

Case study: Renfe

Mecalux develops a warehouse model that suits all Renfe maintenance centres

Location: Spain



Mecalux, Renfe's regular outfitter, has designed a warehouse that is viable for any of the railway company's maintenance centres. The solution was to combine a miniload warehouse for boxes, an automated pallet racking warehouse and a warehouse with cantilever racking allocated to bulky items. Everything is controlled by the Mecalux Easy WMS warehouse management system.

The miniload warehouse is designed to store small sized spare parts in plastic boxes of 600 x 400 mm



Automated miniload warehouse

It is an ideal solution for storing small sized spare parts in 600 x 400 mm plastic boxes (euroboxes).

A stacker crane is responsible for transporting the boxes between order prep stations and locations in the single-deep pallet racking installed on both sides of the circulation aisle.

The picking stations, located at one end of the aisle, allow quick and easy access to the product that is inside the boxes. These are automatically moved to their positions by following the sequence indicated by the warehouse management system.

Product replenishment is carried out from the same station where picking functions are performed.

So that replenishment tasks do not hinder the preparation of orders, the so-called off-peak hours are utilized, i.e., when normally there is less prep work.

Automated warehouse for pallets

Taken from a design very similar to the miniload warehouse and set up right next door, this warehouse was allocated to medium-sized and weight components placed directly on europallets.

The racks, which are either single or double-deep, are arranged on both sides of the aisle where a stacker crane also circulates to handle the pallets.

Already palletised products are deposited by handling forklifts in an automatic checkpoint that monitors the status of the pallets, its dimensions and weight.

Order preparation can also be carried out from the pallet itself, which is automatically sent to the output conveyor, then picked up by the forklift (pallets with a single product).

Most commonly the pallet is sent directly to the manual preparation station, where the operator removes the product. Then the pallet is transported to its new location on the racks.

The automated warehouse is reserved for medium-sized and weight components placed directly on europallets



Warehouse for bulky parts

This warehouse was reserved for oversized goods that cannot be deposited on pallets without them overflowing the load.

As a solution for the wide variety of product dimensions and weights managed by Renfe, heavy-duty cantilever racks were installed.

In this type of racking, the unit loads rest on the cantilever arms that can store everything from metal profiles to large pallets without losing capacity.

In order to handle products of that size within an aisle of limited proportions, they were supplied with side-loading reach trucks that are able to work both quickly and safely.

Cantilever racking serves to accommodate over-sized goods that cannot be deposited on pallets without overflowing the load



Warehouse management: the Easy WMS

All management of the different warehouse areas depends on the Easy WMS warehouse management system by Mecalux designed to be used in both traditional and automated warehouses, optimising all movements, processes and operations.

This powerful software works via different parametrisable rules and surveys the distinct operations that are carried out in a warehouse; from product input to dispatch, passing through stock controls and order preparation.

Automatic movements performed by stacker cranes and the main conveyors are

also governed by the Easy WMS, through the Mecalux Galileo control program.

The Easy WMS warehouse management system and the central management system (ERP) are in permanent communication to facilitate the remainder of the operations that take place outside the warehouse, essential to any company.



Advantages for Renfe

- **High storage capacity:** the Renfe warehouse can store a large quantity of 600 x 400 boxes and also pallets.
- **Wide variety of products:** thanks to various solutions installed in the Renfe warehouse, they can store all kinds of products of different sizes and weights.
- **Warehouse model:** Mecalux has developed a warehouse concept applicable within any of the Renfe service centres, which saves time and costs.
- **Total control:** the Mecalux Easy WMS warehouse management system optimises all functions related to the flow of goods.

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Technical data

Capacity adapted to each warehouse