

RFID tracking for superior service



RFID takes on the world

With RFID, Botnia offers an effective and reliable way to track pulp units, generating significant savings in material flow management.

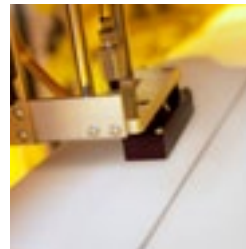
Botnia's RFID is the world's most effective ID:

- RFID or radio frequency identification is a way to remotely identify and track pulp units using RFID tags and radio signals
- It offers unmatched accuracy, reliability and efficiency for the tracking process
- RFID enables port operators to optimise their stock management and increase labour efficiency with real-time tracking information always at hand
- RFID helps to avoid shipping errors and automates processes that once required manual work
- Our customers will have the opportunity to use the tracking information in their planning and operations
- With RFID, we increase the quality of our customer service and deliveries



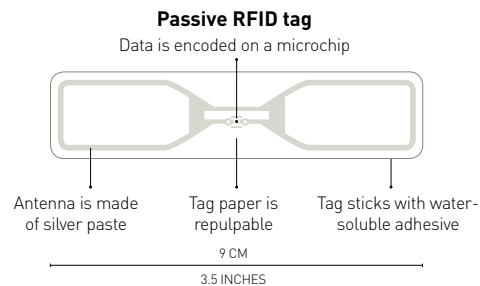
RFID improves effectiveness and reliability throughout the entire supply chain

Here is how:



At Botnia mills, RFID tags are encoded and automatically applied inside every pulp unit between bales.

One tag is used per tonne of pulp. The microchip on each RFID tag contains the pulp unit's grade name and production lot number.



The RFID system includes a reader and a tag. Each tag has a unique identification number encoded in them. When scanned, the RFID tag discloses information to the reader. Tags may be scanned with forklift readers, gate readers or handheld readers at any point in the logistics chain.

Papermaking process and product safety assured

Botnia's RFID tags have been developed specifically for identifying pulp. Since the tags are not removed at any time after application, they must fully comply with the dirt count specifications and end-uses of the final products.

The leading healthcare and research authorities, VTT Technical Research Centre of Finland and ISEGA have found the RFID tag perfectly safe and suitable for food and pharmaceutical packaging. During extensive testing at both a pilot and full production scale RFID tags have not affected the quality of the end-product or runnability of the papermaking process.

The tag's label paper and water-soluble adhesive dissolve in fibre pulping. Additionally, the materials in RFID tag's antenna and microchip have no impact on the frequency of deposits, holes or defects in paper and board. Botnia uses passive RFID technology. The tags do not contain batteries; they use only the energy from signal of an RFID reader.

RFID



RFID is 99.9 percent accurate, making it better than any other identification solution available. It requires no direct line of sight for identification. RFID is not affected by dirt, dust or other environmental factors. RFID tags are positioned on both ends of a pulp unit so they can be identified from any side.



Port operators will also benefit from using RFID tracking. It simplifies their stock management and automates receiving of inbound shipments.

RFID helps to avoid costly errors and improves labour efficiency as there is less manual work.





An entire shipment of RFID tagged pulp can be identified quickly and easily.



Real-time tracking of pulp with RFID makes the whole supply chain more effective. It enables on-time delivery control and transparent visibility to shipments. RFID improves production planning and enhances Botnia sales support's ability to provide better customer service.



The RFID reading is logged in Botnia's database. This information is available through our extensive reporting tools.



The introduction of RFID will benefit the whole pulp and paper industry. Not only will RFID bring you accuracy and efficiency, it will bring you the Fibres of success.

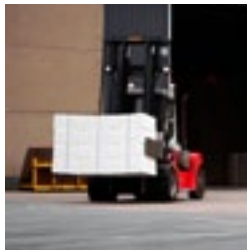


RFID automates logistic processes. It provides easy trackability and resource allocation. You always know where RFID tagged pulp is. No extra handling is required during transport. RFID increases the quality and reliability of the entire supply chain.



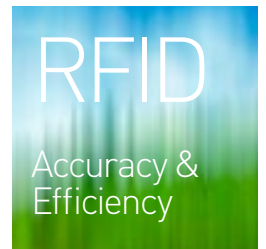
The introduction of RFID will not require our customers to make any investments or changes.

However, the availability of RFID data presents a range of opportunities, if they choose to use the tracking reports.



RFID enables identification and tracking of the detailed production history of pulp.

You will be able to use RFID tracking information in your own enterprise resource planning (ERP) system. RFID offers the option for total control over stock management and material flows. You save both time and money.



Botnia is keen for RFID-based identification to become a standard for pulp industry supply chains. It will change the way you think about pulp logistics.

Successful trial runs and implementation to production

RFID is the world's most effective ID. To prove it, Botnia has put the RFID system through rigorous testing. Initially Botnia's Joutseno mill produced a trial lot of 2,400 tonnes of pulp fitted with RFID tags in two separate production runs. The pulp was transported to a partner paper mill where only RFID tagged pulp was used during the test run. The results were excellent; the pulp functioned flawlessly and as planned.

The full production scale testing of the RFID system and identifier tags has begun at Botnia's Rauma mill in co-operation with our customers. Several paper mills have been using pulp with RFID tags in numerous multi-week test runs. All tags have remained attached to bales during transportation and have been readable upon arrival. No runnability or quality issues have been caused by RFID-tagged bales.

The operational infrastructure and communication networks required for RFID tracking will be completed simultaneously at the ports of Rauma, Finland and Bremen, Germany. Botnia's other mills at Kemi, Joutseno and Äänekoski, and loading ports in Finland will become RFID-capable by the end of 2011. The tracking system will cover the entire Botnia logistic chain by the end of 2012.

