

COLD STORAGE SOLUTIONS



AR RACKING

GLOBAL STORAGE
SOLUTIONS



AR Racking is a fast-growing international supplier of industrial storage solutions, with major projects implemented worldwide, a commercial presence in more than 60 countries and headquarters in Bizkaia (Spain).

AR Racking **designs, manufactures, calculates and installs efficient storage systems** for companies with all types of needs.

The company brings a wide range of high-quality solutions to the market resulting from its continuous technological development activity in a **fully automated production plant and its own R&D+i technology center**.

In addition to the production and technology centers in Spain, it has international offices in United Kingdom, France, Germany, Chile, Peru, Colombia and USA.

In its technological center, as an expert in storage solutions, AR Racking develops and designs storage systems that best adapt to the needs of **each storage project in cold stores and freezing rooms**.

What's more, its galvanized product has greater resistance to corrosion than other types of metal structures making it an ideal element to resist extreme environmental conditions.



85% EXPORT



100% GALVANIZED UPRIGHTS



**PRESENCE IN MORE THAN
60 COUNTRIES**



>100.000 TONS PER YEAR



**100% AUTOMATED
PRODUCTION CENTRE**



**PIONEERING
TRACEABILITY SYSTEM**



Cold Storage

Storage adapted to cold or freeze environment is currently one of the most highly-demanded solutions in the logistics sector, mainly by food and biochemical companies.

Cold storage solutions have specific features that make them different to those for other projects. Depending on the specific needs of each project, combinations of different storage systems are also an option to achieve the best performance for the customer.

The main features for cold and frozen storage, apart from the temperature, is the need for a more high-density storage system to ensure the best energy efficiency of the cooling process and a subsequent cost saving.

In these cases the quality of the storage system is of paramount importance to provide appropriate **resistance to adverse environmental conditions**, as well as the appropriate design of the solution by a skilled technical team to ensure optimal and uniform refrigeration.

Main cold storage requirements:

- SPACE OPTIMIZATION FOR OPTIMAL COOLING
- PRODUCT RESISTANT TO ADVERSE CONDITIONS
- MAXIMUM COLD STORAGE CAPACITY
- POWER COST SAVINGS
- REDUCED LOADING AND UNLOADING TIMES
- EASY ACCESS TO UNIT LOADS

Cold storage systems

AR Racking's range of storage systems which best adapt to storage situations in cold stores or freezing rooms depending on their composition or characteristics are:

SELECTIVE PALLET RACKING



MOBILE PALLET RACKING



DRIVE-IN/DRIVE-THRU RACKING



PALLET SHUTTLE RACKING



PALLET FLOW RACKING



AUTOMATED SOLUTIONS



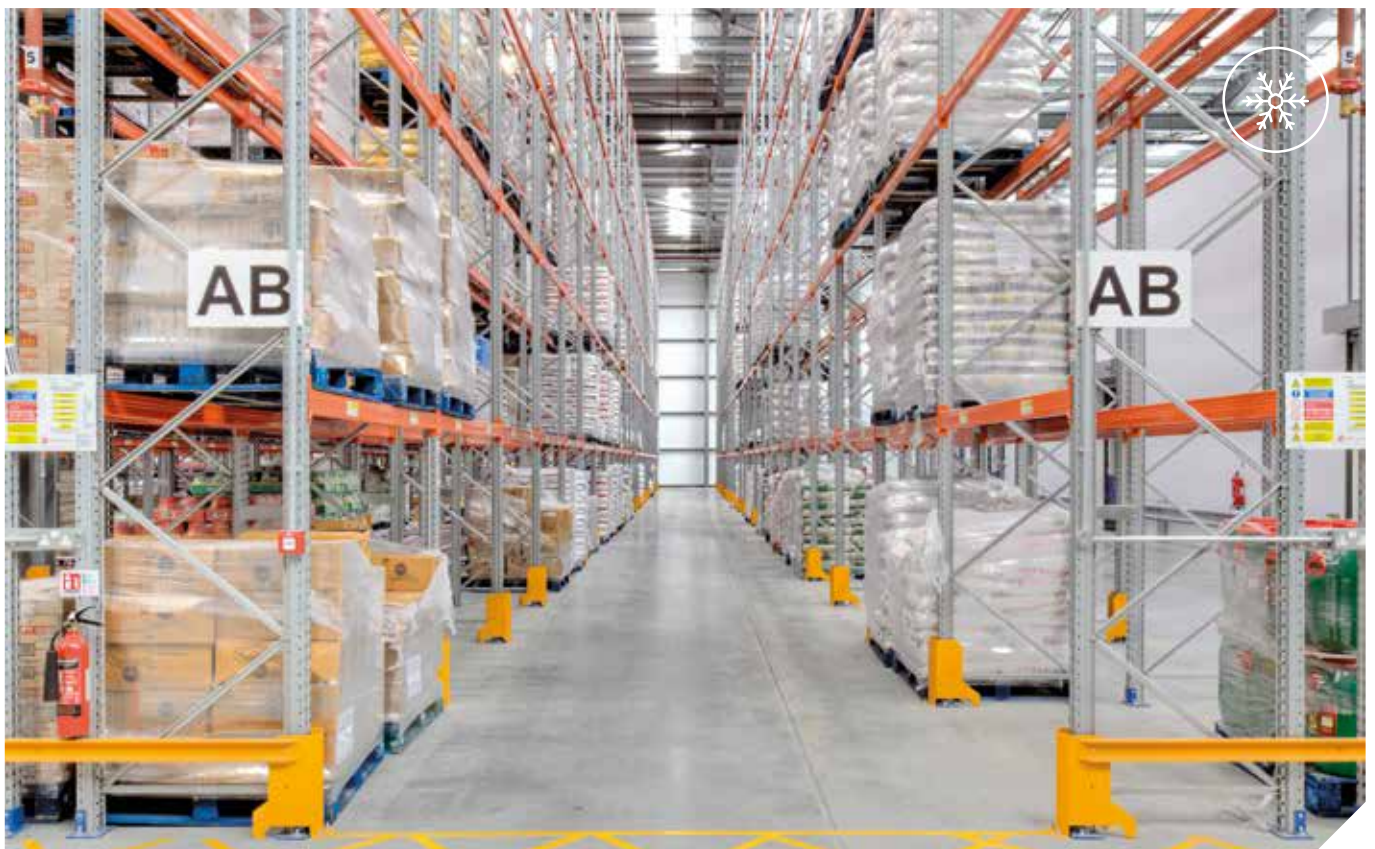
AR PAL Selective pallet racking (SPR system) for palletised loading is a storage system designed to store pallets directly and mechanically using forklift trucks. It is an effective and durable system for palletized loads.

The pallets are accessed directly along structured aisles whose dimensions vary according to the forklifts. The height of the racking

and the distance between the different levels will depend on storage needs, the handling equipment and available space.

AR PAL Selective Pallet Racking adapts to material handling equipment as Wide Aisle, Very Narrow Aisle (VNA), Automated Guided Vehicles (AGV) or Autonomous Mobile Robots (AMR).

AR PAL Selective Pallet Racking are designed in accordance with the guidelines and recommendations of the Rack Manufacturers Institute (RMI), which is part of the Material Handling Industry (MHI), and of which AR Racking is a member.



Advantages

- Allows you to locate each pallet quickly with **direct and immediate access**.
- Rigorous **control** over stored references, as each space corresponds to its unit load.
- **Saves time and effort** in the handling of goods, generating fast stock rotation.
- **Ability to adapt** to changing needs and possibility of storage at great height.
- The **wide range of accessories** allow to adapt the racking to any type of unit load, in both weight and size.
- Allows **maximum utilisation** of space, due to the ease and speed in adjusting the rack configuration to the warehouse requirements
- **Modular structure for easy assembly**. The bolted design allows a fast and easy teardown, and also the relocating or extension according to new storage needs.
- **Pioneering traceability system** in the racking manufacturer with the marking of beams and uprights produced in the AR Racking production center.
- The AR Racking range of uprights, diagonals and horizontals are **pre-galvanized**.

AR MOBILE

MOBILE PALLET RACKING

The AR Mobile Bases System for pallets is designed to compact the storage area and significantly increase warehouse capacity.

This is a high density system as the individual access aisles found in conventional racking systems have been eliminated, leaving just one aisle.

In the Mobile Pallet Racking, the aisle to be accessed for work is automatically opened using electric motors and moving components fitted on the base of the racking. The operator gives the order to open via the remote control.

The operator is responsible for sending from the remote control or main control the order to open the racking which has 2 main operating modes:

- In the "automatic or opening operating mode", with the compaction of the racking blocks one after the other, it is possible to open space for the work aisle in which you want to load or unload the unit load.
- In the "night setting mode", all the aisles of the installation open automatically and uniformly having the same but reduced width between each other, thus favouring

the improvement of air circulation inside the cold rooms.

As this is a compact system, the surface area occupied by the storage system can be reduced. Perfect when the cost of floor space is high or when it is necessary to increase the storage capacity but not possible to increase the surface area.

The application of the Mobile pallet racking system reduces the total volume of the installation, making it essential for use in refrigerated and freezer chambers at medium and low height. The savings in energy help to quickly pay off the installation.

Advantages

- Industrial mobile racking **ADAPTS TO ANY SPACE, WEIGHT**, or size of the goods, and **IS COMPATIBLE WITH OTHER AUTOMATIC OR CONVENTIONAL STORAGE** systems.
- **EFFICIENT USE OF SPACE.** High density storage system, i.e., the same space with a higher storage capacity.
- **ENERGY SAVINGS:** control of lighting and reduction of space to be cooled. Only the aisle that is open is lit. Once the rack is fully loaded, the lighting for

that row is automatically switched off.

- **DIRECT ACCESS** to any stored pallet, implying a saving in time.
- **PERFECT FOR REFRIGERATION CHAMBERS OR DEEP-FREEZE UNITS** thanks to the reduced volume to be cooled. It also permits air circulation. In the "night-time configuration" mode, all the aisles of the installation open automatically and uniformly, with an identical but reduced width between each one. This helps to improve air circulation within the refrigeration

chambers.

- **REDUCTION OF TIMES FOR MANOEUVRE AND DISPLACEMENT** with the forklift, using the remote control to select the aisle required for work.
- **ALLOWS PICKING WORK** to take place at lower levels.
- The forklift truck type **USED IN SELECTIVE PALLET RACKING** zones can still be used here.
- **REDUCED OPERATING COSTS** thanks to excellent use of space.



AR DRIVE IN

HIGH-DENSITY STORAGE
(DRIVE-IN / DRIVE-THRU PALLET RACKING)

AR DRIVE IN high-density storage system is the best solution to store homogeneous products with a large amount of unit loads per reference.

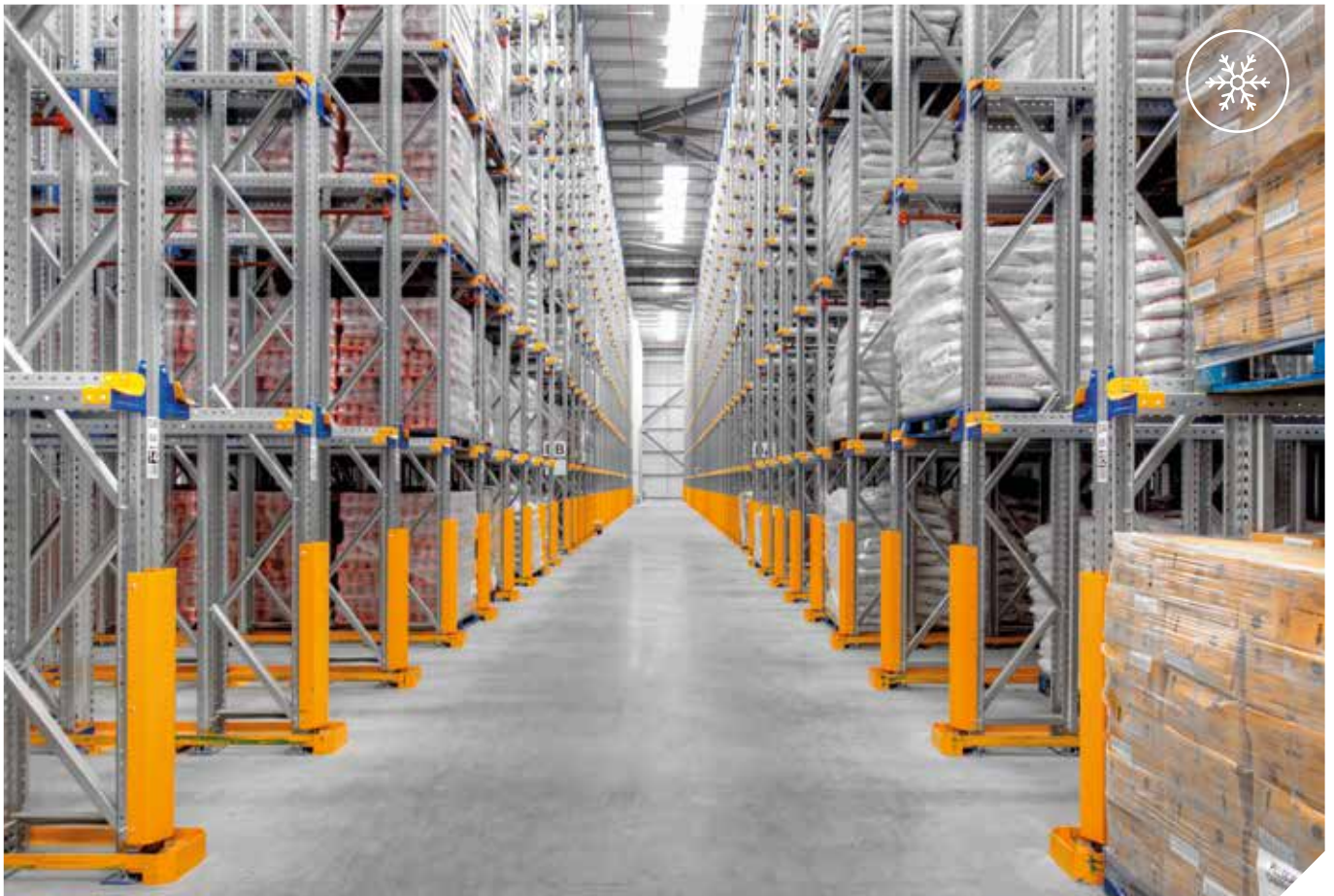
AR DRIVE IN is a high density storage racking system for pallets designed to get the maximum use of the available space and height, minimising the work aisles for the forklift.

For its ability to optimise space efficiently, this system is frequently used in cold stores and freezing rooms, achieving around an 80% increase in storage capacity.

The AR DRIVE IN system works according to the LIFO (Last in, First out) system, so the last unit load in is the first load out. It only needs

one access aisle resulting in a more compact racking system.

On the other hand, the AR DRIVE THRU system works according to the FIFO (First in, First out) system. This solution requires two entries, one on each end of the system, since the first load to enter is also the first load to be removed.



Advantages

- Space optimization above 80%.
- Low maintenance and low assembly costs make this system one of the most cost-effective systems.
- Structure compatible with other storage systems
- Provides maximum performance, and utilisation can be over 80% of the available space.
- Enables clearly arranged logistics management with full control of inventories as well as traffic and service flow.
- Designed to allow for quick reconfiguration of the structure for extension or change as needed.
- Ideal for storing low-rotation loads of the same type.
- Eliminates the service aisles found with a conventional pallet racking system.
- Maximised storage floor and height.
- Easily assembled modular structure.
- Trucks enter the system for loading.
- Includes various accessories to increase safety.
- Maximisation of space.
- Products of the same type.
- Low stock rotation.

AR SHUTTLE

PALLET SHUTTLE RACKING

AR SHUTTLE is a compact semi-automated high density pallet storage solution operated by self-powered 2-way shuttle carts that load and unload the palletized goods into the rack.

Main advantages include:

The AR SHUTTLE system enables to maximize the storing capacity

by minimizing the operating aisles needed for trucks.

As forklift truck drivers do not operate inside the racking system then safety is full guaranteed when handling pallets avoiding collisions at the racking structure. This allows to reduce the cost of maintenance both the racking system and the forklift trucks, and also reduces damages on the goods for handling operations.

The AR SHUTTLE system allows an automatic inventory control, being able to report the number of pallets in store. Remote control and bar codes provide a better control on the stock and also a drastic error reduction

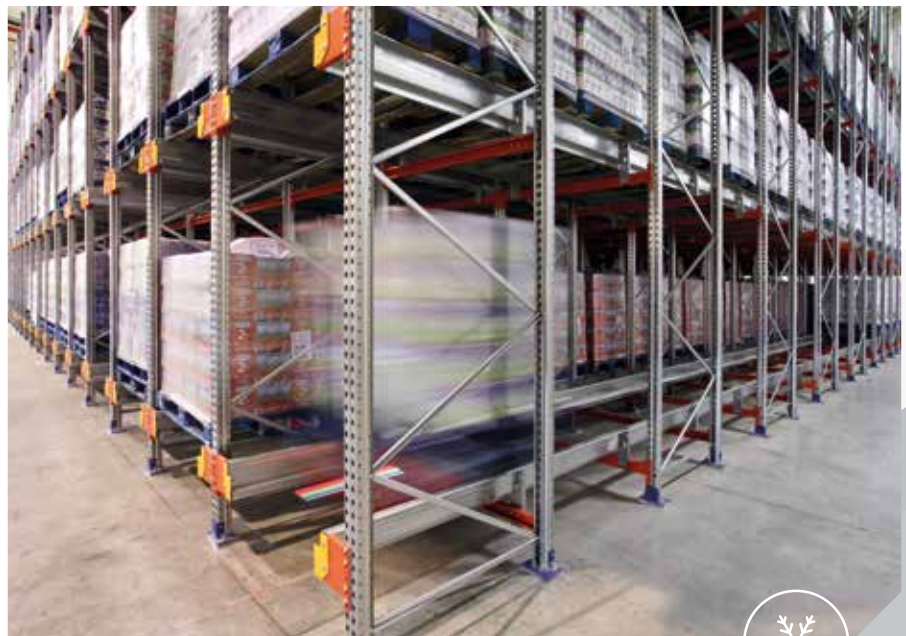
With the AR SHUTTLE system both FIFO or LIFO solutions are available. AR SHUTTLE is also suitable for cold and freeze storage up to -22°F (-30°C).

Advantages

- The AR Shuttle compact system **MAXIMIZES STORAGE CAPACITY**.
- **REDUCES PALLET LOADING AND UNLOADING TIMES**, as AR Shuttle system moves pallets to their right position automatically.
- **ENERGY-SAVING** due to the reduced space to refrigerate.
- Enables both **FIFO** and **LIFO LOGISTICS MANAGEMENT**.
- **HIGHER SAFETY LEVEL** for all staff members during the manipulation works of the palletized goods.
- **REMOTE CONTROL** for up to 4 satellite shuttles with one and the same radio control. Includes a command for counting pallets and a screen for displaying maintenance messages.
- **BEST SOLUTION FOR COLD STORAGE** for its reduced space and fast loading and unloading times.
- **IMPROVES REFERENCE MANAGEMENT** in compact solutions.
- The **UPRIGHTS AND FRAMES** are **GALVANIZED** and therefore have higher resistance to corrosion than in a painted or coated finishing.

How does it work?

Designed for high-turnover storage, AR SHUTTLE enables automatically loading and unloading pallets by using a remote controlled system. Unit loads are either placed on the first available location until the rack is fully loaded or retrieved from their storage location and moved to the front ready to be picked by a forklift truck.



AR LIVE STORAGE

PALLET FLOW RACKING & PUSH-BACK RACKING

The AR LIVE STORAGE is a FIFO pallet racking system made by a compact structure with a slight slope and roller conveyors that allow palletized goods to roll over.

Loaded pallets are loaded at one end and move securely along the roller conveyors at a controlled speed, moved only by the gravity, until they reach the other end, ready to be unloaded.

The movement of the palletized goods in the gravity racking systems AR Live Storage is fully secured since the system is equipped with several devices for control and protection.



Advantages

- Reduced loading and unloading times.
- Increased storage capacity in a warehouse with selective pallet racking.
- Enabling of loading and unloading aisles reduces risks for the operator.
- Pallet Flow Racking system can be automated.
- Optimal use of space. High-density storage system, so more storage capacity in the same space.
- Reduced operating costs thanks to excellent use of space.
- Ideal product rotation: Perfect for FIFO systems (first-in, first-out).
- Fast, simple removal. Ideal positioning of the products reduces load loading and unloading times.
- No traffic interference. The forklift trucks insert and remove load units in different aisles since the loading and unloading aisles are separate.
- Adaptable to any space, and to any weight or size of the merchandise to be stored.
- Extremely safe. The Pallet Flow Racking structure is fitted with a control and braking system to minimize any risks: brake rollers, pallet centering or retainer system, and pallet stops.
- Improved stock control since each loading aisle has a single product reference.
- Dynamic pallet system is compatible with other automatic and conventional storage systems.
- Allows you to continue to use the same type of forklift trucks used in selective pallet racking warehouses.

AUTOMATED COLD STORAGE SOLUTIONS

Together with the solutions already shown, AR Racking offers a comprehensive service in the installation of storage systems to support automated equipment that adapt to cold storage or freezing room needs.

The main automated storage systems for which AR Racking installs its metal structures are:

Rack supported buildings, automated warehouses and mini-load system.

RACK SUPPORTED BUILDING



In clad-rack buildings, the racking forms part of the structure of the building.

The racking supports the load of the stored goods and the outer enclosures, and is the most appropriate solution for storage at great height.

The system adapts perfectly to warehouses that require working in cold conditions or in freezing rooms.

AUTOMATED WAREHOUSE



The automatic systems with stacker crane for pallets are automatic storage systems that use robotic equipment for the handling of loads.

It is a high density, quick and reliable system.

The system consists of small AS/RS machines (satellite shuttles) which, simultaneously and autonomously, load the goods controlled by warehouse management software.

MINI-LOAD SYSTEM



The miniload system uses robotic equipment for the direct handling of plastic boxes or trays.

It is a high density system and therefore ideal for cold storage, due to fewer work aisles and maximum use of the surface area and area at height.

It is the optimum solution to implement with semi-automated or fully robotised order processing logistics solutions.



WHY CHOOSE AR RACKING?

At AR Racking we are committed to offering high-quality assured storage solutions to our customers, providing a comprehensive service throughout the whole process with the main objective of achieving the full satisfaction of our customers by solving their storage needs.

All this is possible thanks to our automated and state-of-the-art facilities, and highly qualified personnel with extensive experience in the sector.



Quality

- 100% Automated production centre
- Corrosion-resistant galvanized product
- Traceability system



Guarantee

- 5 Year guarantee in AR Racking storage systems
- Quality assurance guaranteed by US and European standards
- Grupo Arania, with more than 80 years of experience



Comprehensive service

- Planning, design, manufacturing and installation
- Specialized international customer service
- Efficient delivery dates



Customer satisfaction

- Customers from more than 60 countries
- More than 100 satisfied international distributors
- Control of and improved customer satisfaction





- **Welding certificate: UNE EN ISO 3834-2: 2006**
- **Galvanized resistance certificate: UNE-EN ISO 14713-1**
- **Fire performance of galvanized product: EN 13501-1: 2007**





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