

## Pulp Quality of 100 % the target of Mörrum mill



**Client:** Södra Cell Mörrum mill

**Location:** Mörrum, Sweden

**Scope of Delivery:** Pulp Defect Analyzer

“We are at the leading edge thanks to our Pulp Defect Analyzer, whose measurements could set an industry standard world-wide.”

Barbro Andreasson  
Process Engineer  
Södra Cell

Södra Cell is one of the world's leading producers of paper pulp. At Mörrum, pulp quality has traditionally been examined in a laboratory, yielding good results over the years. However, the mill began to consider the possibility of on-line defect detection, and initiated a search for a reliable partner. ABB's more than 35 years of experience in web inspection proved compelling and close development cooperation got underway.

As a result of this project, ABB installed its first Pulp Defect Analyzer system in Mörrum's pulp line 2, in January 2007.

### Mörrum mill

Mörrum mill manufactures both short fiber and long fiber pulp, which can be used for practically all types of paper. Total production capacity is 430,000 annual tons and most pulp is exported to paper mills in European countries. Short fiber pulp provides a paper with an even surface and high print quality. It is manufactured from broadleaved trees and is used for fine paper and specialty paper products such as labels. Long fiber pulp comes from conifers and is especially used in paper grades with high strength requirements. It has many applications, ranging from mail-order catalogues to teabags. Pulp machine 2 manufactures pulp from short and long fiber alike.

## Highest standards in technology

In terms of pulp quality, the dirt count is one of the most important factors, describing the overall dirt content of pulp, dirt being any foreign material. Typical pulp defects include small dirt spots and shives. Most pulp defects are minuscule, typically measuring less than one square millimeter. The measurement value for such a quantity is the dirt count number, defined in the corresponding ISO and TAPPI standards.

ABB's Pulp Defect Analyzer detects and reports defects as small as 0.04 mm<sup>2</sup>. With the help of applied machine vision technology, the size of each defect can be determined to an accuracy of a hundredth of a square millimeter. The system can be installed to cover the entire width of a pulp web.

In practice, it is sufficient to inspect only a narrow strip since the dirt content can be safely assumed to be evenly distributed in the cross-direction of the web.

To ensure a comparable measurement between different pulp grades and provide a sustainable illumination solution, a controllable light source must be used.

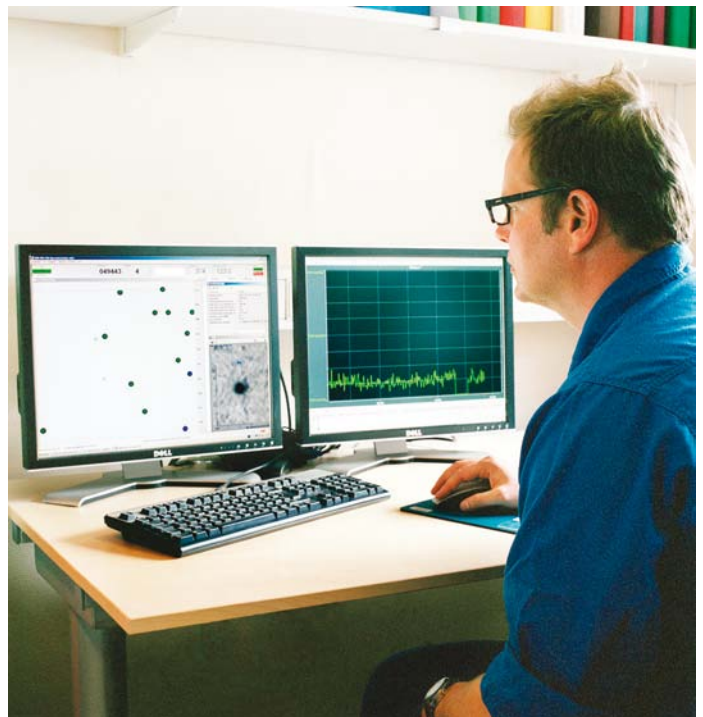
## At Mörrum

The system operates through a single, controllable light beam. Its HDI800 digital smart camera with a linear 2048 pixel element and viewing area of 160 millimeters achieves a cross-web resolution of 80 micrometers. Such a resolution equals 12 pixels for each millimeter of pulp.

"Holes, spots, pitches and shives are typical of the defects we detect at Mörrum. Spots of 0.2-0.6 units of a mm<sup>2</sup> are very common," affirms Mats Lennvid, Process Engineer at the Södra Cell Mörrum mill. "For example, in liquid carton board as well as in cigarette paper it is crucial that we detect such defects. Manual inspection alone is insufficient."

According to the Mörrum mill, the Pulp Defect Analyzer is working well, "surprisingly well" in fact. "We have not needed to change the camera, even if there is dust in the machine," enthuses Sigurd Björkman, Project Manager at Södra Cell Mörrum mill. "In general, we can testify that working with the ABB people has been very easy. This represents our common development work, and it is therefore also very interesting."

The Pulp Defect Analyzer will be integrated later with the Open Control System, also delivered by ABB. At the Mörrum mill, pulp machines are run by ABB drives. In addition, Collaborative Production Management Solutions serve in terms of information gathering and processing.





### Södra Cell

In Södra's world everything starts with the forest which, as the essential requirement for Södra's diverse operations, provides a constant supply of raw materials. More than 50,000 forest owners in southern Sweden are members of the economic association that is Södra. They own just over half of all privately owned forest in the area, as well as a group of companies that are successful in both Swedish and international markets. This gives them a market for their raw materials from the forest while providing the foundation for profitable forestry.

Södra is also a major employer, with 3,700 staff working for the Group, in areas ranging from forestry management and environmental conservation to accounting, sales and product development. The Group's four business areas produce sawn and planed timber goods, interior products, paper pulp and biofuel. In recent years, Södra has also become such a large producer of electricity that the Group now produces more electricity than it uses.

[www.sodra.com](http://www.sodra.com)

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