MATERIAL FLOW HOW
PESMEL

FLEXIBLE PACKAGING SOLUTION FOR DIVERSE NEEDS

- New automated coil packing line to Corus Ijmuiden

During the past years Corus group has made big investments by having a new hot dip galvanizing line and a cold rolling mill to company's Ijmuiden facility in Holland. At the same time the company purchased a versatile, automated Pesmel coil handling and packing line, which is situated in the new logistic hall in Ijmuiden.

Corus Ijmuiden mill is producing two different types of coils, galvanized and organic coated. Different product types set requirements to the equipment as both products are handled in the same line. For this reason the line includes a special carriages equipped with turning cover, which protects the organic coated coils from the oil originated from galvanized coils.

By this carriage system the coils are fed into the logistic hall for packing. This kind of solution of transportation did not need any civil work during the installation, which was cost-effective for the customer.

The packaging includes through the eye wrapping with stretch film and automated board strap feeding devices, circumferential and radial strapping and a station for manual edge protection inserting equipped with automated steel corner protection former and at the end, the labelling. The automated packaging line is designed to be very flexible as ten different packing codes with different materials can be performed. The capacity of the packing line is ca. 15 coils/hour.

"In this project we had challenging things to handle. In addition to having two different product types, the weight of the steel coils vary from 2,7 to 30 tons", explains the Project Manager Jouko Metsänranta from Pesmel. "The system automation was also challenging to realize, because of so many packaging codes and different functions", he adds.

The line will be running 24 hours a day with only one operator. "As we here in Pesmel get inspired from challenges, this was an interesting project to carry out", concludes Mr. Metsänranta •

SALES DIRECTOR JUHA SUKSI

The year 2008 is interesting time for Pesmel. The company will celebrate its' 30 years anniversary. For three decades we have been serving our customers with our automated handling, packing and loading systems. It is a good time to thank our customers for successful co-operation during these years.

Pesmel's future also looks bright. As we all know, in order response to the customers' needs, the company has to keep on developing itself constantly. Pesmel has been seeking opportunities to develop itself and thus made changes in company's ownership by selling part of the company to a group of Finnish investors.

These arrangements will improve Pesmel's ability to grow to new height and develop further as a global expert in material handling business. This will also provide good possibilities to serve customers better and utilize the resources of the whole Pesmel group more efficiently.

With this change Pesmel Group Oy will provide its' customers extensive 30 years' experience and know how in material handling, packing and warehousing globally. You are welcome to take contact in order to find the opportunities for our co-operation.

Wishing You a nice Summer time and successful business,

Juha Suksi, Sales Director

SSAB INVESTS IN HIGH AUTOMATION TECHNOLOGY IN PRODUCT PACKING

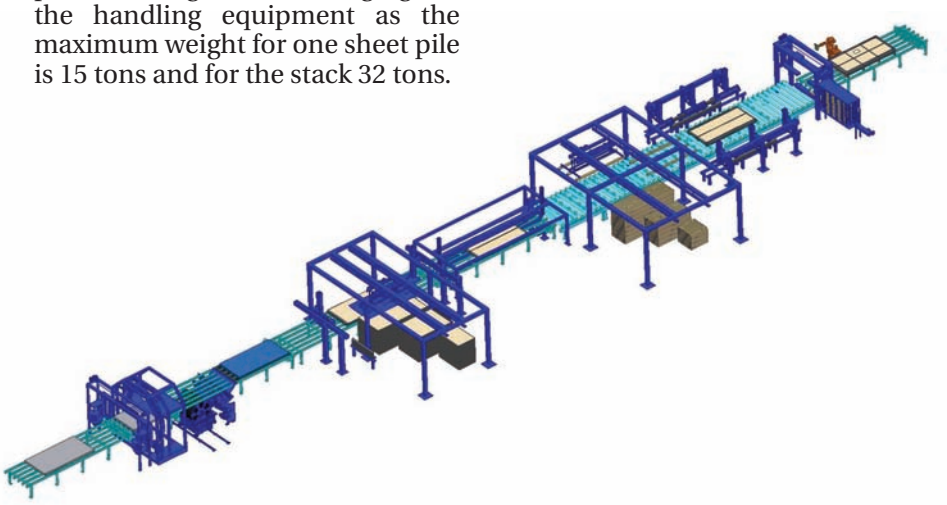
- New sheet packing line to SSAB Tunnplåt

SSAB (Svenskt Stål Aktiebolag) is a producer of high-strength steel for small niche markets where the company has a leading position internationally. SSAB group has a turnover of EUR 3,3 billion. Strip products have a share of 39 percent of the company's total sales as one fifth comes from sheet production.

Pesmel Oy has been selected to supply a new automated sheet packing line to SSAB Tunnplåt AB, Borlänge, Sweden and another line with same functions as an option. SSAB has been renewing their finishing areas in the mill sites of Borlänge and Finspång. Earlier in 2007, the company invested in four Pesmel coil packing lines. The new sheet packing line is a positive continuum in strengthening the partnership between SSAB and Pesmel. Start up of the line is scheduled to be at the end of 2009.

The new sheet packing line is highly automated with packing capacity of ca. 38 sheet piles an hour. The line is situated after an existing slitter. The sheet piles are packed for further transportation with plastic or paper surface protection, stretch film wrapping around the pile with automated film roll changing, palletizing with edge protections and strapping functions, weighing, labelling and stacking. All the functions are performed automatically. The high product weight is challenging for the handling equipment as the maximum weight for one sheet pile is 15 tons and for the stack 32 tons.

Pesmel has a long experience in implementing the latest packaging technologies with the leading industrial companies. Pesmel is one of the pioneers in supplying highly automated packing solutions for metal industry. For metal product packing and handling, Pesmel has references in Europe, USA, India and in China •



AUTOMATED STEEL QUALITY MANAGEMENT ON LINE

Pesmel has taken the opportunity of been a pioneer and developed together with a customer a new concept where a piece of steel can be analyzed practically on line. The results can be used to control and track the performance of the caster. The system has now been in operation for few months and the results are better than expected.

A very challenging problem to steel producing companies in controlling the caster quality has been that there are no "instant" feedback methods available. What most mills do, is they periodically take a small sample of the cast steel, etch it and then see what problems the steel may have e.g. corner craking, argon bubbles, black spots etc. This causes millions of tons of scrap and remelt across the steel industry since there are no ways of repairing what was cast. The only way to deal with this is to either sell the cast as lower grade or re-melt and try again.

This operation mode is not efficient and the costs are huge from wear on equipment, labour, internal and external transportation and energy to loss capacity and earnings. Now there is a cure for this: Pesmel's highly automated slab inspection line. By this system the output of scrap can be reduced significantly and earnings increased. According to the customer, the payback time of the investment is not months but weeks.

Slab Inspection Line functions

Pesmel slab inspection line handles and pictures carbon steel slab samples that arrive from the production. A piece of cast metal (sample) is cut off from slab as soon as it exits the caster. The sample is cut with torch cutter and lifted onto input conveyor. Material handler, who deposits the sample onto the conveyor keys in the heat number. At that time all relevant information of that heat number is transferred from the mill computer system to the information system of the inspection line. Based on the heat number, the system knows, if the sample has to be air cooled (to avoid cracking) first, or if it can immediately be deposited to water quench tank.

As the sample is first air and then water cooled, the system automatically moves the sample to a machining center. The heat affected zone of the sample is rout off and the sample proceeds forward in the system. Next, the sample's routed surface is automatically washed, etched and dried.

After this, a high resolution picture is automatically taken from the sample. The picture is saved under the heat number and through the mill computer sent directly to the caster pulpit for the operator to analyze the casting results and adjust the casting process.

In the analyzing software the operator can zoom in for a closer inspection of the surface. Each and every picture is automatically stored and, if needed, they can be sent to the end customer as proof of the quality of the steel as it exited the caster. The system is totally automated process with zero operators required.

Success story from pioneer project

The slab inspection line is one of the kind in the world and it set many challenges to Pesmel professionals when designing this fully automatic system. For example, the high temperature of the slab samples set special requirements to machines and required product development work, as this was a new area of operation to Pesmel. However, the results speak for themselves and the customer is satisfied to Pesmel's ability to provide comprehensive material handling systems.

This new system helps mills produce higher quality steel without adding any resources to the process. It also reduces the cost of quality sampling, while significantly increasing the amount of sampling, as practically every heat can be etched, sometimes multiple times.

The system provides significant competitive edge to steel producers as they can prove the quality to their quality consciousness customers like automotive industry, for example. Automated slab inspection line also provides outstanding tool to optimize the caster maintenance cycles as the SPC (statistical process control) can be fully implemented.

Among metal industry Pesmel is better known from it's automated, high capacity handling and packing lines, of which the company has over ten years' of experience. During these past ten years, Pesmel has been doing pioneering work on the development and automation of the finishing end of the production chain in steel mills •

INTERNATIONAL PAPER
- Efficiency and quality by Pesmel roll handling and packing

International Paper (IP) is one of the leading paper manufacturing companies in the world. Pesmel has supplied a new roll handling and packing line to IP´s Riegelwood, NC fluff pulp mill in the United States. The new Pesmel line is one key element of the production process, as it is capable to handle, sort and pack rolls with high capacity enabling the production to run continuously without stoppages.

In modern mills, the production capacity has reached such heights that it is impossible to continue working in the finishing areas without automated systems. Currently the general scenario is that there is a new set of rolls entering from the winder into the finishing in every two and half minutes. Thus the quality control, sorting, packaging and labeling has to be completed in a certain time. This sets requirements also to the automated system, not to mention to manual working phases.

From mechanical perspective, Pesmel line looks like a typical handling line with packing equipment, but it contains applications of the very latest industrial automation. For example, sorting and packaging functions are fully automated.

The handling and packing line is fully integrated into IP's IT system. The operator's main task is to monitor the system as the handling and packing line effectively acts as a decision maker. After the winder has made the slits, Pesmel's system communicates with the mill computer and reads what kind of packages are ordered as well as their quantity (the packet may include 1 to 4 rolls). From there, the handling and packaging line will generate the relevant processes accordingly.

Sorting
After the winder, the rolls enter to Pesmel system and roll sets are formed according to customer orders. As the sorting function with highly effective software architecture is a part of Pesmel's system, no modifications will be required to the existing winder.

Packaging
The packaging functions include two axial and radial stretch film wrapping stations. Combined axial and radial wrapping ensures a moisture and dust proof package. The extended corner protection is confirmed with unique film folding function, which folds the stretch film at the roll ends during radial wrapping.

The packaging lines include the automated change of a stretch film roll as the film runs out. This function changes the empty film roll for a new one automatically without presence of an operator. The maximum pre-loading capacity is 8 pcs of 80 kg film rolls. The film roll storage magazine can be loaded while wrapping function is running.

Quality control
Pesmel system incorporates machine vision equipment that can be applied to multiple tasks, for example to detect second-rate products and thus avoid customer reclamations. The machine vision can also detect core hang out and scoped rolls. The second rate rolls will be rejected automatically.

Maintenance
Pesmel system is designed with a maintenance log. This log is able to collect all the possible errors within the system and report them to the high level IT system of IP. This function enables the maintenance specialists to review matters accordingly and schedule the maintenance tasks •

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