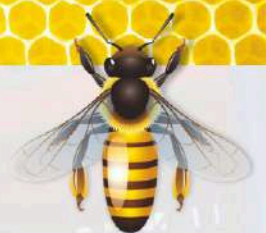




EFFISTACK
INDIA PVT LTD



Committed to Efficient Storage





Effistack India Pvt. Ltd (EIPL) is a leading manufacturer of Industrial Storage Systems and Industrial Automation specialized in providing innovative and customized solutions for Storage management. Empowered by highly skilled Engineers and work force, we provide the most cost-efficient product. Our comprehensive portfolio of products is tailored to suit our client's individual requirement and provides exceptional value and efficiency.

EIPL continues to innovate, refine, and create product & solutions while maintaining an emphasis on Quality, safety, and Cost Effectiveness. Everything we do, every day is rooted in our Core Values:

EIPL Core Values:

- Quality – First and foremost.
- Integrity – We will be trustworthy, honest, genuine and loyal in every action.
- Innovation – Defines our past, propels us into the future and provides us with a strong market position through better technology and processes.





Selective Picking Pallet Racks

Selective Picking Pallet Racks are the simplest and basic racks. They are a versatile choice providing 100% selectivity to every load such that you can access every pallet. However, they require numerous aisles and result in lower storage density than some other alternatives. For a faster moving product and the best access, Selective Racks are the system of choice.

Basic Components

Frame: Formed by two uprights joined with horizontal ties and diagonal ties secured together with fasteners. Bottom support bolted to the base securing the frame to the ground by means of the anchor bolts.

Upright: Wide range of Cold formed section. They come on two types of section i.e. 12 fold or 4 fold, from 80mm to 120mm width and thickness of 1.6, 2, 2.5 or 3 mm. A wide range permits economical selection considering required variable such as load capacity and height. Standard load capacity is upto 20 Tons per upright frame and standard height is upto 12 meters. Special frames with more load capacity and length can be provided for specific purpose. Equally spaced slots are at 50 mm/100 mm pitch on upright, making the system flexible in terms of beam position.

Beam: Beams are direct load carrying horizontal members. Brackets welded to the ends of the beam hook it onto the uprights. It comes in different profile depending upon the application, viz. Double 'C' box beams and Lipped 'C' box beams for pallets, Sigma profile beams for loose component shelving and Step box beams for pallets as well shelving. Standard length available is up to 3 meters and standard load capacity is up to 3 tons per level. Capacity and length exceeding the above can be provided in special cases.

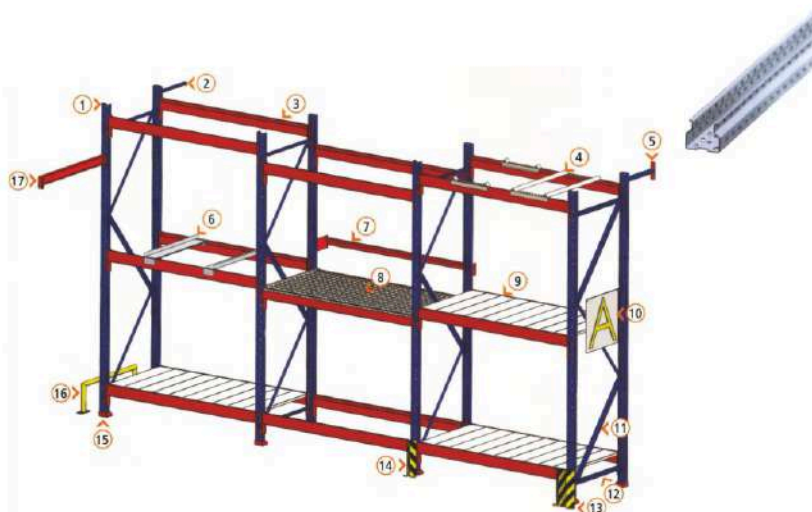
Row Spacers: Used to connect back-to-back frames

Wall Ties : Used to connect single row of racks to a wall

Block Ties : Used to connect row of racks across aisles



1 Upright Frame	4 Drum Carrier Frame	7 Back Stopper	10 Signage	13 Corner Column Guard	16 Frame Protector
2 Row Spacer	5 Wall Tie	8 Gratings	11 Cross Tie	14 Middle Column Guard	17 Block Tie
3 Beam	6 Pallet Support	9 Shelving Panels	12 Horizontal Tie	15 Bottom Support	



Accessories

Shelving Panels: Drop over steel panels used with Sigma section beams or Step box beams for carton, bin or loose material storage. Cold formed from galvanized sheets can also be provided with painting powder coating

Gratings: Application same as shelving panels but used for heavy load and where water sprinkler systems are installed, also used with step box beams

Pallet Support: Needed where various depth of pallets are to be used. Simply kept on box or Step box beams

Back Stopper: To prevent pallets from overturning

Column Guard: To protect corner uprights against fork lift impact

Frame Protector: To protect the end frame against fork lift impact



Shuttle Racking System

Maintain maximum selectivity and increase your operational efficiency with the Radio shuttle pallet racking system. Radio shuttle is a semi-automated storage and retrieval system that allows for a maximum use of warehouse space. Easily managed with a remote control, the Radio shuttle pallet shuttle is loaded into storage loads and executes orders to load or unload pallets into a lane. The lanes are fed pallets by lift trucks such as reach trucks or sit-down forklifts.

ADVANTAGES

- Compact storage
- Completed utilization of space almost 2 times as conventional racking
- Both FIFO and LIFO Operations.

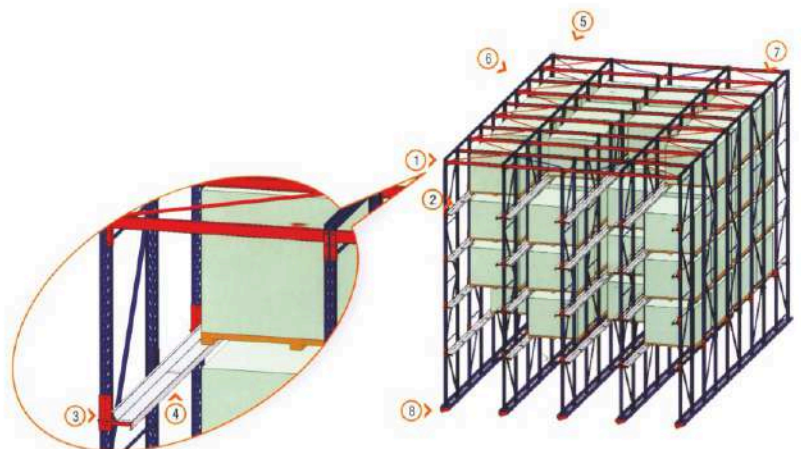
Drive-In Pallet Racks

Drive-in & Drive-through Racks offer the ability to store a large amount of similar loads in a smaller area. Selectivity is sacrificed but the storage density is outstanding.

Drive-in racking can store up to 75% more pallets in the same space than selective racking - depending on the application. It requires fewer aisles and has better cubic storage. Drive-in Racks allow a lift truck to enter the rack from one side to pick up or pull out pallets. This is done because pallets can slide backwards on a continuous rail. Forklifts drive into the rack to access pallets 2 or more deep. You are limited in the depth of storage for a particular bay by the size of your facility.

Drive-in: This is a Last-In, First-Out arrangement

Drive-through: This is a First-In, First-Out arrangement



- | | | |
|-------------------|-----------------|----------------|
| 1 Upright Frame | 4 Joining Piece | 7 Top Bracings |
| 2 Pallet Runner | 5 Beams | 8 Guide Rails |
| 3 Runner Brackets | 6 Top Runners | |



Mother Child Shuttle Racking System

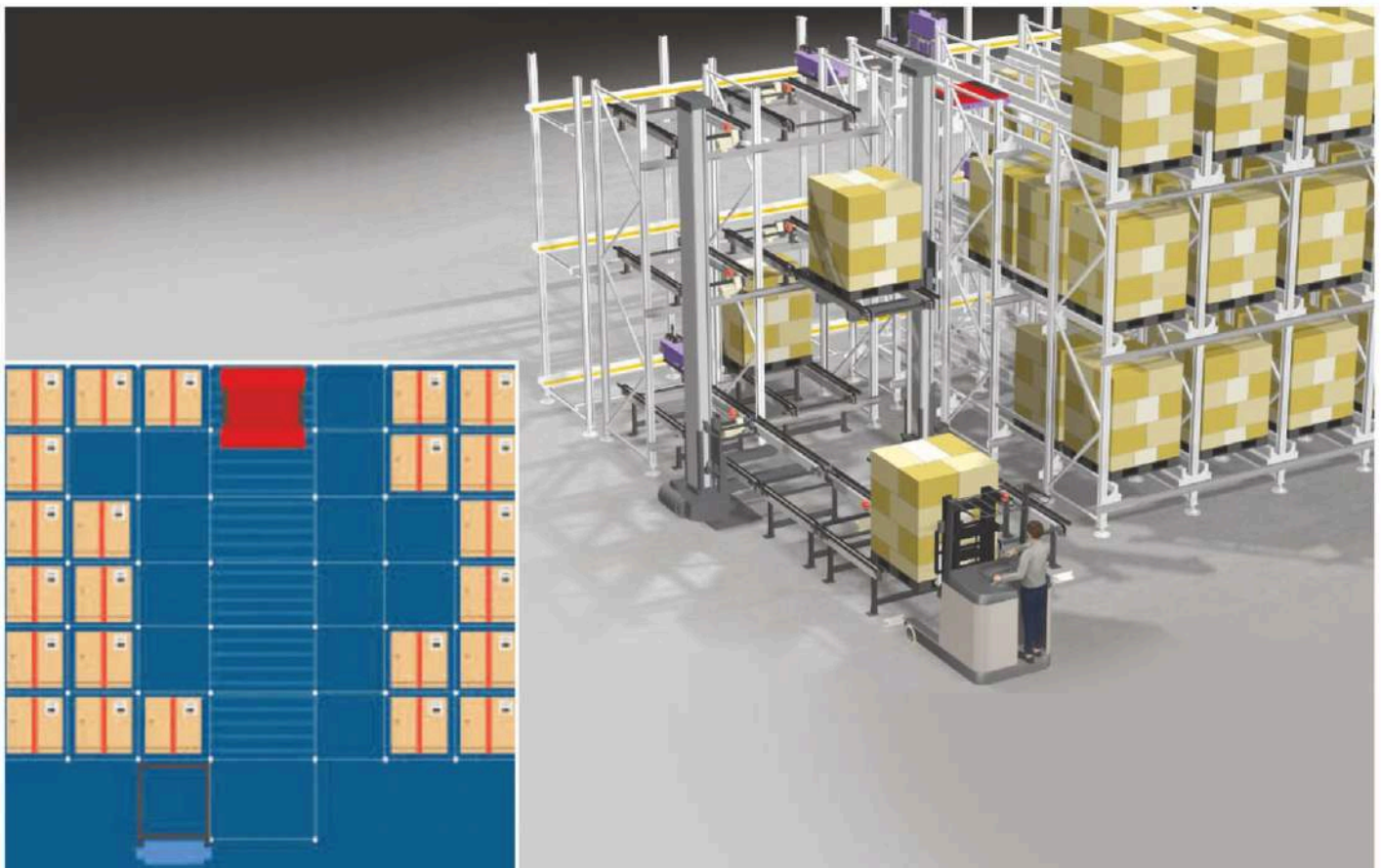
Mother-child shuttle system also known as shuttle-based system is a multi deep ASRS solution. The Mother carries baby along the rails perpendicular to the aisles on each floor. This technology utilizes the capacity of the warehouses in cubic feet over the earlier means where it used to utilize its capacity in square feet. It is designed to optimize the space used within the warehouses in order to obtain a higher level of productivity and efficiency. This system integrates the automated hardware with the software for the accurate picking and replenishment process. This results in a reduction of inventory level and material handling inconveniences while increasing the productivity and accuracy of the warehouse as compared to the manual storage systems.

FEATURES AND BENEFITS:

With world-class hardware integrated with intelligent software, Asterope is an impressive Industry 4.0 smart storage suitable for multi-deep storage and provides high throughput & facilitates storage up to 10 pallets per square meter. You can avail the benefits mentioned below by adopting Mother-child shuttle system in your warehouse:

- Provides intelligent tracking and traceability
- Flexibility for peak periods and seasonal products
- Order fulfilment time reduces
- Order accuracy and efficiency is improved
- Operating cost reduces and pilferages are eliminated
- Labor dependency decreases
- Consistent operation in the ambient, freezer, or chilled environments

With increase in productivity, high-density storage, complete inventory control, and real-time load tracking, Asterope in your warehouse will gain you a competitive edge.





Mobile Compactor

Compactors offer a secured, durable and dustfree storage solution for storing small material in warehouses and documents in offices. Compactors are enclosed from all sides and are centrally lockable thus ensuring security of items and documents. They are made using high quality material and is powdercoated to last long.

Generally these racks are equipped with chain & sprocket mechanism and are operated manually by an ergonomically placed wheel provided at the front of each unit. They are mounted on base units which facilitate smooth, low-noise, jerkfree movement in parallel direction to each other. In case of heavy loads, an option of electrically operated compactor is also available.

Mobile Racking Systems

Mobile pallet racking is the best solution for storing pallets with maximum selectivity along with high storage density. It saves warehouse space by reducing the amount of room dedicated to working aisles. Mobile racking comprises electrically - driven trolleys on which the pallet racks are mounted. These move sideways closing up the space, normally used for aisles. The closed aisles are reached by moving all the racks sideways.

The trolleys are steel construction. They incorporate wheels and drive assemblies. The wheels are guided on rails and are fitted with self-aligned ball bearings. Wheels and bearings are designed for high loads and durability. Every trolley units is driven by reduction geared motor which is linked to wheels. All motors are electrically connected and synchronized so that equal motion is achieved throughout the system.

Racks can be operated by pressing a button on the operator panel at the front of each rack. High-end systems are managed by PLC. The PLC activates the electric motors on the trolleys causing them to open up the correct aisles. Sophisticated remote controls and mechanism are also available for computerized management.

Safety Feature - Power Mobile Racking System

- Motors are driven through frequently based drive (soft start & soft Stop) to protect goods in racks.
- Each trolley is fitted with foot level safety sensors on both sides to prevent any accidental trapping of person.
- Other sensors are provided to detect entry of equipment or person in particular aisle.
- Emergency stop which is provided on all units.
- High end automated systems are with synchronized mechanism to ensure uniform movement of all units thus preventing collision.

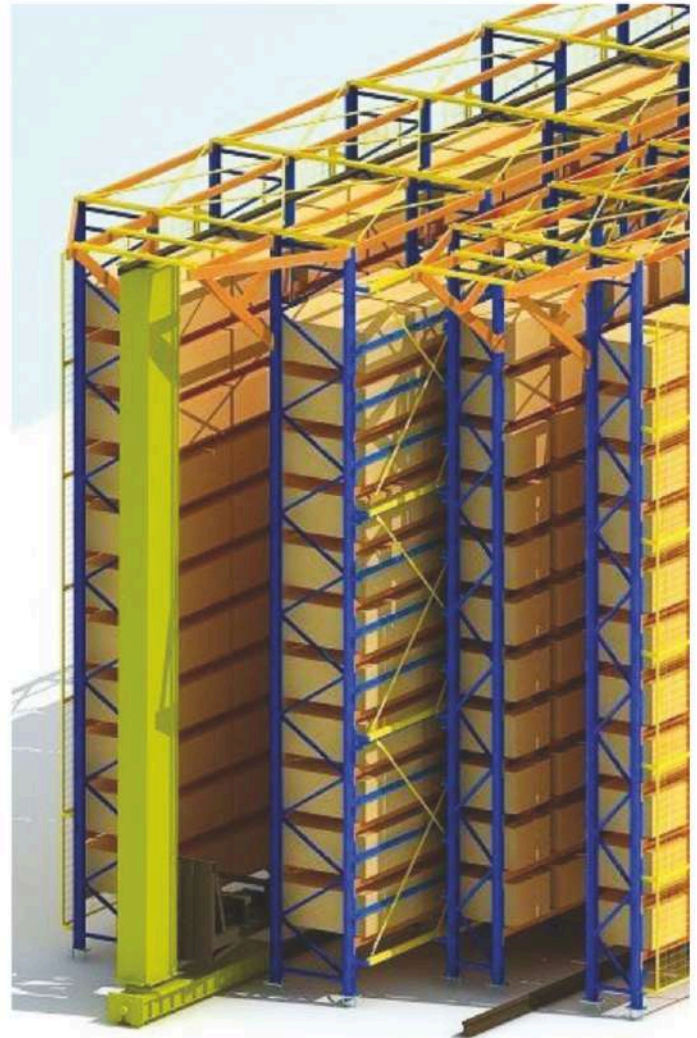


Automated Storage & Retrieval System (ASRS)

An Automated Storage and Retrieval System also known as AS/RS is a combination of equipment and computer-controlled systems that handle, store and retrieve materials with precision, accuracy and speed under a defined degree of automation. Systems vary from relatively simple, manually controlled orderpicking machines operating in small storage structures to extremely large, computer-controlled storage/retrieval systems that are totally integrated into a manufacturing and distribution process.

Within an AS/RS environment one would find one or more of the following technologies: Horizontal Carousels, Vertical Carousels, Vertical Lift Modules, and/or Fixed Aisle (F/A) Storage and Retrieval Systems, the latter utilizing special storage and retrieval machines to do the work needed to insert, extract and deliver loads to designated input/output locations within the aisles being served. It effectively and reliably handles raw materials, work-in-process inventories and finished goods of all kinds, making it possible to totally integrate material handling storage, into the total process being served.

The single Mast stacker is one of the main components of the automated warehouse, dedicated to the elevated warehouse. It is composed of a rectangular frame consisting of struts, upper beams and lower beams. It is suitable for lifting up to 2 tons to a height up to 16 meters. The stacker runs on the aisle space between the shelves and is mainly used to carry unit cargo loaded on the pallet or in the container. The double mast



stacker is another crucial component of the automated warehouse, which is different from the single column stacker in terms of capacity. It consists of a rectangular frame composed of two masts, the upper beam and the lower beam and the structural rigidity is better than the single column. It is applicable to a variety of lifting height and weight, much higher than single mast stacker.

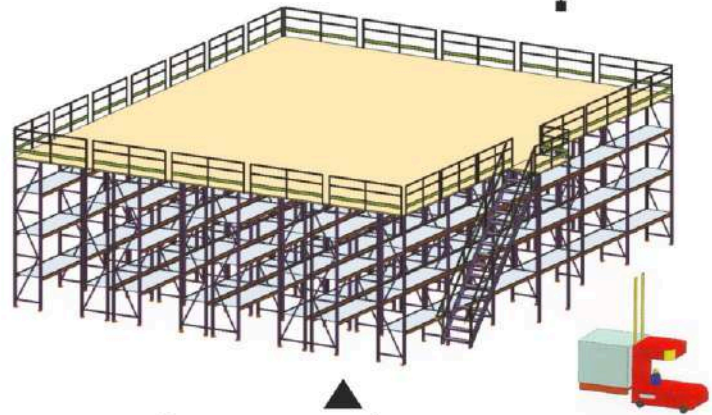
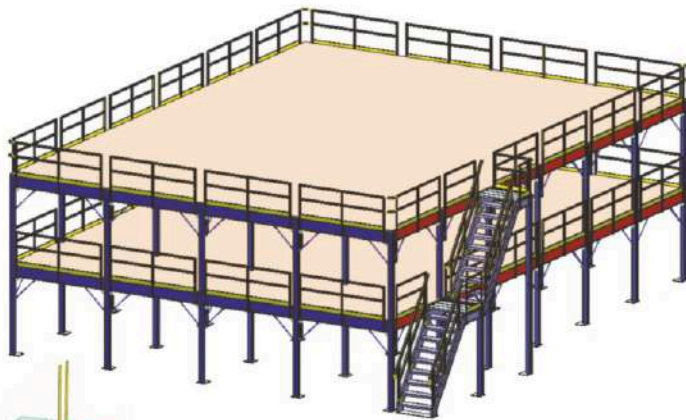
The double column stacker runs in the aisle space between the shelves and is mainly used to carry the unit cargo loaded on the pallet or in the container.

Automated storage and retrieval systems provide a variety of benefits:

- Increases throughput capabilities
- Increases accuracy levels to 99.99%+
- Increases ergonomics by delivering items to the operator at a convenient height, eliminating time lost to walking, searching, lifting, bending and twisting activities
- Provides highest possible storage density
- Saves up to 85%+ of otherwise wasted floor space
- Increases labor productivity up to 85%
- Enhances product security
- Provides real-time inventory control

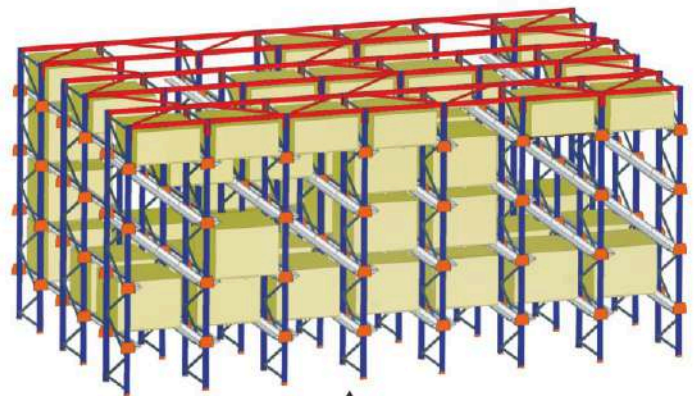
Complete Range Of Storage Systems

Multi-Tier Mezzanine

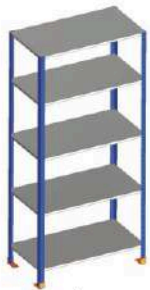


Rack Supported Mezzanine

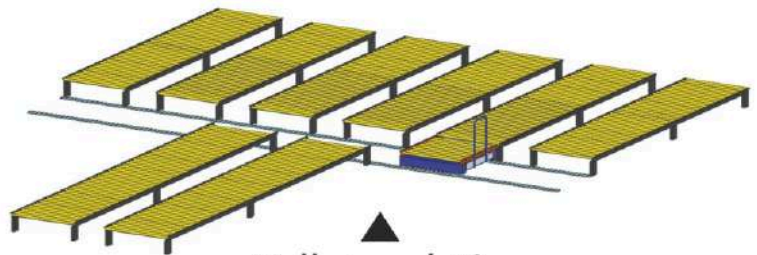
Pallet Flow Racks



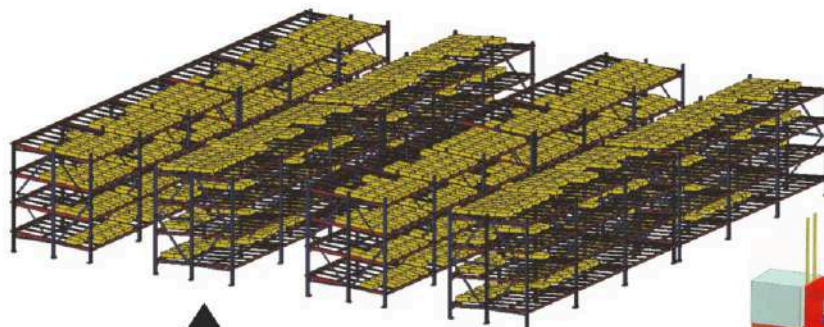
Drive-in Racks



Slotted Angle Rack



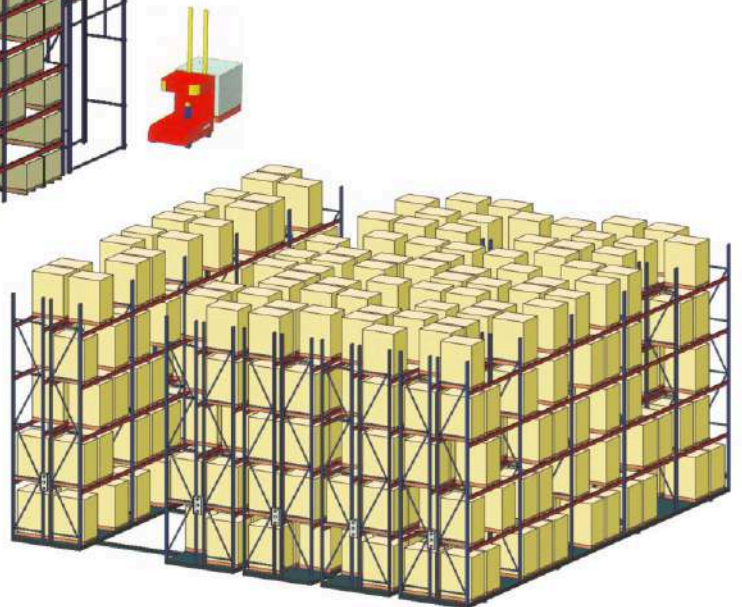
Pallet and Bin
Conveying System



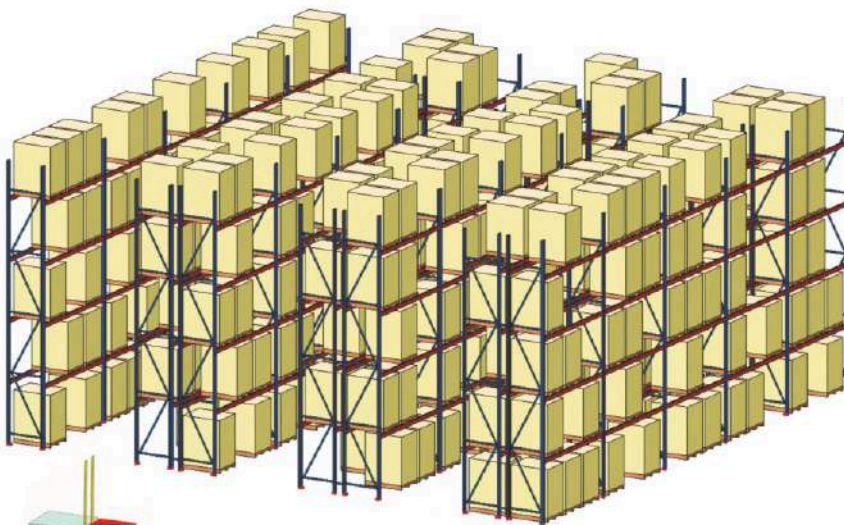
Carton Flow Rack



▲
Multi-Tier Racking System

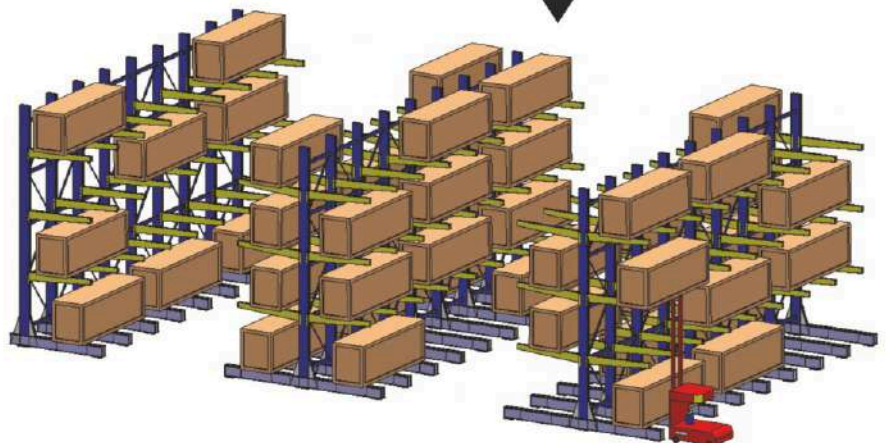


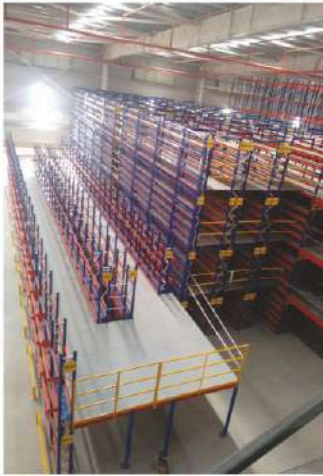
▲
Mobile Racking System



▲
Heavy Duty
Racking System

▼
Cantilever Racking Systems





Multi-Tier Mezzanine

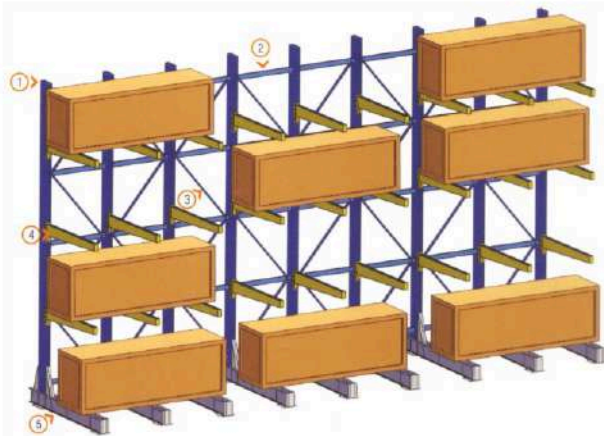
Multi-Tier shelving and racking is mainly used for storage and order picking of non-palletized goods, bins, cartons or other storage units containing small parts and components and for bulk storage. The modular system accepts numerous accessories which can also be added later on. Designed to suit diverse requirements, these accessories allow storing of almost all goods.

Possible variants are: Multi-Tier Shelving Racks, Multi-Tier Flow Racks, Single or Multi-Tier Racks at Ground and Plain Mezzanine at the top for office or Multi-Tier Plain Mezzanine. Multi-Tier shelving and racking provides good space utilization which directly results in multiplication of the available floor space and reduced order processing times as additional level allow creating extra order picking aisles, storage, manufacturing and area for assembly or office. Stairs are integral part of the system and material lift can be used as an option to connect the walkways on different tiers. Racks can be provided with plain shelving or flow shelving for FIFO system.

Slotted Angle / Multi-Tier Racking System

Slotted Angle Multi-tier storage systems are popularly used for the storage and order picking of non-palletized goods, bins, cartons, and other small sized units that need to be stored in bulk. The vertical space and storage volume of a premise is well utilized in this system. It is even possible to utilize the full height of the storage house up to the ceiling. This type of storage system is very popular in warehouses, engineering store, document storage and assembly units. The number of floor is determined by the height of the shelves, bearing in mind that the recommended height considering average human reach varies from 2.20 to 3.0 m.





Cantilever Racking

The ideal solution for the storage of oversized goods or bulky items is Cantilever Racking. The list of items to be stored includes plastic tubing, steel pipes, profiles and wooden planks. Cantilever racking can be manufactured for single or double-faced usage. Adjustable Cantilever arms allow easy adjustment to different kinds of storage height and loads.

- 1 Pillar
- 2 Horizontal Bracings
- 3 Cross Bracings
- 4 Arm
- 5 Base

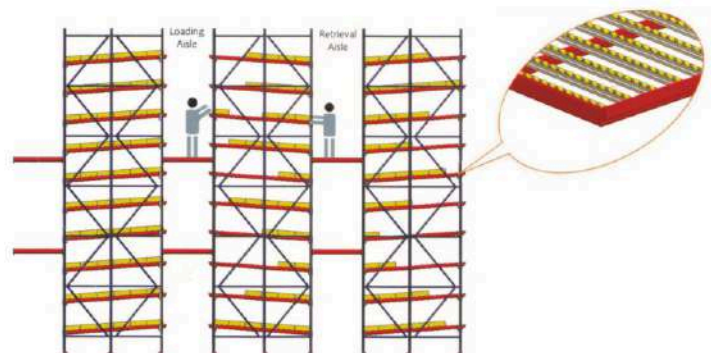
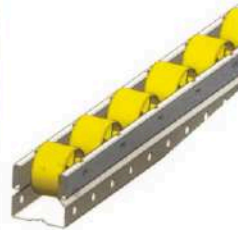


Carton Flow Racks / Multi-Tier Flow Racking System

These systems are gravity-driven and perfect for applications where numerous variety items need to be picked manually. Stock presents on a First-In/First-Out basis which ensures inventory rotation. Separating the loading aisle from the retrieval aisle allows pickers to operate more efficiently.

Carton Flow, with its tilted shelves which improve visibility and order accuracy is the perfect answer for split case or piece picking. Carton Flow can be integrated with conveyors and other storage solutions to create functional pick modules and warehouse product picking efficiency.

It can also be used as composite racks for pallet storage at top levels and flow racks at bottom levels. But the best space utilization is through Multi-level Systems. Carton Flow can dramatically improve warehouse efficiency by organizing product and rotating stock automatically. Long, straight, dedicated lanes maintain product organization and keep labor costs down. The simplicity of gravity driven systems requires less capital than maintenance-prone automated systems. In addition to this, tracks can be added to the existing pallet rack with minimal effort to convert it to Carton Flow.



Basic Components

- Frame & Upright: Same as in Selective Picking Pallet Racks
- Frame: Sturdy steel welded/bolted frame made from formed section with a provision of mounting roller tracks adjustable @25 mm. Slope of frame can be adjusted from 0° to 15° with a gradient of 1/2°. Other features are in-built front stopper and flat front and back surface for labeling.
- Roller Track: Made from encapsulated 12 bend section steel profiles having a provision for rollers either @55 mm or @45 mm. Rollers are snap-fitted to self-locking slots provided in tracks.
- Rollers: Based on the need and application rollers of different diameters with different material and color, either collared or plain are available. These rollers possess a self-lubricating property and rotate on hardened and ground axles made from high quality steel.

From concept to completion, we make sure that you get the Pre-Engineered Building that meets your specific requirements. With Effistack Metal Building, your operation is guaranteed a structural solution that can be designed around your needs and is built to stand the test of time.

THE EFFISTACK METAL BUILDING ADVANTAGE INCLUDES:

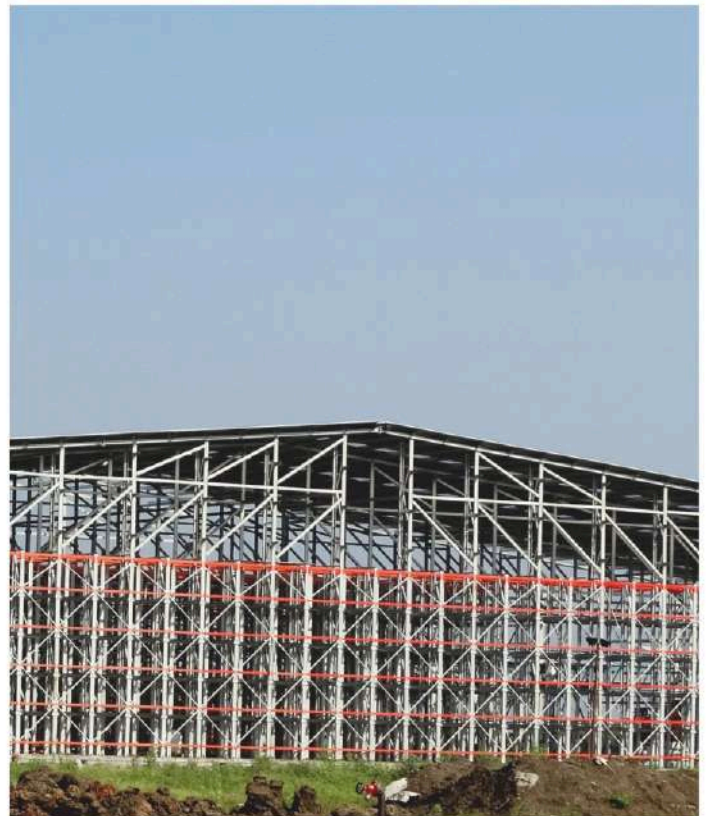
- Endless applications
- Ultimate strength
- Steel cladding
- Build to any size
- Availability of Custom designs
- Solution under one roof – from metal building to Material Handling and storage solutions.



Rack Supported Warehouse (RSW)

A rack supported structure is comprised of storage systems that act as the structural support for the walls and ceiling of the facility while still providing storage. Rack-supported buildings, in contrast, utilize racking systems to provide the structural support for the building. Instead of a structural steel framework, the racking system itself provides the basic structural components to support the roof and walls.

Rack supported warehouses can be implemented with drivein rack, shuttle rack, push back rack, selective rack storage systems.

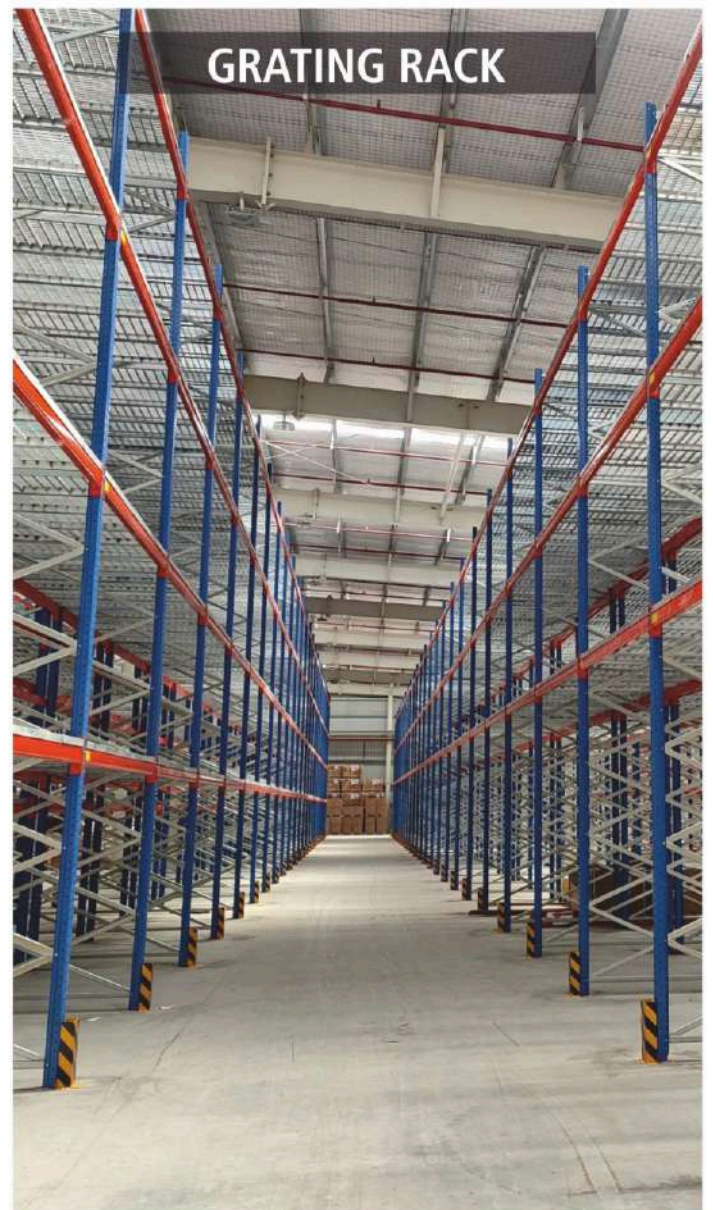




ROLL STORAGE



PUSH-BACK RACK



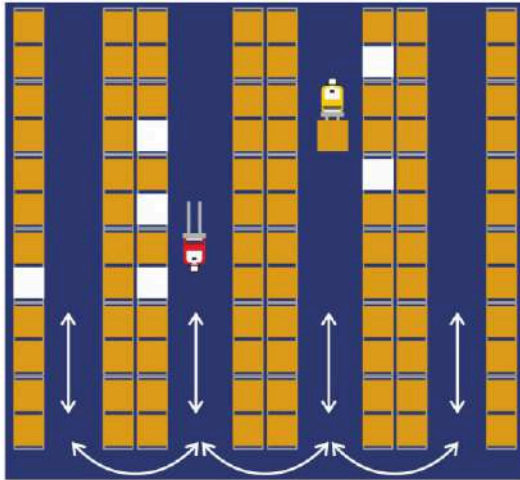
GRATING RACK



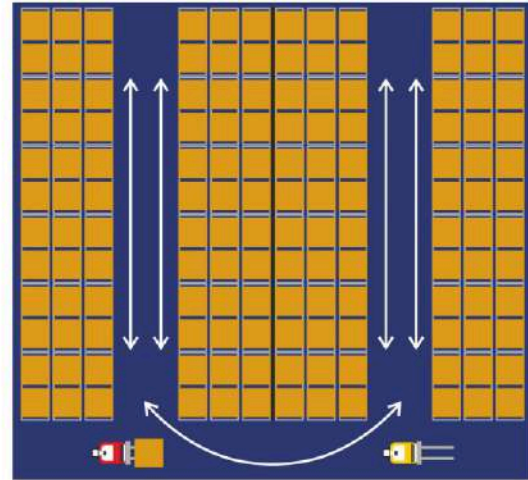
STEEL CAGE

Comparison of Pallet Storage System

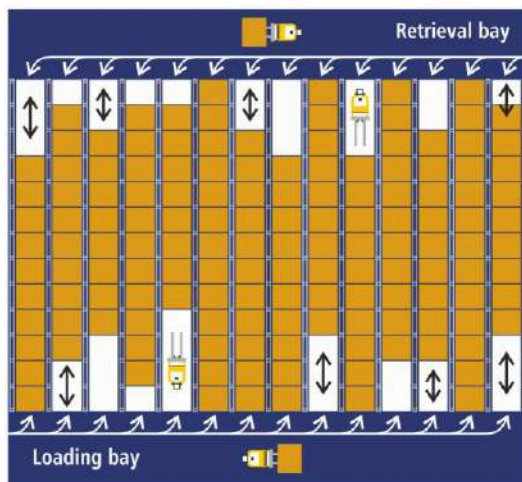
Selective Pallet Racks



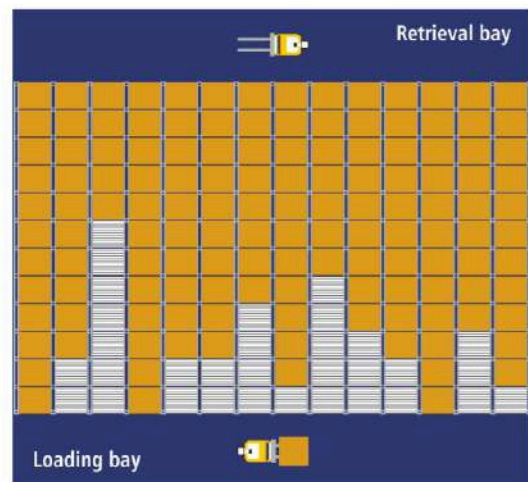
Push Back Pallet Racks



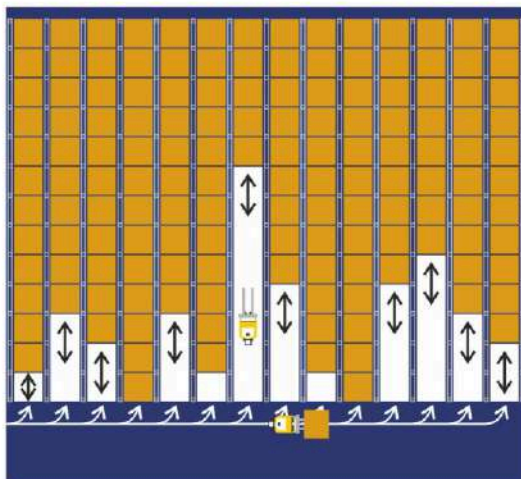
Drive Through



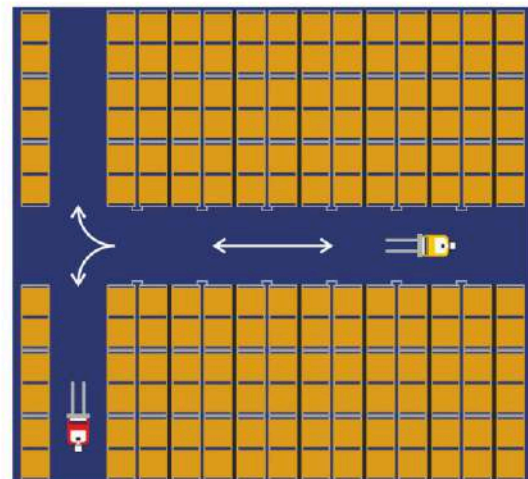
Pallet Flow



Drive in



Compactor



* Due to continual development, specifications are subjected to change without prior notice.

Partner of Choice



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