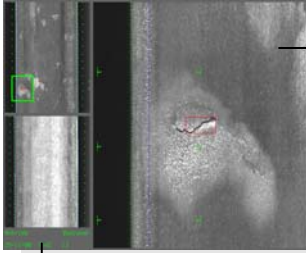


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1:1 Detail showing a defect

Flow chart of top and undersurface

Surface Inspection on Web Materials

Application Fields

Inspection for:

- Surface defects
- Inclusions
- Holes, tears/rips
- Correct dimensions

For the In-Line Inspection in "Endless" Production Processes

of web materials, particularly aluminium, paper, synthetic materials

The Features

Complete images of the surface are generated with line scan cameras and analyzed in a process especially developed for surface inspection.

The automatic edge recognition positions the inspection windows correctly if the width or the position fluctuate. A width measurement is included.

The number of cameras to be deployed depends on the width of the material and the resolution required. The data of up to 12 cameras can be scanned simultaneously with a possible throughput of 400 MBytes per second.

The fault detection is supported by task-specific illumination arrangements. Line lights are typically used for bright and dark area illumination.

The user can define the quality criteria by adjusting the contrast thresholds and defect sizes.

The registered defects are transferred to a marking device, and coil statistics are taken.

Example: Surface Inspection in an Aluminium Rolling Mill

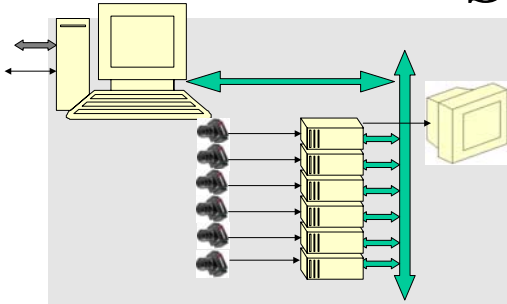
For the first time, the Signum WEBLINE application package for web materials makes a surface inspection possible in aluminium rolling mills. Before the aluminium is cold-rolled, the web material is inspected on both sides for surface defects like cracks, bubbles, craters, spots etc. The complete scanning device is automatically taken from the production line for starting up or in case the production process is interrupted by tearing of the web material.



Aluminium inspection in a rolling mill

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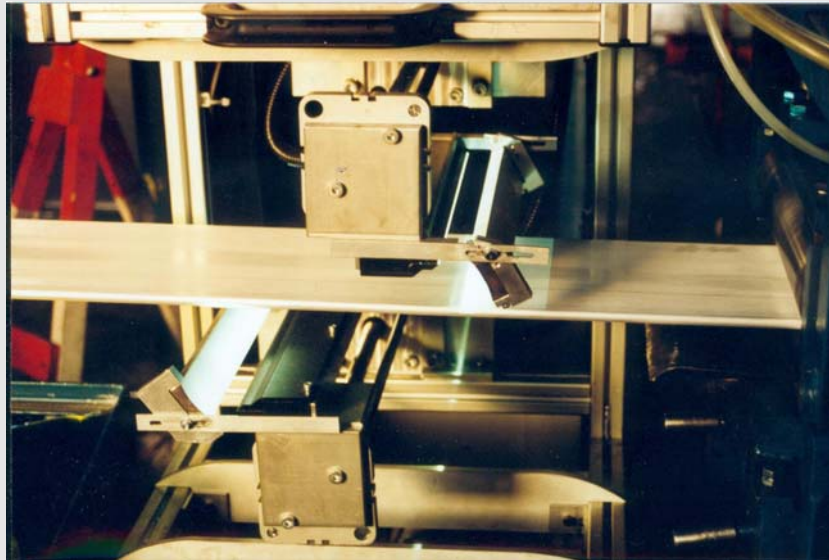


The Hardware Basis

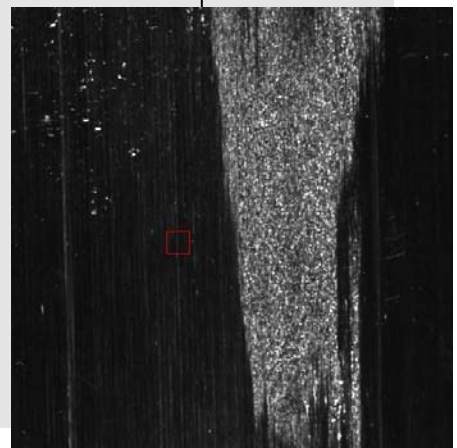
Image Processing

- Signum IMP06 in a network of up to 6 PCs
- Up to 12 line scan cameras scanning simultaneously
- Different light sources according to the requirements
- Parallel interfaces to the system control
- Discharged set-up station for setting up parameters and process control
- Storage of product-specific data on the set-up station

Lighting formation for the double-sided inspection of aluminium web material of 15.75 " width



Surface idefect in a dark field



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