Intelligent Roll Solutions for better tissue press efficiency

Case: SsangYong C&B, tissue machine 4 in South Korea

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Vice President, Rolls & Workshop Services
WE MIGHT HAVE THE SOLUTION FOR YOU.

THERE ARE SOME CHALLENGES...
SsangYong C&B, tissue machine 4 in South Korea

**TM 4**

- Located in the city of Sejong, Jochiwon
- Production range 14–22 g/m²
- Web width: 4,700 mm
- Production capacity: 100 tonnes/day

**Targets**

- Improve energy efficiency
- More uniform moisture profiles
- Extend roll cover and felt lifetimes
- Run machine at higher speeds
Energy savings through improved suction roll nip dewatering
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High saving potential
Up to 2% higher post-press dryness corresponds to remarkable savings

Nip optimization tools: Valmet iRoll

Nip optimization tools: CrownSim

Valmet Press Roll Covers

Cover typography
Valmet Intelligent Roll Solutions

Analysis and support from Valmet iRoll, process and automation experts

Cost-effective connectivity
• Connection on-demand via mobile network
• Secure remote access

Valmet network of experts
• Experts available for process troubleshooting
• Periodic or on-demand services

Analysis and support
• Nip profile analysis
• Condition analysis
• Reporting
• Roll maintenance data
• Vibration data

Payback on efficiency
• Improved profiles through better nip load conditions
• Less broke and better runnability
• Cost savings on covers and fabrics

TeamViewer connection
iRoll data onsite
Connection via mobile or fixed network
iRoll software updates online
Valmet Intelligent Roll Solutions - iRoll
Aimed at improved efficiency, quality and performance

<table>
<thead>
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<th>What is iRoll?</th>
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<td>An online profile measuring tool for improving nip profiles, parent roll hardness profiles and tension profiles</td>
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<th>Where is it used?</th>
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<td>Highly suitable for paper, board, pulp or tissue production machines</td>
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For permanent or temporary use

- iRoll has sensors under the roll cover for measurements
- iRoll Portable is a temporarily installed solution for nip or process analysis and tuning

Wireless data transferred from roll to receiver and to monitors or automation system

![Diagram of iRoll installation and components](image)

- Sensors on the roll body for measuring nip load or tension profiles
- Connection to automation network by using open protocols
- Wireless power supply system (option). Battery system as standard.
Steps to improve tissue press efficiency

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- Improvement of nip profiles to ensure even moisture profiles
- Increased dewatering with optimal cover selection and surface topography
- Reduction of Yankee / hood energy consumption
- Improved sheet characteristics for fewer web breaks and faster speeds
- Early detection of nip loading equipment malfunctions
Steps to improve roll cover crown shape

By using CrownSim tools and iRoll Portable Analysis
Steps to improve roll cover crown shape

By using CrownSim tools and iRoll Portable Analysis

Analysis and crown calculations

New optimized crown shape

3D grinding

New roll cover material
Steps to improve roll cover crown shape
By using CrownSim tools and iRoll Portable Analysis

Moisture profile improvement, better cover and felt lifetime
Energy savings and increased machine speed with Valmet iRoll and roll cover upgrade

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Cost savings

• 5% energy savings due to decreased steam consumption
• 5% energy savings due to decreased roll drive loads

The 500th case to utilize Valmet iRoll technology

Results

• Improved dryness and felt profiles
• Skewness eliminated and crowning updated
• Machine speed up by 30 m/min
• Improved energy and production efficiency
Cooperation was extended to other machines

"The results from our cooperation with Valmet have been highly satisfying in energy savings and increased machine speed. We are looking forward to continuing the development to improve the energy and production efficiency even further and to make more cost savings.

Mr. Jong-Dae Byun,
Director & Mill Manager at SsangYong C&B"