Case study: Next Generation Films
An AS/RS for a large variety of products

Location: USA

Interlake Mecalux has built a new Automated Storage & Retrieval System (AS/RS) for Next Generation Films with a storage capacity for more than 15,400 pallets of different sizes and turnovers. The installation is managed by the efficient Easy WMS warehouse management system by Mecalux, capable of maximizing the productivity of all operations being performed.

About Next Generation Films

Founded in Ohio (USA) in 1994 under the direction of David A. Frecka, Next Generation Films is a plastic films business who makes product packaging for distinct industrial sectors, in particular, food products.
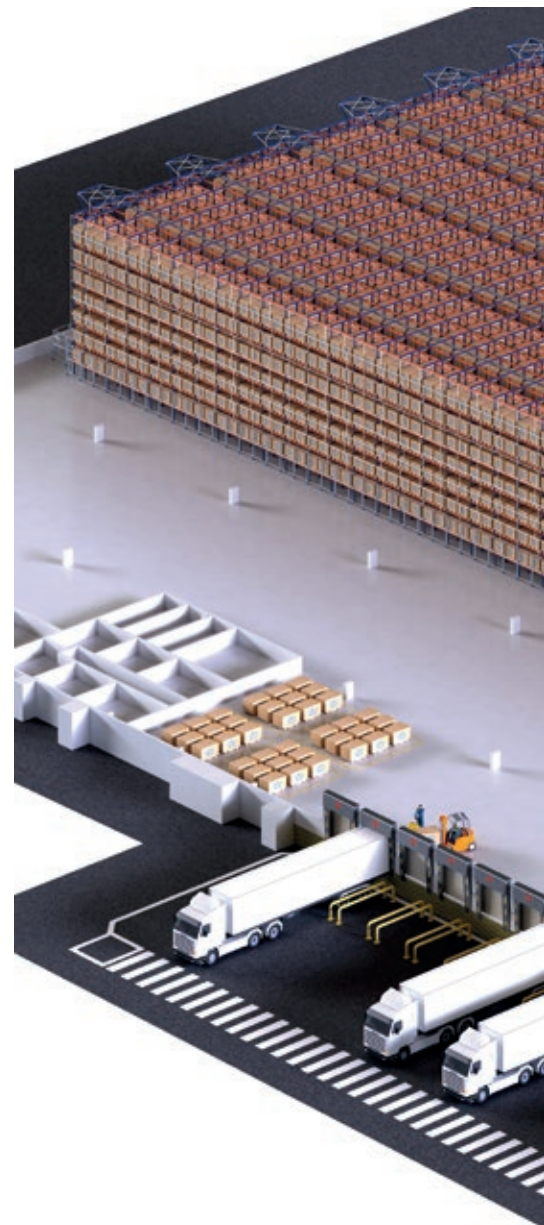
The company stands above the crowd because of its constant innovation in production processes, introducing the market's most cutting-edge equipment when manufacturing high-quality products.
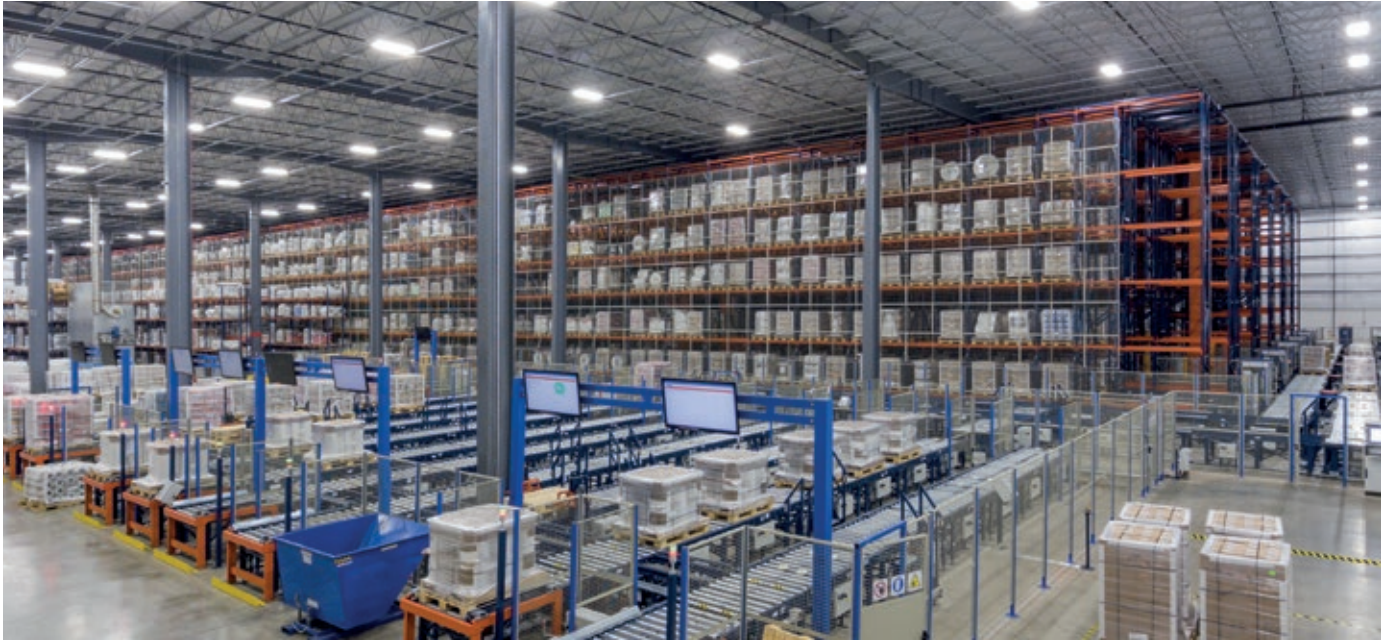
Needs and the solution

Next Generation Films used to own a warehouse next to its production center with a 3,000 pallet capacity and had other leased warehouses where it accommodated all its production. Over the last few years, the enterprise has experienced huge growth and, determined to deal with this situation, required a warehousing solution for the films used in the food industry.
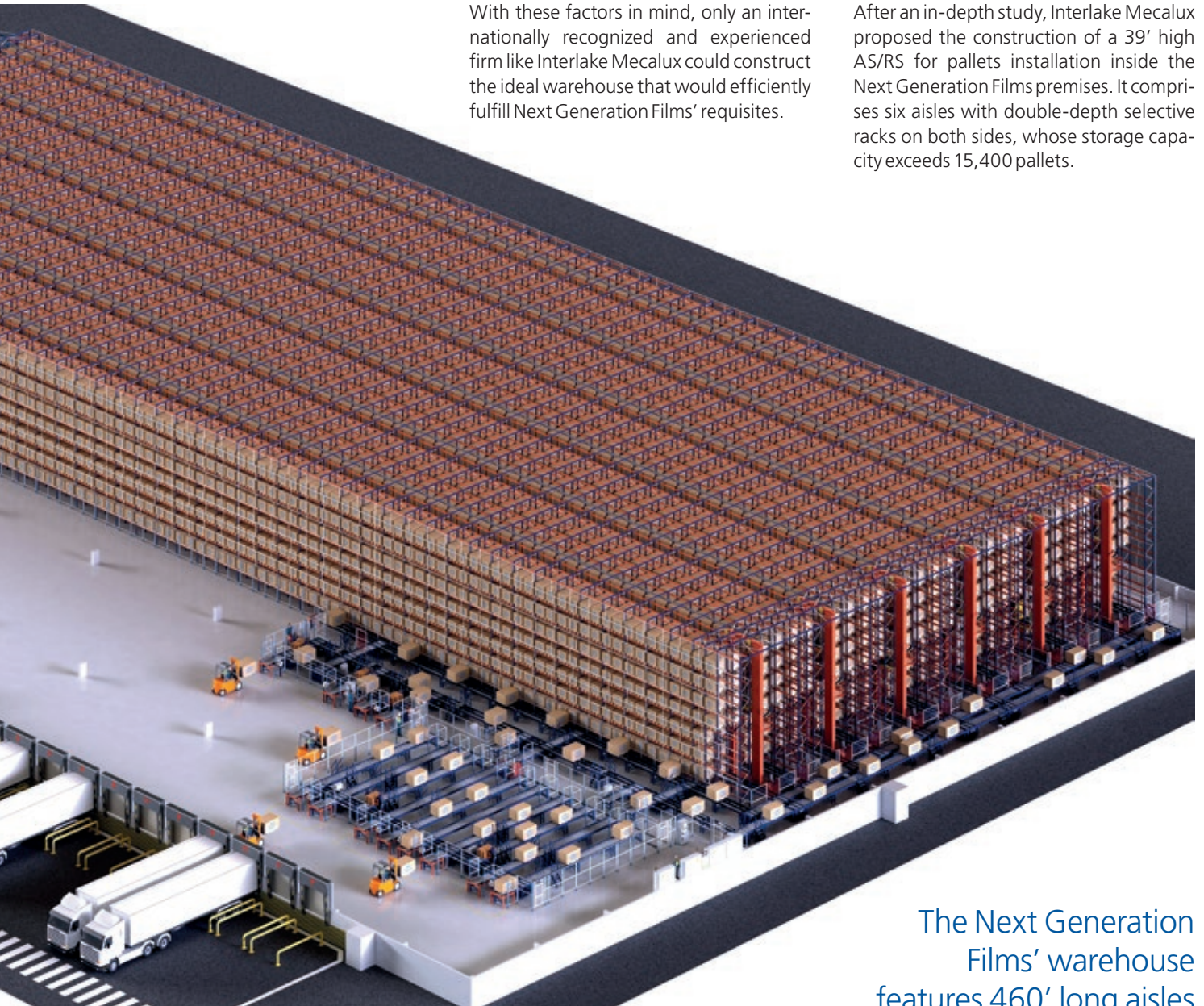
This new installation had to offer a large capacity, guarantee steady inflows and outflows of goods and provide very speedy operations. Moreover, for this type of warehoused product, total traceability of merchandise is essential to keep track of its status and location at all times, as well as to maintain excellent distribution, order and cleanliness. The project posed a huge challenge, due to the massive variety of different sized products and pallets Next Generation Films operates with daily.

With these factors in mind, only an internationally recognized and experienced firm like Interlake Mecalux could construct the ideal warehouse that would efficiently fulfill Next Generation Films' requisites.

After an in-depth study, Interlake Mecalux proposed the construction of a 39' high AS/RS for pallets installation inside the Next Generation Films premises. It comprises six aisles with double-depth selective racks on both sides, whose storage capacity exceeds 15,400 pallets.

The Next Generation
Films' warehouse
features 460' long aisles

The AS/RS

Initially, the warehouse was only going to have five automatic AS/RS stacker cranes. However, considering the growth rate of Next Generation Films and its prospects, it opted for one more aisle and installed six AS/RS stacker cranes in all.

SKUs are deposited in the corresponding locations based on turnover (consumer products are placed in the front of the warehouse and those in less demand, at the rear). This layout optimizes the movements of the handling equipment and boosts the number of cycles.

The AS/RS stacker cranes in each aisle ensure a constant flow of products without operator involvement, eliminating any logistical errors due to manual management. Their job is to shift the goods between the racks and the inbound and outbound conveyors.

These machines operate at a travel speed of 590 ft/min and 125 ft/min when elevated. They include double-depth telescopic forks able to reach the second pallet position on all levels.

The system automatically delivers the slave pallet during the inbound process and recycles it back into the system after the outbound pallet is taken for shipping

Warehouse inputs

A full pallet conveyor circuit located on one side of the racks is entrusted with the automatic entry and exit of the goods.

The company works with pallets of different sizes and qualities. For this reason, 40" x 48" slave pallets are employed, to assure load strength and stability both on the conveyor circuits and inside the warehouse. Input stations are equipped with an empty pallet dispenser.

Operators use counterbalanced forklifts to place the load on top of the slave pallet. Next, pallets go through the checkpoint where their characteristics are verified, and it is checked whether they meet the established warehouse parameters. Those that do not pass inspection are ejected from the circuit to be reconditioned.

Once the checkpoint approves the pallet, the Easy WMS by Mecalux assigns it a location within the installation, according to its turnover and size.

Before being inserted into the AS/RS warehouse, it is necessary to confirm that the goods are in adequate shape and the load does not overhang more than anticipated

Warehouse outputs

When a customer requests a product, the Mecalux software orders its extraction from the racks. The AS/RS stacker crane in the aisle where it is located collects the item and deposits it on the output conveyor, which connects to the primary circuit and runs to the dispatch area.

A transfer car classifies the pallets into eight preload channels capable of housing up to seven pallets each. This system groups pallets together from the same order or route to streamline its loading into distribution trucks. Along with the eight preload channels, two more channels with empty pallet stackers are installed whose task is to retrieve the slave pallets.

Easy WMS and Galileo

Interlake Mecalux has also implemented the Easy WMS. This software organizes all the functions being performed, including receptions, assigning locations and the storing of pallets according to turnover; extraction, picking and final issuing.

Easy WMS provides full view visualization of the products as they move through the system. Operators can oversee the entire process off a 40" screen set up specifically for this purpose.

The WMS is in permanent communication with the company's ERP in order to coordinate and increase the throughput of the various operations that are run in the warehouse. Since this involves an AS/RS warehouse, the Galileo control module was also implemented, in charge of monitoring the moving devices (AS/RS stacker cranes, conveyors and transfer cars), as well as fulfilling safety measures.

Next Generation Films can control and manage all warehouse operations via Easy WMS, the powerful warehouse management system by Mecalux

Advantages for Next Generation Films

- **Increased warehousing capacity:** the AS/RS warehouse offers a storage capacity that exceeds 15,400 pallets of different measurements and turnovers.

- **High productivity:** the automated installation guarantees fast and efficient service, all without possible errors.

- **Top management:** the warehouse is controlled by the Easy WMS warehouse management system by Mecalux that optimizes all movements, processes and operations which occur there.

Technical data

Storage capacity	+15,400 pallets
Pallet size	40" x 48" (loads up to 42" x 60")
Warehouse height	39'
Warehouse length	460'
No. of storage aisles	6

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