system is housed inside a chassis covered with metal plate. The measuring system includes:

- Guide-belt to direct the products through the measuring gate
- Measuring system with X-ray sources and high resolution detector arrays
- Gauging and data processing unit that also controls X-ray sources and detectors
- PC with monitor and software for generation of product library, selection of product data and presentation of results in numerical and graphical form.

The basic configuration of **X-FORCE-SCAN** uses modular components that make optimizations to individual customer needs easy.

Features

- Area weight distribution and weight distribution profiles
- Detection of invisible objects of deviating density
- Programmable alarm levels
- Detection of physical dimension of objects
- Detection of packing for content deviations
- Out-put signals for automatic production regulation
- Out-put signals for automatic rejection of non-conforming products
- Software for running mass detection and registration of rejected products
- Integration with process control systems.

Performance Data

- Conveyor speed 0 - 1.500 mm/s
- Detection width 50 - 4.000 mm
- Resolution < 2 x 2 mm²
- Area weight range 1,5 - ~100 kg/m²



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