

APPLICATION REPORT

Detmaster PRT Web Inspection System on a Board Machine

In October 2005, Detmaster 5200 PRT Web Inspection System installation, delivered by SR-Instruments Oy, was completed at Stora Enso Imatra mill's board machine No. 5. The board machine comprises an online coating station and produces both coated and uncoated 3-ply board grades. The web width is 5100 mm at the pope reel of the board machine and the maximum line speed is 600 m/minute.

The primary target for the exploitation of the Detmaster 5200 PRT Web Inspection System at Stora Enso Imatra mills' board machine No. 5 is the accurate and reliable detection and reporting of streaks, missing coatings, dark and bright spots, through holes as well as core ply holes. The Detmaster 5200 PRT Web Inspection System reports the detected defects via a graphical, Windows-based user interface, which includes for example; defect maps showing the location, predetermined size class and type of each defect with icons, as well as statistical information concerning each defect class and individual defect.

In order to facilitate rapid matching of machine reel defect information and defect map reported by the Detmaster system an unwinding control system Detmaster UCS was realized for the slitter-winder just after the board machine. As part of the Detmaster UCS system at board machine was realized a binary code marking system, which informs the absolute length from the beginning of the machine reel. This code enables rapid matching of the machine reel defect information and defect map reported by the Detmaster system as well as in consequence the effective slitting of customer rolls from machine reels at the slitter-winder. Furthermore, an operating station providing customer roll defect maps was implemented for a customer roll re-winder after the slitter-winder.

A CCD matrix camera frame was installed just after the Detmaster system on board machine in order to capture images regarding the predetermined severe defects, which the Detmaster system detects. The Detmaster system gives a triggering signal for the camera frame to capture an image of a defect and that particular defect image is then available for analyse via web break monitoring system user interface, which is located beside the Detmaster system user interface in the process operators' control room at the dry end of the board machine.

The realized TCP/IP communication link enables communication between the Detmaster system and the mill-wide automation system. The Detmaster system delivers defect reports to the mill-wide automation system via TCP/IP, which will then distribute the reports to the selected PC workstations in the mill. Respectively, along with the machine reel numbers, the Detmaster system receives product grade and quality information from the automation system.



Detmaster 5200 PRT system installed at Stora Enso Imatra mills' board machine No. 5.