Valmet iRoll Portable Press Analysis

For better press nip profiles and runnability

Valmet iRoll Portable Press Analysis services allow paper and board makers to analyze profiles online quickly and cost-effectively, without expensive equipment investments. This unique service can measure nip profiles under dynamic conditions during maintenance shutdowns.

**Benefits**

- Accurate dynamic nip profile measurement for press nips
- Remove nip skewness and loading discontinuities
- Improve moisture profiles after press nips and avoid wet/dry edges
- Prevent roll cover failures and uneven wearing of roll covers and fabrics, extending cover life

iRoll Portable Press Analysis replaces traditional nip impression film and electric nip measurements, which have previously only been used in static conditions – leading to errors and unreliable results. The rolls are rotating during the measurement, showing the nip profiles under true running conditions. It helps to improve paper profiles with better nip loading and 2-sigma values. True nip load information assists in selecting the right crowning parameters. This analysis helps you see how the nip closes under dynamic, real-time conditions: Does one side close first? This can lead to a skewed loading condition. iRoll can be used for all paper, board and tissue machines, as well as pulp drying lines.

**A tool for dynamic nip profile analysis and related troubleshooting**

Analysis is performed during a shutdown to measure and optimize press nips and suction rolls and to provide data for maintenance planning. The measurements use roll temperatures, suction roll vacuums, nip loading levels, and fabrics that are as close as possible to the true production conditions, e.g. the felts are wet all the time and rotating through the nips as usual.

**Scope of service**

- iRoll sensors are attached to the roll surface using high-strength tape.
- Measurement electronics are mounted on the end of
the roll or journal.

- Measurements are taken under dynamic conditions while the rolls are rotating, which shows how the sensors are attached to the roll surface using high-strength tape.
- Measurement electronics are mounted on the end of the roll or journal.
- Measurements are taken under dynamic conditions while the rolls are rotating, which shows how the friction, nip load control devices, etc. are operating and their contribution to the nip loading profile.
- Several nips can be analyzed at the same time.
- Measurement and analysis can be done in a short shutdown (6–8h).
- The equipment takes 2–3 hours to install, the measurements and tests take 1–3 hours, removing the equipment takes about 1 hour.
- Measurement data is analyzed online and illustrated with color maps and graphs.
- Whenever possible, bump testing is conducted during the analysis to understand the dynamics of the nip and immediately optimize the CD profile and loading levels.
- The results are reported in a thorough report with recommendations for improvements. The recommendations include e.g. possible maintenance needs, roll covering/grinding needs, crowning changes/optimization, process tuning needs, parameter changes, spare part needs, and rebuild needs.

Quick online measurements

- Quick measurement: up to 5 profiles a second
- Also shows all other loading fluctuations
- Measurement data and effect of nip load parameter changes can be seen in real time.
- Enables process parameters (e.g. Yankee cylinder temperature, Valmet Sym Nip Roll crowning, loading cylinder pressures, suction roll vacuums) to be tested and tuned up online.

iRoll sensor on a tissue machine press roll.

![Image](image_url)

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Load level (normalized)

CD position

Valmet iRoll Portable Press Analysis measurement data from a press nip. Tests with various loading levels illustrate nip profile changes when loading changes.