Pesmel Sheet Packing Line is designed to protect metal sheets against moisture, dirt and damages. The key equipment in the line are Longitudinal Steel Wrap system, equipped with Edge Wrapping. This system is especially designed for sheet packing and it gives an excellent protection to products heading for storage and transportation.

Pesmel system feature is flexibility. The sheets are automatically piled on stacks by weight, height or number of sheets. Piling by number of sheets and thus making customized piles is adding customer value as the packages are ready to be shipped directly to the customer. The system is able to customize the package, for example smaller sized sheets can be piled on patterns and packed as a bigger package. For sensitive materials paper is automatically inserted between every sheet.

The camera inspection of the surface adds quality value to the line. The operator can monitor from the safe distance, see defects and choose, if rejecting is necessary. The pictures can be saved on a hard disk and used as quality securing, if reclamations or transport damages are claimed.
Working Procedures

1. Loading Station

The Basic Pesmel Packing solution is a fully automatic line including tracking, level 2 control system and PesInterface connected to MIS, as a standard for all functions.

Measuring the sheets by PesProfile in the beginning of the line makes it possible to handle different sheet sizes and customer packing requirements automatically without any set ups. The right packing method is received from the tracking information fully automatically, as well as the various of choice for required packing. The PesWeighing is scaling the stack weight. All the information is compared to the information received from MIS.

In the Steel Wrap station, the sheets are wrapped without a cradle in order to reach a very tight package. Protections against mechanical stress are added automatically as the packing specification requires. If required, manual functions can replace the automatic functions in some tasks.

2. Wrapping Station

Pesmel Packing Line starts with wrapping station, which gives the protection against moisture and dirt. The station is equipped with following main equipment: Edge wrapping machine and Longitudinal wrapping machine.

The wrapping starts by edge wrapping. This machine is reinforcing all 4 sides of the trimmed plate stack with thick film. According to Pesmel philosophy “having the material there, where it’s needed the most”, the machine is in the same time making moisture and dirt protection properly and saving the packing costs by optimizing the use of packing material.

Immediately after the edge wrapping, Longitudinal Wrapping starts. The ring type wrapper is making an “airtight” package, which gives an excellent protection against moisture and dirt. Optionally the wrapping machine can be equipped with 2 packing materials.
3. Bottom protection feeding

Mechanical protection starts by feeding the bottom protection under the ready wrapped sheet stack. The station is equipped with following main equipment: Bottom Protection Feeding unit and Roll Magazine.

The 2-4 mm thick canal or solid plastic is fed automatically from between the conveyors with synchronized speed. The correct length is cut automatically according to sheet dimensions received from the tracking information. As an option, the station can be equipped with movable magazine carrier.

4. Top cover installation

Top cover installation is made by manipulator. Correct length combination is installed automatically according to the package length. The station is equipped with the following main equipment: Top cover manipulator.

As an option, the front and end edge protectors can be installed by applicators, placed in the same station. The installation is made after the top cover is installed.

5. Longitudinal Strapping

Automatic longitudinal strapping is attaching added materials and tying up the sheets on stack. The station is equipped with the following main equipment: Movable Longitudinal Strapping Machine and Chain conveyor with integrated strap canals.

The amount and location of straps is generated automatically from tracking information according to packing code.

6. Side edge protection and longitudinal runner wood feeding

After the longitudinal strapping, the sheet stack is driven to the side edge protection station, where the longitudinal runner woods are fed and side edge protectors are installed. The station is equipped with following main equipment: Runner wood manipulator, stack lifter and side edge protection applicators.

The sheet stack is lifted off the conveyor and longitudinal runner woods are driven under the stack. The manipulator automatically feeds correct length and combination of woods to the conveyor.

The side edge protection applicators are installing the protectors according to package length. Optionally the station can be equipped with edge protection formers, which manufacture the correct length protectors according to the tracking information.
7. Lateral strapping and runner wood feeding

Lateral runner woods and straps are added automatically in this station. The station is equipped with following main equipment: Runner wood feeding system, Lateral strapping machine and Runner wood magazine. The number and location of runner woods and straps are generated automatically from tracking information according to the packing code.

As an option the station can be equipped with long wood handling system, which is automatically sawing the correct length runner woods according to package width. Short pieces of wood are extended automatically by nailing unit and thus the usage of wood is optimized.

8. Labeling and unloading

Finally the packed sheet stack is labeled by a robot. Pesmel Automatic Labeling finalizes the packing operations. The ready packed and labeled sheet stack can be picked and transported from the unloading conveyor by a logistic system, crane, fork-lift or by some other method. Pesinterface, connected to the mill information system (MIS), tells that the sheet package is ready for pick up.

Pesmel Logistic and Warehousing

From the unloading station, the sheets can be taken into our Logistic and/or Warehousing system (High Bay Storage).