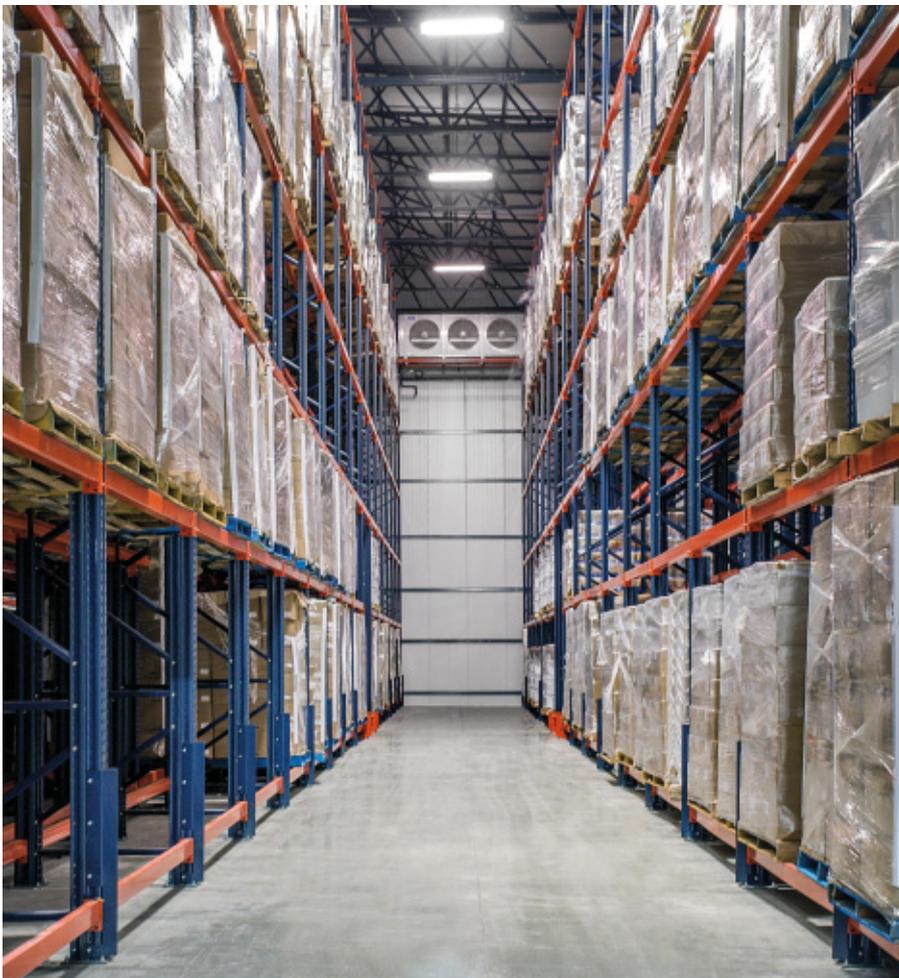


Case Study: Fruvemex

Clad-rack cold storage:
the best choice to grow

Location: Mexico



Fruvemex is one of the most renowned manufacturers of refrigerated and frozen fruit and vegetable products in Mexico. The company has reinforced its growth with the construction of three clad-rack cold storage installations with a total storage capacity of 5,728 pallets. Given the potential expansion of the company, it has plans to build a fourth installation in the future.

Fruvemex prepares chilled and frozen fruits and vegetables, with a wide selection of top quality products. Since its founding in 1986, it has continued to grow and expand its market, located mainly in the United States, Canada and Mexico.

In January of 2013, the company requested the collaboration of Mecalux to find the best solution to store all the products in its modern production centre in Rosarito, within the agricultural region of the Baja California (Mexico). After analysing the needs and characteristics of the company in detail, the decision was made to construct a 13 m high clad-rack cold storage installation with a capacity of over 1,900 pallets.

Once again, in August of 2013, Fruvemex hired Mecalux to build some new cold storage with features similar to the first, and which would share the loading and unloading docks. Some time later, the second cold storage was extended in length (cold storage 3) to obtain a capacity of 1,888 more pallets.

The first warehouse is set up to expand when necessary. This project will address the future growth of the company and adapt to market developments.



Clad-rack construction

The clad-rack warehouses are buildings formed by the racking themselves whose structure is where the vertical cladding and the roofing are placed. Mecalux chose this solution for Fruvemex because

of its suitability for cold and frozen storage. The reason is its simplistic construction, it only occupies the space and volume that is strictly required. This represents considerable savings in power costs to keep the facility permanently at the same temperature.

The entire structure is mounted on top of a concrete slab that favors the insulation of the floor with the sides of the building. The cladding and the warehouse doors have the proper thickness for the temperature they operate with inside.

Cooling equipment

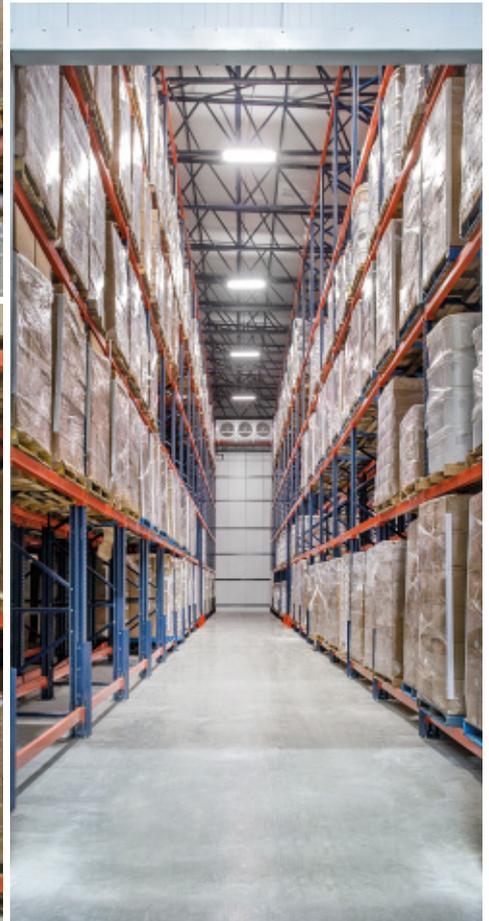
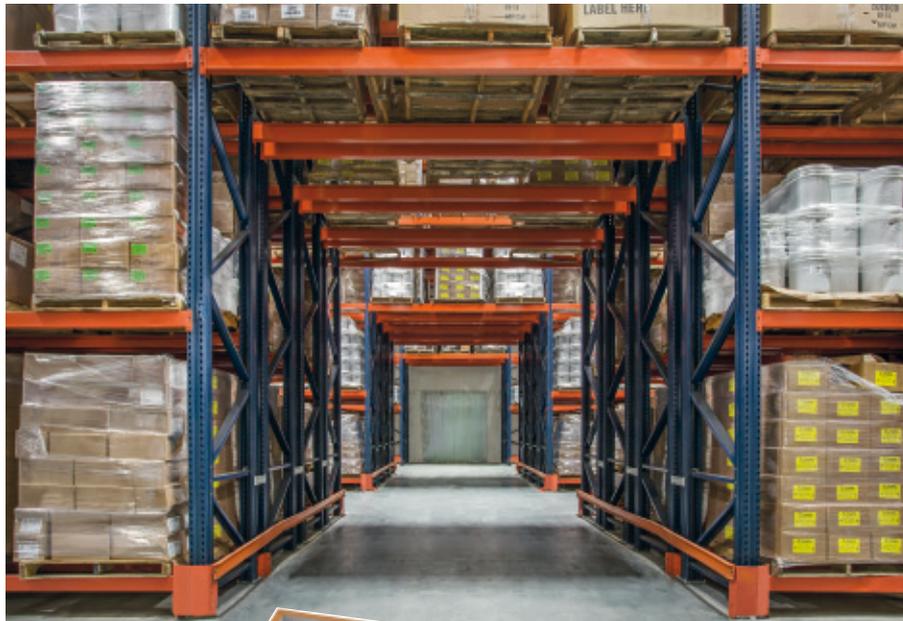
In the three cold storage, there are cooling devices placed directly on the structure without having to perforate the cladding (unlike traditionally constructed warehouses). The position of the evaporators coincides with the main aisle.

The necessary space was left between the ceiling, the air outlet and the goods to ensure proper circulation and optimum distribution of cold air throughout the warehouse



Connecting the cold storage

The three Fruvemex cold storage installations are interconnected. In warehouses 1 and 2, an underpass was opened that cuts across the racking and connects to a traditionally constructed building where the loading and unloading docks are located. In the connected cold storage 2 and 3 a portion of the cladding was removed from each of the aisles to facilitate the movement of the forklifts.



Double-depth

The cold storage installations consist of three aisles with 11 m high double-depth racking on both sides. In this system, two pallets are deposited – one behind another – on the same side of the aisle, which allows for increased storage capacity. It is a highly recommended solution, mainly when there are several pallets of the same SKU.

Handling equipment

Double-depth pallet racks require specific lift equipment to handle the goods. In these warehouses, the reach trucks used incorporate a scissor or pantograph system in the fork carriage. The mast is fixed and does not retract, instead the pantograph extends to reach the second pallet in each location.



Advantages for Fruvemex

- **Maximum use of space:** the three Fruvemex cold storage installations are clad-rack constructed and occupy only the essential space and volume, reducing the consumption of power needed to keep a constant temperature.
- **Massive capacity:** the racking installed in all three cold storage installations, altogether, offers a storage capacity of 5,728 pallets of 1,020 x 1,220 mm with a maximum weight of 1,000 kg each.
- **Future growth:** the first installation is set up to be extended with a new clad-rack warehouse in anticipation of Fruvemex's future needs.



Technical data

Storage capacity	5,728 pallets
Pallet size	1,020 x 1,220 mm
Max. weight per pallet	1,000 kg
Warehouse height	13 m
Warehouse length	42.7 m
Warehouse width	25 m

