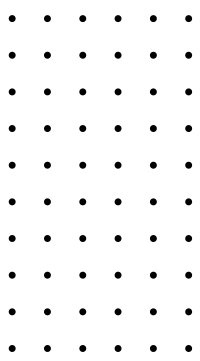
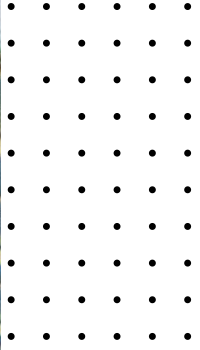




**REFRO - TECH**

لحلول المستودعات والسوبر ماركت  
Warehousing & Supermarket Solutions

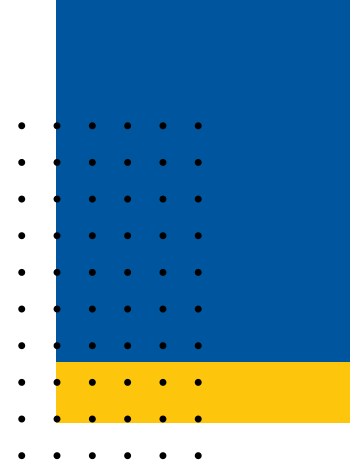


# STORAGE SOLUTIONS



[sales@refro-tech.com](mailto:sales@refro-tech.com)

[www.refro-tech.co](http://www.refro-tech.co)



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- 01. Company Overview
- 02. Our Process
- 03. Company Values
- 04. Products and Services
- 05. Range of Products
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- 07. A Few Clients
- 08. Contact Information



REFRO - TECH



## COMPANY OVERVIEW

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### About Us

Refro-Tech is one of the leading trading company in the region of Saudi Arabia. We developed deeper and stronger working connections with our clients and suppliers in order to not only deliver prompt and dependable service, but also to consistently surpass expectations and goals. We collaborate with our partners to provide superior commercial **Cold Rooms, Super Market Complete Solutions, Docking Stations, Racking Supply and Installation and Warehousing Solutions.**



REFRO - TECH

## OUR PROCESS

---

### Mission

We work to create a more creative, safer, and trustworthy workplace culture. We fully think that "trust" is the foundation of all relationships, including the client-contractor connection, which will continue for generations as we grow through time.

### Vision

Refro-Tech envisions itself as having a results-oriented team, as well as a service-oriented top management. We want to continue developing alliances with our customers, which means that not only we will deliver a high-quality building on time and within budget, but that customers will have complete confidence and peace of mind throughout the process of working with Refro-Tech, because we take other principles into account, such as contingency planning and risk management.







REFRO - TECH

## COMPANY VALUES

At Refro-Tech, we get the work done by paying close attention to quality control, time management, and constant communication with the customer throughout the project. To guarantee complete client contentment. Maintaining a dynamic business culture based on quality, innovation, and safety ideals.





## PRODUCTS AND SERVICES

- Warehouse Racking & Shelving Solutions.
- Cold Store/Industrial Cold Stores Solutions.
- Super Market Shelving.
- Super Market Refrigeration.
- Docking Station.
- Warehouse Construction.
- Fitouts/ MEP Works.



REFRO - TECH

Godrej | STORAGE SOLUTIONS

Godrej

# SELECTIVE PALLET RACKING

Reliable-Safe-Highly customizable



Modular

Scalable

Versatile

## About Us

Godrej Storage Solutions is a part of the renowned Godrej group, a global conglomerate with businesses ranging from consumer products to aerospace engineering. We are a pioneer, visionary and market leader since last 6 decades in the field of warehouse storage systems in India. With innovation, adaptability and reliability as our core strengths, we have created more than 200 million square feet of state-of-the-art storage systems for various sectors ranging from E-commerce to 3PL.

Our culture of continuous learning coupled with decades of experience in the field of intralogistics has enabled us to design best-in-class solution to serve storage needs for applications across industry sectors.



## ABOUT PRODUCT

Our Selective Pallet Racking offers a unique quality of Selective Accessibility, effectively allowing you to store and retrieve various SKUs in a highly independent, organized and systematic manner. The system breathes life into your space, delivering 100% accessibility to each pallet. It is designed in such a way that a single pallet can be accessed without disturbing any other pallet in the system.

Selective Pallet Racking is best suited for a large variety of SKUs that demand individual traceability and handling. The high versatility that Selective Pallet Racking offers coupled with our large portfolio of accessories makes it an ideal solution for sectors as diverse as aerospace to FMCG and E-commerce. Our constant innovation has also enabled us to design seismic resistant tracks to withstand zone 5 seismic activity.

## APPLICATIONS

- 3PL (Third Party Logistics)
- Automobile/Auto
- Ancillaries Chemical
- Defence
- E-Commerce
- Energy/Power
- Engineering
- Food & Beverage
- Paper/Packing
- Pharmaceutical
- Railway/Port
- Textile/Apparel

## FEATURES

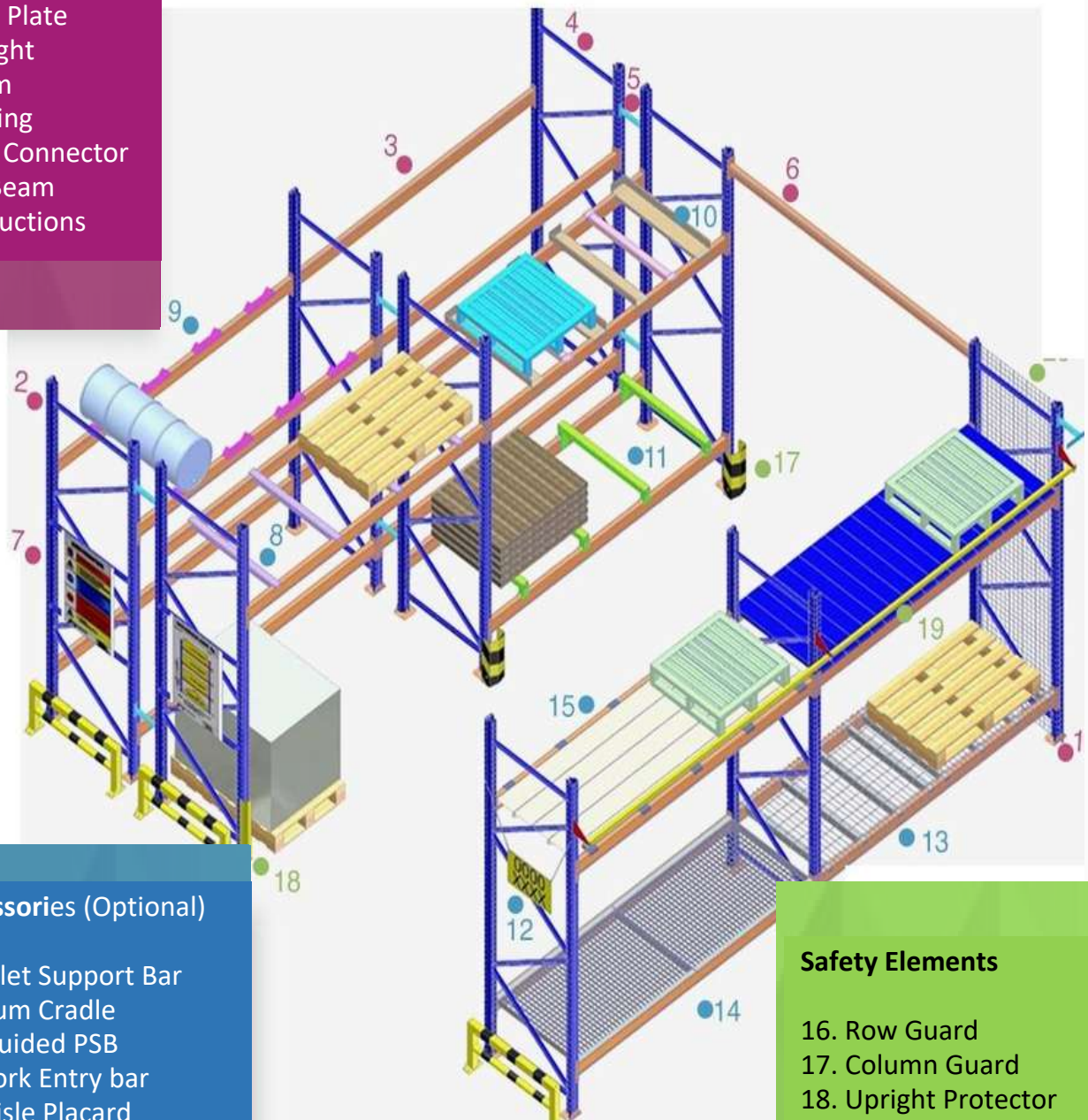
- 100% selectivity and traceability offering quick access to a large range of SKUs
- High level of reconfigurability enables ease of installation and relocation
- High adaptability to varying load size. Adjustable beam level at 50 mm to make changes as per pallet height or load
- Wide range of beams, upright sections & accessories to support various applications
- Highly compatible for horizontal and vertical expansions
- Flexibility to be configured based on the available height and layout
- High adaptability to any type of material handling systems
- Lower forklift or pallet handling costs
- Achieve high levels of stock rotation with easy and efficient stock management.
- Variable pallet sizes can be accommodated with wide range of pallet supporting accessories.



## CONFIGURATIONS

## Basic Elements

- 1 Base Plate
- 2 Upright
- 3 Beam
- 4 Bracing
- 5 Row Connector
- 6 Tie Beam
- 7 Instructions
- 8
- 9



## Accessories (Optional)

8. Pallet Support Bar
9. Drum Cradle
10. Guided PSB
11. Fork Entry bar
12. Aisle Placard
13. Mesh Decking
14. Grating Decking
15. Panel Decking

## Safety Elements

16. Row Guard
17. Column Guard
18. Upright Protector
19. Pallet Stopper
20. Mesh Cladding

- Earthquake resistant design according to country & regions
- Pallet racking suitable for wide, narrow and very narrow aisle material handling equipment. Height can be designed from 5m to 17m (Forklift to TSP operation)

# THE GODREJ ADVANTAGE



State-of-the-art, high-capacity automated manufacturing facility



Comprehensive in-house testing facility for assured quality



Safety in design – Tested Seismic racking for zone 5 and above



Global reach with strong dealer network

Your  
Reliable  
Partner

Best in Quality  
&  
Innovative Design

Quick & Safe  
Project Execution

Our solutions, perfected with decades of experience and our highly trained installation team, backed with world-class production facility enable us to provide our clients with superior storage solutions.

You are one call away from your perfect racking partner

## Godrej Storage Solutions

- ☎ 1800-419-7060
- ✉ [storage@godrej.com](mailto:storage@godrej.com)
- 🌐 <https://www.godrej.com/godrej-storage-solutions>
- 📍 No. 1, SIDCO Industrial estate, Ambattur, Chennai, Tamil Nadu -600098

## Other Solutions



Mobilstack



Mezzanine System



Boltless shelving Systems



Heavy duty shelving systems



Shuttle Pallet Racking





REFRO - TECH

Godrej

Godrej | STORAGE SOLUTIONS

# DOUBLE DEEP PALLET RACKING

Selectivity –Versatility -Palletized



Dense

Modular

Scalable

## About Us

Godrej Storage Solutions is a part of the renowned Godrej group, a global conglomerate with businesses ranging from consumer products to aerospace engineering. We are a pioneer, visionary and market leader since last 6 decades in the field of warehouse storage systems in India. With innovation, adaptability and reliability as our core strengths, we have created more than 200 million square feet of state-of-the-art storage systems for various sectors ranging from E-commerce to 3PL.

Our culture of continuous learning coupled with decades of experience in the field of intralogistics has enabled us to design best-in-class solution to serve storage needs for applications across industry sectors.

## ABOUT PRODUCT

Godrej Double Deep Pallet Racking is ideal for high density storage requirement. DDPR systems are like Selective Pallet Racking but designed with two bays of racks that can be accessed with specialized forklifts, reach trucks or other telescopic material handling equipment. Double deep system increases storage efficiency and pallet density. This system is commonly designed against a wall or back-to-back with another DDPR system, there by maximizing storage in available floor space.

## APPLICATIONS

- Automobile/Auto ancillaries
- Chemical
- Defense
- Energy/Power
- Finished Goods Storage
- F&B
- In Plant store
- Pharmaceutical
- Railway
- Textile/Apparel
- Raw Material store
- Spare Parts store

## FEATURES

- Increased storage capacity compared to Selective Pallet Racking
- Low to Medium storage system
- LIFO Pallet operation
- 50% of pallet accessibility with approximately 30-40% higher storage capacity compared to Single deep system.
- Better throughput speed
- Economical option compared to Drive-In system
- Highly compatible to horizontal and vertical expansions
- Lesser installation complexity due to hook type lip connector which allows quick fitment of beams and uprights

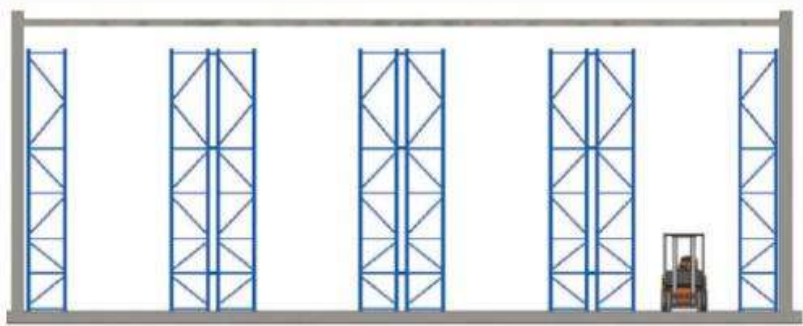


# CONFIGURATIONS

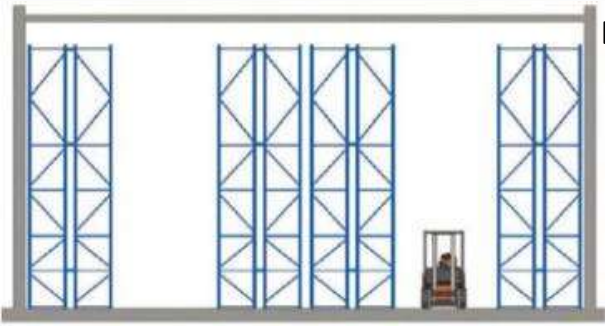


- Basic Elements**
- 1. Base Plate
  - 2. Upright
  - 3. Beam
  - 4. Bracing
  - 5. Row Connector

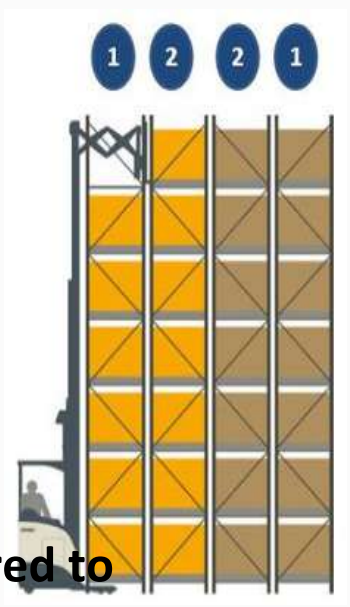
- Safety Elements**
- 6. Row Guard
  - 7. Upright Guard
- Accessories (Optional)**
- 8. Pallet Support Bar



SPR



Double Deep



Reduces aisles and increases pallet positions **by 30-40%** compared to wide aisle selective pallet racking



REFRO - TECH

Godrej | STORAGE SOLUTIONS

Godrej

# DRIVE IN PALLET RACKING

Efficient –Ergonomic -Compact



Modular

LIFO

Dense

## About Us

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Our culture of continuous learning coupled with decades of experience in the field of intralogistics has enabled us to design best-in-class solution to serve storage needs for applications across industry sectors.



## ABOUT PRODUCT

Our Drive-in system consists of interconnected blocks without aisles designed for bulk storage of palletized loads. It is a part of our dense storage offering that helps our clients to achieve maximum utilization of cubic space.

Each storage bay is only a pallet wide and designed to store pallets at multiple levels with variable depth to suit the customer needs. The structural elements are designed and manufactured in consultation with Cowen Associates, enabling safe storage and retrieval operations of palletized goods.

The forklift truck can drive into the storage bay and place or retrieve the pallets as required. Special guide rails ensure safe, fast, and accurate positioning of Forklift truck. Depending on the design, our Drive-In system can be accessed from one or both the ends, enabling the user to follow LIFO.

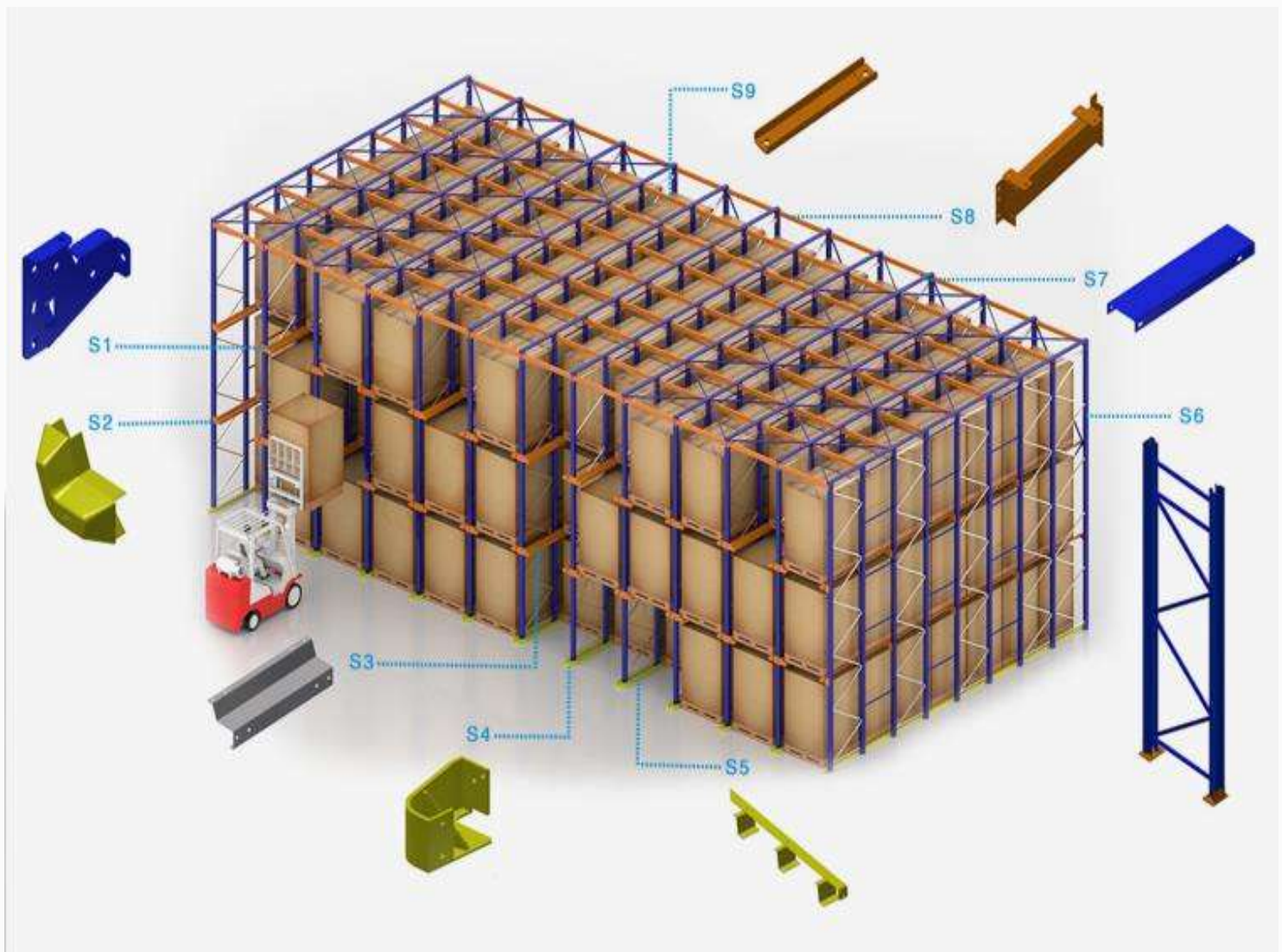
## APPLICATIONS

- FMCG
- Chemical
- Consumer
- Durable F&B
- Paint
- Apparel
- Automobile/Auto
- ancillary unit
- Energy/Power
- Engineering
- 
- 

## FEATURES

- Achieves 75% more storage space than traditional Selective Pallet racking system.
- Dense storage system ideal for cold storage applications Suitable for LIFO
- Modular system enables ease of re-configuration
- Ideal for warehouses with homogeneous or seasonal goods
- Can be handled with reach trucks or forklifts
- Achieves good stock rotation
- Wide range of safety accessories to ensure operator and material safety
- Higher grade steel with higher yield strength enables safe and sturdy storage system

## CONFIGURATIONS



## Basic Elements

**S1 Support Brackets**  
**S2 Entry Guide**  
**S3 Pallet rail**  
**S6 Frame Assembly**  
**S7 Top Bracing Channel**  
**S8 Top Stability Beam**  
**S9 Bracing**

## Accessories (Optional)

**S4 Entry Guide rail**  
**S5 Guide rail**



# THE GODREJ ADVANTAGE



State-of-the-art, high-capacity automated manufacturing facility



Comprehensive in-house testing facility for assured quality



Safety in design – Tested Seismic racking for zone 5 and above



Global reach with strong dealer network

Your  
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## Other Solutions



Mobistack



Mezzanine floor



Heavy duty shelving systems



Boltless Shelving systems



Selective Pallet Racking



Shuttle Pallet Racking



## About the product

Godrej Shuttle Pallet Racking, a product of international collaboration. Godrej Storage Solutions is partnered with AutoMHA, Italy. AUTOMHA, an Italian company, leader since 1980s in the production of automatic warehouse and handling systems. Godrej Shuttle Pallet Racking is a semi-automated, high-density pallet storage system with reduced handling times and increased storage capacity in depth. The system uses radio shuttles that independently moves with the rack to load and unload goods.

The operator can control the radio shuttles via remote control and perform all operations. It is a cost-effective and time-saving storage system ideal for dense/bulk material storage and for temperature-controlled storage environment up to -30°C.

Our constant innovation has enabled us to design seismic-resistant racks to withstand zone 5 seismic activity. The Shuttle Pallet Racking with its high throughput performance during loading and unloading function, collision-free storage and retrieval of pallets and optimum space utilisation creates a perfect storage solution.

## APPLICATIONS

- Beverages
- Chemicals
- Consumer Durables
- F & B
- FMCG
- Paints

## RADIO SHUTTLE

- Operation : Remote control
- Remote : Radio frequency
- Std. carry load : 1500 kg
- Speed on load : 35 m/minute
- Speed w/o load: 70 m/minute
- Battery type : Li-on
- Battery capacity : 20 Ah
- Battery Voltage: 48V
- Battery capability : 5 hours

## FEATURES

- ♦ High-density storage system with FIFO or LIFO material access.
- ♦ Battery powered radio shuttle to ensure safe movement of materials in and out of deep storage tunnels.
- ♦ Radio Shuttle controlled by a wireless remote control.
- ♦ Each level can be accessed independently hence each level can have different SKUS
- ♦ Automatically pallet picking and retrieval.
- ♦ All vacant positions are available for storage, no honey combing effect.
- ♦ High throughput through automated shuttle movement
- ♦ Less damage to racking system and more safety to the warehouse operators.
- ♦ Autosat is solely controlled by its radio transmitter. Every single function is regulated by individual commands such as lift, move a pallet and unload.
- ♦ Autosat rearranges automatically the rack utilizing the places available. This function is for mode FIFO.





REFRO - TECH

# SHUTTLE PALLET RACKING

Remote Handle – Semi-Automated – Collision Free



Safe  
Sustainable  
High Density

## About Us

Godrej Storage Solutions is a part of the renowned Godrej group, a global conglomerate with businesses ranging from consumer products to aerospace engineering. We are a pioneer, visionary and market leader since last 6 decades in the field of warehousing storage systems in India. With innovation, adaptability and reliability as our core strength, we have created more than 200 million square feet of state-of-the-art storage systems for various sectors ranging from E-commerce to 3PL since the beginning of this century.

Our culture of continuous learning coupled with decades of experience in the field of intralogistics has enabled us to design best-in-class solution to serve all storage needs.



## About the product

Godrej Shuttle Pallet Racking, a product of international collaboration. Godrej Storage Solutions is partnered with AutoMHA, Italy. AUTOMHA, an Italian company, leader since 1980s in the production of automatic warehouse and handling systems. Godrej Shuttle Pallet Racking is a semi-automated, high-density pallet storage system with reduced handling times and increased storage capacity in depth. The system uses radio shuttles that independently moves with the rack to load and unload goods.

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## APPLICATIONS

- Beverages
- Chemicals
- Consumer Durables
- F & B
- FMCG
- Paints

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REFRO - TECH

# CONFIGURATION

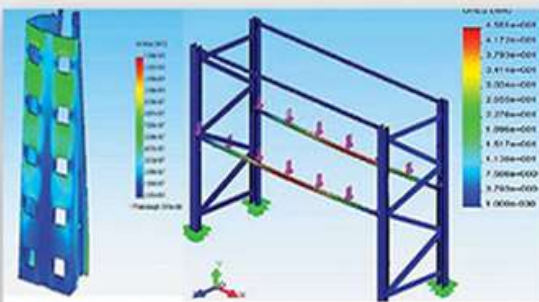


### Basic Elements

- S1 Radio Shuttle
- S2 Pallet Rail
- S3 Mid Support
- S4 Entry Support
- S5 Pallet Guide
- S6 Beam Assembly
- S7 Frame Assembly
- S8 Bracing
- S9 Base Plate

### Accessories

- Label Holder
- Safety Precaution Notice



Our accumulated knowledge coupled with cutting edge design tools help us design and analyse each component ensuring reliability



Well equipped and dedicated in-house lab enables us to conduct experiments and perform validation to comply with all global standards



## About AUTOSAT

AUTOSAT is the semi-automated shuttle created and designed by AUTOMHA for intense multi-depth pallet storage. The satellite operates in traditional drive-in lanes and guarantees the highest levels of efficiency in situations requiring repeated filling/emptying of shelves. The satellite is equipped with a special removable Lithium battery and is controlled by a simple multifunction radio controller with a multi-lingual LED display. By moving autonomously within the lanes, AUTOSAT can be easily moved between various levels and shelves by a standard fork-lift truck as it picks, stows and re-orders the pallets in the storage lanes according to FIFO (first in - first out) or LIFO (last in - last out) mode. Warehouses equipped with AUTOSAT technology can be managed by the special LOG software, which manages and processes data regarding the inbound and outbound handling of Loading Units in manual or semiautomated warehouses.

## FUNCTIONS

**STORAGE:** The AUTOSAT Satellite lifts the pallet and carries it to the first free position within the storage lane. Once the pallet has been stowed, it returns to the starting position.

**PICKING:** The satellite, runs along the rack, stops in below the first available pallet, lifts it and carries it to the "Home" position. The operator can therefore easily collect the pallet with the forklift truck.

**CONTINUOUS PICKING:** The operator can set off an activity consisting of multiple picking missions, without the need to repeatedly press the buttons on the radio controller. This is useful for multiple picking operations in the same lane.

**PALLET OVERFLOW ADJUSTMENT:** Manual setting of distance between pallets from 20 to 150 MM. In the case of pallet overflow, the distance between pallets can be managed automatically via radio controller.

## OPTIONAL FUNCTIONS

### "Compacting push" pallet reorganisation mode

AUTOSAT automatically reorganises the lane, compacting all of the pallets to fill empty spaces.  
(function available for FIFO mode, compacting from production)

### "Compacting pull" pallet reorganisation mode

AUTOSAT autonomously reorganises the lane, compacting all of the pallets to fill empty spaces.  
(function available for FIFO mode, compacting from shipping)

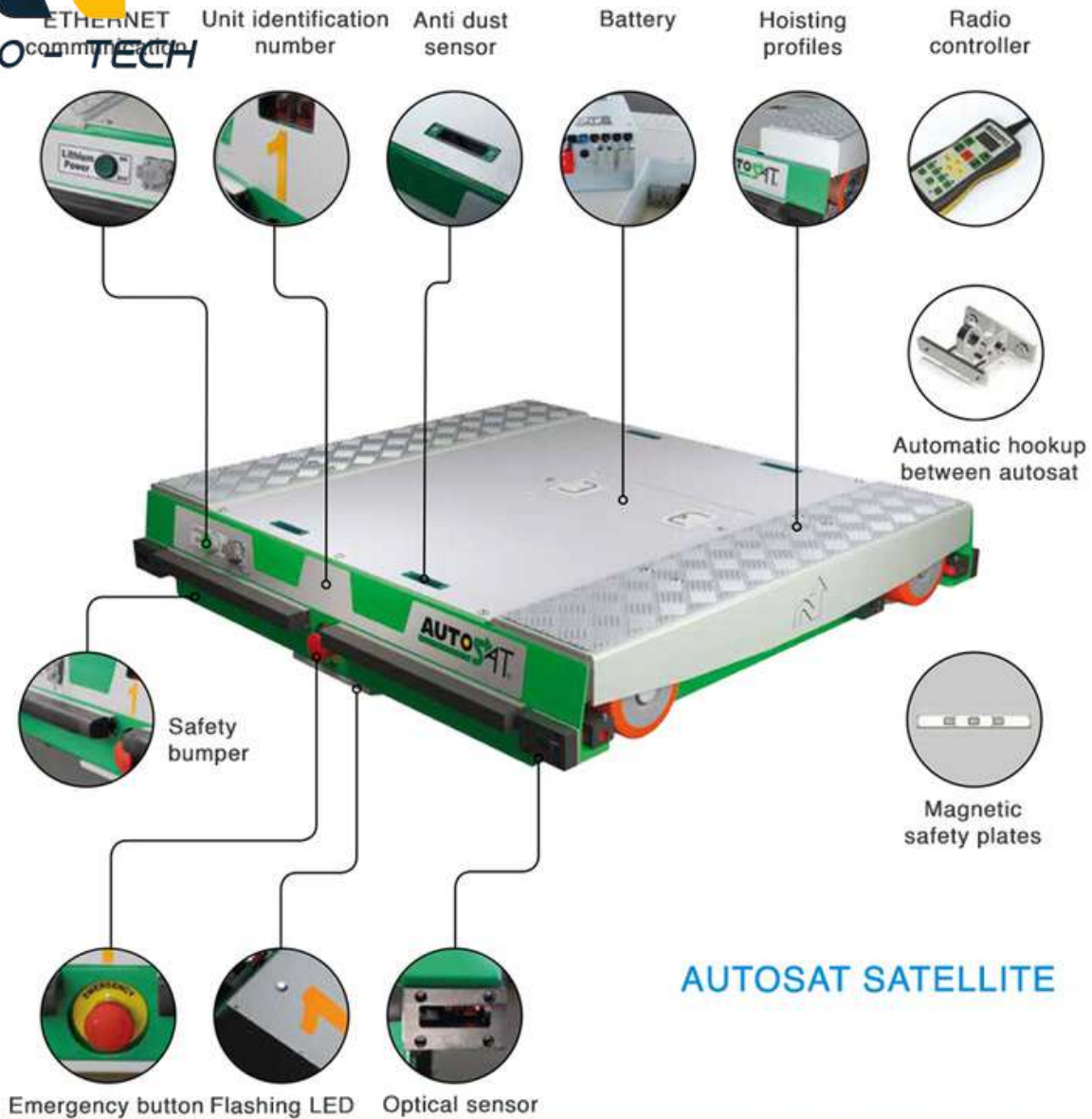
### Anti-collision between AUTOSAT units in the same lane

Required if multiple satellites are used in the same lane. The satellites communicate with each other, avoiding collisions. (function available for FIFO mode)





ETHERNET  
communication  
**REFRO TECH**



## AUTOSAT SATELLITE

### TECHNICAL ADVANTAGES

- ◆ Powered by removable lithium battery Maximum charging time 5 hours
- ◆ Average battery run time 8 hours
- ◆ Anti-tipping guides
- ◆ Laser targeting system for slowing down and positioning at the end of the lane Guide
- ◆ wheels for easy insertion into the lane
- ◆ Can be transported with a standard forklift truck
- ◆ Rapid and silent movement
- ◆ Real-time machine operational data available via the radio controller
- ◆ Suitable for refrigerated areas at temperatures as low as -30°C
- ◆ Significant energy savings with green technology



# THE GODREJ ADVANTAGE



State-of-the-art, high-capacity automated manufacturing facility



Comprehensive in-house testing facility for assured quality



Tested seismic racking



13 branches & 75+ channel partners serving all locations across the country

## WHY GODREJ?

**YOUR  
RELIABLE  
PARTNER**

Best in Quality & Innovative Design

of Steel  
of Engineering  
of Solution

Quick & Safe Project Execution

Committed to Safety  
Timely handover

Life Cycle Support

Rack Audit  
Repair & Modification  
Relocation

## Racking Solutions



Mobile Pallet Racking



Shuttle Pallet Racking System



Double Deep Pallet Racking



Very Narrow Aisle Pallet Racking System



Selective Pallet Racking

Our solutions, perfected with years of experience and our highly trained installation team, backed with world-class production facility enable us to provide our clients with superior storage solutions.

You are one call away from your perfect racking partner

### Enquire now

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Chennai, Tamilnadu, India - 600098

### Know more

GodrejStorageSolutions





# SEAMLESS MULTI-FLOOR & INTERBUILDING MOVEMENT WITH MODULAR BELT CONVEYORS

Conveyors capable of handling 25000 tea bags per day enabled easy level-to-level movement and interbuilding transfer



## About the Company

Our client is a global FMCG brand who is the world's second largest player in branded tea segment. Years of expertise and brand value has helped them build a strong presence across the nation manufacturing about 7 crore kilograms of tea and control 54 tea estates across India.

## Executive Summary

In a factory attached warehouse of a tea processing plant, it's a continuous process flow from raw material storage area to the plant for processing. Also, the tea bags come from across the country and may vary in size, weight, packing etc., Multi floor mezzanine solution offered adequate capacity for storage of varying SKU sizes and to ensure high velocity with minimum handling efforts, damages and high-speed operations, integration of the modular belt conveying systems were the best option.

## HIGHLIGHTS

- ✓ Provided proof of concept prior to design approval demonstrating the working of similar conveyor using our customer's tea bags.
- ✓ Designed and deployed modular belt conveyors that handle 9000 tea bags in a shift and help conserve energy and prevent handling damages.
- ✓ Enhanced safety of system with superior technology
- ✓ Conducted user training for all employees and maintenance training for select employees enabling adoption and quick troubleshooting
- ✓ Integrated system with PLC and web page to enable monitoring the status of conveyors digitally

## ABOUT GODREJ ALTIUS

GODREJ ALTIUS is the best shelving system that brings maximum value to our customer's business. Our systems ensure a safe work environment with an improved operator and material safety. Our shelving systems are ergonomically designed to provide the most comfortable working environment for warehouse operators. This range while ensuring the highest levels of functionality also focuses on aesthetics thereby creating a vibrant workspace. We have also consciously worked on reducing project turnaround time by optimizing the design and simplifying installation efforts. Our range of uprights is strengthened to offer the best solution to our customer's need. Our twin top step beam profile (patented) creates a safe storage for your SKUs and increases the cubic space utilization.

Our multitier systems are designed to be integrated with conveyors, fire safety etc., to create an efficient and safe warehousing experience. Our wide range of accessories caters to specific needs of different segments thereby creating an effective storage system. GODREJ ALTIUS is designed to build an ideal warehouse that offers a safe, hygienic and vibrant environment.

## APPLICATIONS

- 3PL (Third Party Logistics)
- Apparel
- Automobile
- Bulk Document Storage
- Energy/Power/ Oil & Gas
- Engineering
- E-retail
- FMCG
- Pharma
- Physical Retail
- Food & Beverages
- Consumer Durables
- Chemical & Paints

## FEATURES

- Modularity through a wide range of components enables future expansion that fits seamlessly to the existing system
- Flexibility to be configured to any size best suited to the available height and layout.
- Design capability to offer the most effective solution for any load / dimensions (SKUs).
- Optimized for effective cubic space utilization
- Designed to meet specific requirement with capability to handle load per level upto 4 ton (Span upto 3000 mm)
- Rigorously tested walkways to handle trolley and HPT movement and provide ventilated and noise free working environment
- Optimized design ensures material and operator safety
- Designed to deliver unmatched aesthetics, thereby creating a vibrant workspace.
- Designed for integrating conveying system for lateral or vertical movements.
- Designed to comply with FM global norms for fire safety
- Comprehensive range of accessories to facilitate storage of any type of SKU



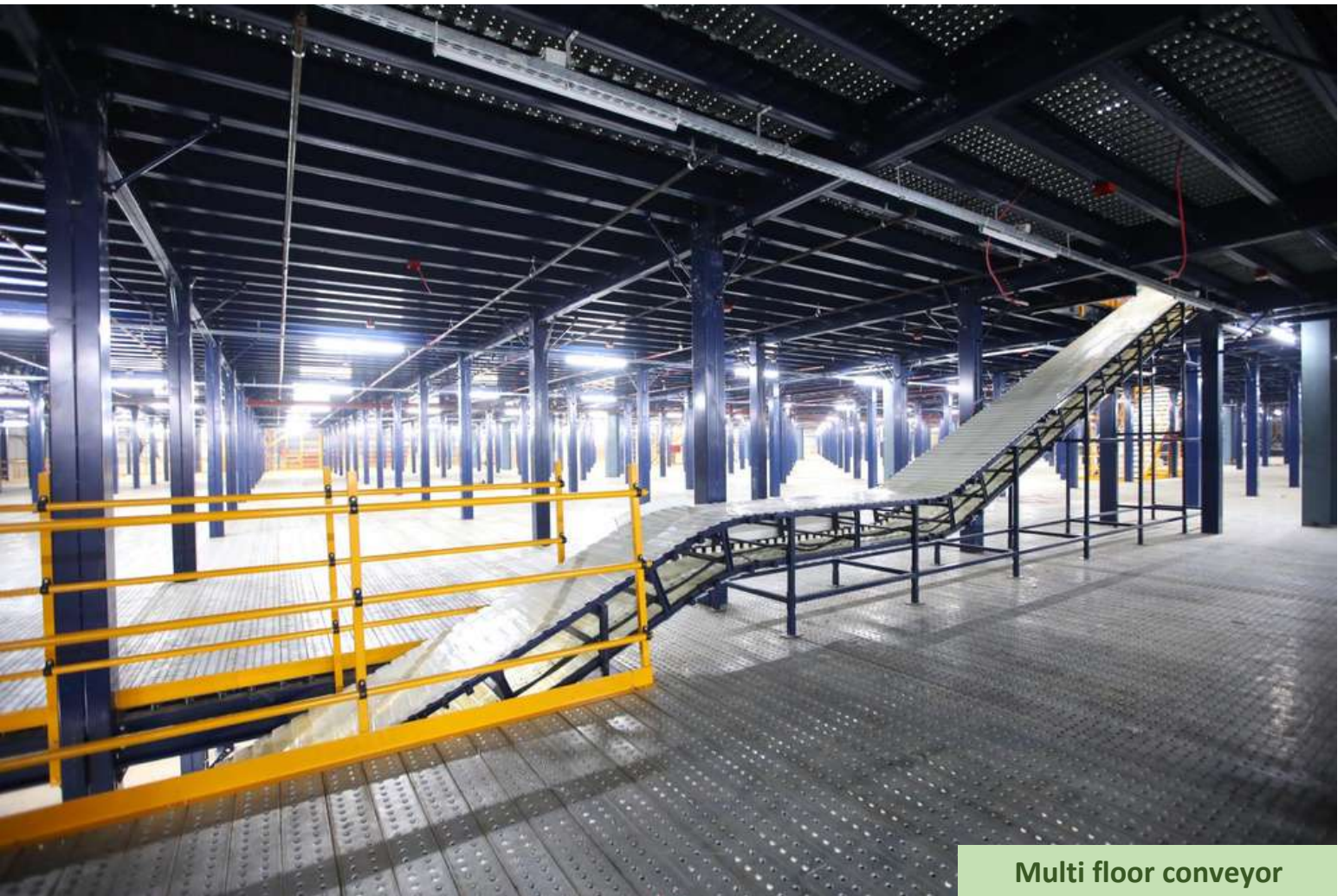


# Installation Images

REERO - TECH



Interbuilding conveyor



Multi floor conveyor



Our client founded in the year 1939, is one of India's pioneering homegrown cement companies. For nearly eight decades, they have delivered value-added products and reliable post-sale services. It has played a catalytic role in India's infrastructural growth.

# COMPACT STORAGE SYSTEM FOR SPARES

Cement manufacturing facility with a requirement to store operational tools and spares in a confined space.



**MOBISTACK NEO**  
Optimize space with maximum flexibility

## About the Company

With over 20,000 dealers and sub-dealers, the company presently services more than 22 states and is among the leading players in every region across India. To scale the business as well as venture into new geographies, both, acquisitions and greenfield expansions have been key for the company.

## Customer Need

The spare parts and other high value items which are used for plant instrumentation and maintenance activities were stored on the ground temporarily by the customer. The various SKUs (automation tools, bearings, sensors, PLC units and others) are to be stored in a confined space of 500 Sq ft with 10 ft elevation in a safe and secure system with easy storage and retrieval. The customer also needs 80-100 kg load capacity per level at any point of time for storing SKUs of various dimensions in either cartons or crates.

## HIGHLIGHTS

- High volumetric utilization up to 26ft with lesser footprint achieving 70% more storage compared to regular shelving systems.
- Modular design - flexible integration and reconfiguration to meet customers' evolving needs.
- Compact & efficient design to ensure easy material storage and retrieval.
- Reliable and robust system offering 10+ years of hassle-free operations.
- Wide range of accessories adaptable with the system.
- High load capacity of 700 kg /unit



## Challenges

Our customer faced the problem of unorganized storage without effectively utilizing vertical space. This also resulted in reduced material safety and increased difficulty in picking and put away operation.

**100% Selective & Dense :** Designed a system to achieve 70% more storage with 100% selectivity.

**Product Security:** All spares stored are of high value and would require a secure storage system with anti-theft mechanism.

**Utilize Vertical Storage:** The system was designed to utilize the available clear height of the room.

**Restricted Movement due to COVID19:** Though man movement was difficult due to the pandemic, our pan India team through special permission completed the project.



## The Godrej Advantage

- Wide range of product offering to choose the best suited solution for the client.
- Pan India presence to ensure uninterrupted installation even during pandemic scenario
- Easy post installation service and support
- Powder coated & easy to clean
- Lead free & ROHS compliant



## SOLUTION

- Mobistack system covering 7.9 x 4.9 x 2.6 (LxWxH) was built to cover the available storage space with a clear aisle of 900mm.
- 7 Double facing and 2 single faced storage units were designed to utilize 100% of the available storage space.
- 3050 cu. Ft of storage area has been achieved with a total of 336 loading level with 100 kg UDL.
- Aisle wise and level wise tagging has been done for easy storage and retrieval adhering to 5s philosophy.

## Benefits

- Achieved 336 loading levels increasing storage utilization by 70% compared to conventional storage system.
- Maintenance free operations
- High level of cubic storage achieved with utilization of vertical height
- Project completion and handover within stipulated timelines.



# Installation Images

REFRO - TECH







ALTIUS  
THE BEST INDUSTRIAL SHELVING



### About Us

Godrej Storage Solutions is a part of the renowned Godrej group, a global conglomerate with businesses ranging from consumer products to aerospace engineering. We are a pioneer, visionary and market leader since the last 6 decades in the field of warehouse storage systems in India. With innovation, adaptability and reliability as our core strength, we have created more than 200 million square feet of state-of-the-art storage systems for various sectors ranging from E-commerce to 3PL since the beginning of this century.

Our culture of continuous learning coupled with decades of experience in the field of intralogistics has enabled us to design best-in-class solution to serve all storage needs.

## ABOUT GODREJ ALTIUS

GODREJ ALTIUS is the best shelving system that brings maximum value to our customer's business. Our systems ensure a safe work environment with an improved operator and material safety. Our shelving systems are ergonomically designed to provide the most comfortable working environment for warehouse operators. This range while ensuring the highest levels of functionality also focuses on aesthetics thereby creating a vibrant workspace. We have also consciously worked on reducing project turnaround time by optimizing the design and simplifying installation efforts. Our range of uprights is strengthened to offer the best solution to our customer's need. Our twin top step beam profile (patented) creates a safe storage for your SKUs and increases the cubic space utilization.

Our multitier systems are designed to be integrated with conveyors, fire safety etc., to create an efficient and safe warehousing experience. Our wide range of accessories caters to specific needs of different segments thereby creating an effective storage system. GODREJ ALTIUS is designed to build an ideal warehouse that offers a safe, hygienic and vibrant environment.

## APPLICATIONS

- 3PL (Third Party Logistics)
- Apparel
- Automobile
- Bulk Document Storage
- Energy/Power/ Oil & Gas
- Engineering
- E-retail
- FMCG
- Pharma
- Physical Retail
- Food & Beverages
- Consumer Durables
- Chemical & Paints

## FEATURES

- Modularity through a wide range of components enables future expansion that fits seamlessly to the existing system
- Flexibility to be configured to any size best suited to the available height and layout.
- Design capability to offer the most effective solution for any load / dimensions (SKUs).
- Optimized for effective cubic space utilization
- Designed to meet specific requirement with capability to handle load per level upto 4 ton (Span upto 3000 mm)
- Rigorously tested walkways to handle trolley and HPT movement and provide ventilated and noise free working environment
- Optimized design ensures material and operator safety
- Designed to deliver unmatched aesthetics, thereby creating a vibrant workspace.
- Designed for integrating conveying system for lateral or vertical movements.
- Designed to comply with FM global norms for fire safety
- Comprehensive range of accessories to facilitate storage of any type of SKU



**Godrej Altius Titan** shelving range is based on our beam design configuration. The system is designed to handle heavier discrete SKUs (300 to 4000Kg UDL) which can either be stored in cartons, bins or directly. Our indigenously developed Step Beam and Upright profiles can be configured to build multitier system up to 10 levels. The system can be integrated with conveyors, VRCs and loading gates to improve throughput and enhance warehouse efficiency.



## Basic Elements

- A1. Upright
- A2. Beam
- A3. Base Plate
- A4. Walkway
- A5. Staircase

## Highlights

- A combination of **24 variants of step beam and 12 variants of Uprights**
- **Component level safety integration** to enhance material and operator safety
- **Railing uniformity** improves system's aesthetic appeal
- **Easy and quick installation** with optimized design

**Godrej Altius Lite** shelving range is based on our panel design configuration. The system is designed to handle light to medium SKUs up to 350 KG per level which can either be stored in bins, cartons or directly. Our wide profile of upright enable us to create a strong and sturdy storage system thereby increasing the storage efficiency by utilizing vertical space.



### Basic Elements

- A1. Upright
- A2. Panel
- A3. Railing
- A4. Walkway
- A5. Staircase

### Highlights

- A combination of **12 variants of Uprights**
- **Galvanized panels** to handle load upto 350 kg UDL
- **Compact design**
- **Component level safety integration** to enhance material and operator safety
- **Easy and quick installation** with optimized design



## SHELVING SUPPORT ACCESSORIES

Our solutions are highly customizable to any requirement. SKU type, SKU quantity, rotation frequency, manpower and many other factors are considered to design the suitable using our wide portfolio of HDS support accessories.

## MATERIAL ACCESS

A good shelving system is only as good as the ease of material access, our team of engineers have designed various material access accessories to enable the best shelving experience. Our design are inline with EN regulations while also consider ergonomic factors to enable a safe and effortless storage and retrieval operation, thereby improving warehouse throughput.



Staircase



Collapsible Gate



Swivel Gate

The shelving system can be provided with one or more staircases, subject to local building and fire regulations. Various gate mechanisms from manual collapsible gate to motorized swivel gate to load pallets safely on any level of the system. Level-to-level movement of bulk goods through Vertical Reciprocating Conveyor (VRC) and discrete movement of goods through conveyors.



Motorized Swivel Gate



Vertical Reciprocating Conveyor

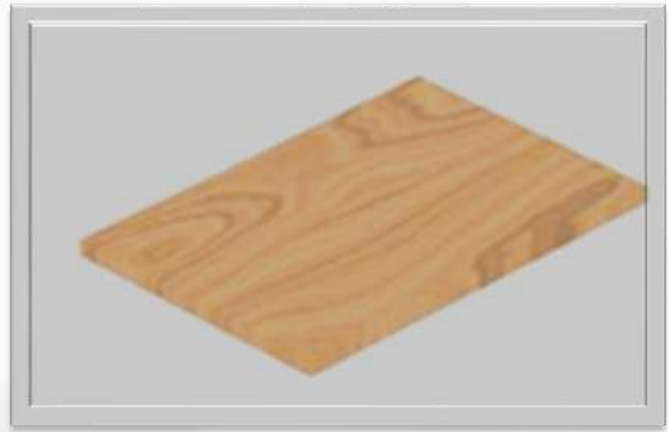
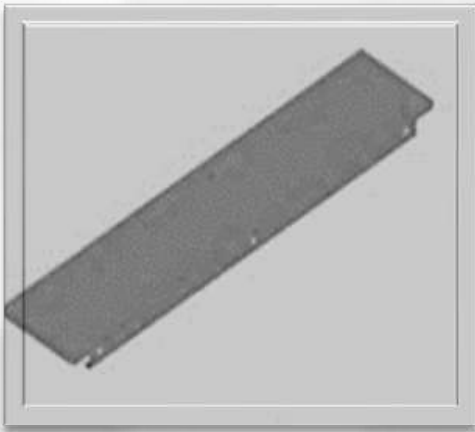


Conveyors

All material access accessories are carefully designed to improve throughput and reduce physical strain on operators.

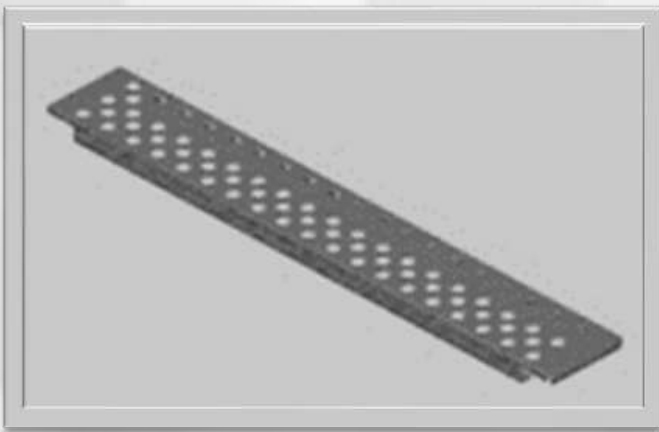
## DECKING PANELS

Decking is an integral part of a shelving structure; it creates an infill between beams to store SKU of various dimensions. Based on the type and dimensions of SKUs various, we offer a wide variety of decking panels to suit the need. Choosing the right type of decking is important to meeting your storage needs.

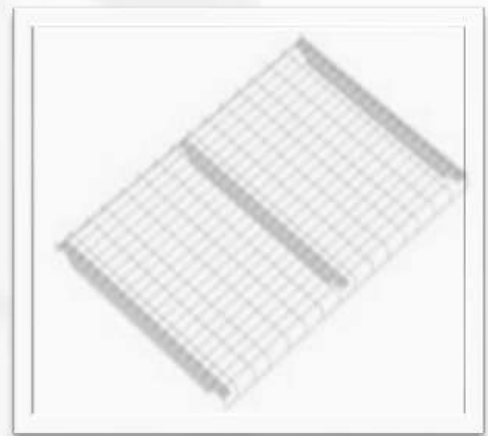


6 Bend Steel Wooden

Based on the type of SKU and other factors such as ventilation, fire safety etc we can choose from a wide variety of plain and perforated panels.

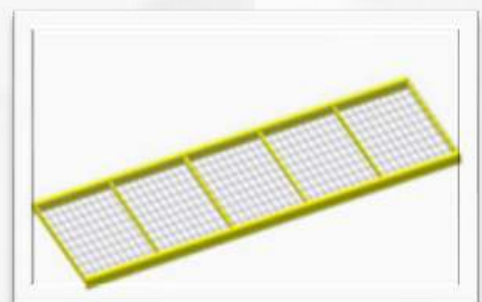


Perforated Steel



Mesh

Different decking type will have its own maximum weight load capacity. Apart from the load factor, we also consider durability, ventilation, fire safety etc while designing your storage system. Our decking options offer extra flexibility for warehouses with various size, type and weight bearing loads.



Light Duty Mesh



## WALKWAY PANELS

Multitier shelving system increases the storage capacity of your warehouse or manufacturing facility by utilizing vertical space. We offer a wide variety of walkways and accessories creating an extensive range of solutions to meet our customer needs. Our walkways are carefully designed to be integrated with conveyors, lights, sprinklers, handrails, and more to provide a safety and efficient storage system.



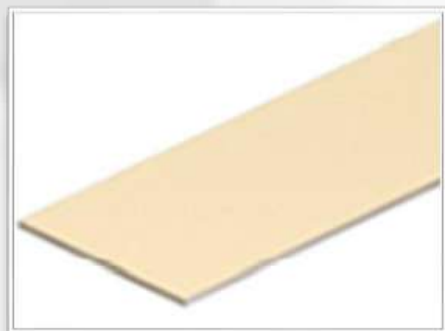
Plain



Embossed

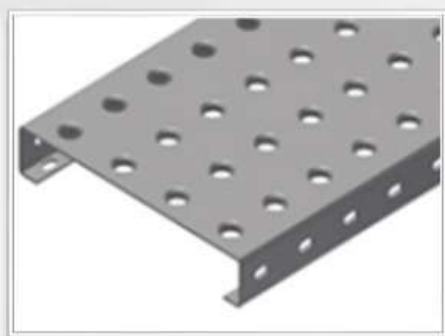


Tube Welded



Wood

Based on the load requirement, ventilation, lighting and other safety element, we offer a range of plain and perforated panels. Our solutions are tailored to enhance our customers shelving experience and increase profitability.



Perforated -Hole



Perforated -Slot



Grating

The panels are designed to improve warehouse efficiency, reduce operator fatigue and increase productivity and enhance warehouse aesthetics.

## ACCESSORIES

Our wide portfolio of accessories transforms a single storage structure into a efficient and productive system which enables our customers to improve their storage efficiency and reduce turnaround time.

## DIVIDERS

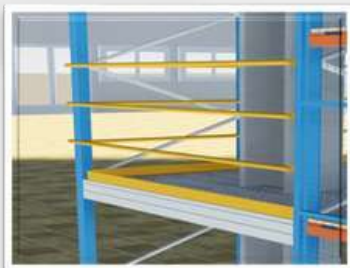
- |                                |                     |                   |
|--------------------------------|---------------------|-------------------|
| 1. Adjustable Plain Metal      | 7. Mid Divider      | 9. Plastic Mesh   |
| 2. Adjustable Perforated Metal | a. Rod Type         | 10. WPC Divider   |
| 3. Adjustable Mesh             | b. Hook Type        | 11. Glass Divider |
| 4. Fixed Plain Metal           | c. U Type           | 12. Loop Divider  |
| 5. Fixed Perforated Metal      | d. Frame Type       | 13. Divider Rod   |
| 6. Fixed Mesh                  | 8. PP Sheet Divider | 14. Divider Bar   |

## CLADDINGS

1. Plain Sheet
2. Perforated Sheet
3. Mesh
  - a. Light Mesh
  - b. Flat Mesh
  - c. Framed Mesh
4. PP Sheet
5. Nylon mesh
6. Simple strap



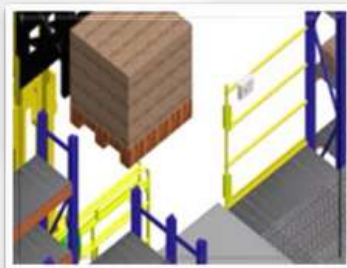
## SUPPORT & SAFETY ACCESSORIES



Railing



Load Check Point



Gate Closure Alarm



Impact Resistant Guards

- |                              |                        |
|------------------------------|------------------------|
| 1. Aisle Placard             | 8. Amnesty Bins        |
| 2. Safety Signages           | 9. Ladders             |
| 3. Upright Guard             | 10. Ladder Support     |
| 4. Back Stopper              | 11. Bin Support        |
| 5. Movable BFR               | 12. Side Strip         |
| 6. Gap Cladding              | 13. Cabinet Shelving   |
| 7. Fire Extinguisher Bracket | 14. Drawer in Shelving |



# THE GODREJ ADVANTAGE



State-of-the-art, high-capacity automated manufacturing facility



Comprehensive in-house testing facility for assured quality



Tested Seismic Racking



13 branches & 75+ channel partners serving all locations across the country

**Your  
Reliable  
Partner**

Best in Quality & Innovative Design

of steel of engineering of solutions

Quick & Safe Project Execution

committed to safety timely handover

Life Cycle Support

rack audit repair & modification relocation

## Other Solutions



Mobistack—Mobile Shelving



Mezzanine Floor



Conveying Systems



Selective Pallet Racking



Mobile Pallet Racking

Our solutions, perfected with years of experience and our highly trained installation team, backed with world-class production facility enable us to provide our clients with superior storage solutions.

You are one call away from your perfect racking partner

☎ [1800-419-7060](tel:1800-419-7060)  
 ✉ [storage@godrej.com](mailto:storage@godrej.com)  
 🌐 [www.godrej.com](http://www.godrej.com)  
 📍 #1, SIDCO Industrial Estate, Ambattur  
 Chennai, Tamilnadu, India -600098

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[GodrejStorageSolutions](http://GodrejStorageSolutions.com)





# IMPROVING CUBIC SPACE UTILIZATION AT E-COMMERCE FULFILLMENT CENTRE

Increased storage capacity by modifying bottom beam in Multi-tier heavy duty shelving systems



## About the Company

Our client is a leading E-commerce player with over 80 million products across 80+ categories. They operate in giant volumes of around 8 million shipments per month. To enable fast and smooth operations, they have 21 state of art warehouses across the country

## Executive Summary

In an Ecommerce fulfillment centre, it is vital to find ways to improve cubic space utilization to provide ample storage. Sale period in E-commerce calls for maximum utilization of storage systems to meet demands. Reconfiguring the storage systems with unique solutions can help in achieving the same.

## HIGHLIGHTS

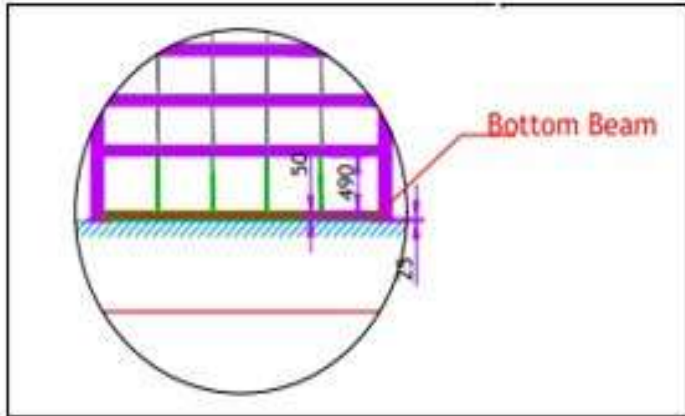
- ✓ Completely customised solution to meet customer requirements
- ✓ Increased cubic space utilization by 28% with bottom beam modification
- ✓ Concluded the project within 25 days, on time before saleperiod
- ✓ Executed the project in working warehouse with minimal hinderance to operation
- ✓ Designed the system to allow enough clearance for maintenance activities



## Our Client's Needs:

With sale period coming ahead, our client wanted to improve cubic space utilization for Multi-Tier systems that was installed over an area of around 26000 sqm.

Our client wanted us to increase clearance in bottom levels to permit storage of large sized bins and required level adjustments .



## Solution:

- The project was executed around the clock to meet customer timelines
- Bottom beam was modified by replacing the existing beam with a sleeker beam that can bear the same load.
- The bottom beams levels were lowered to increase the storage capacity at bottom levels, unlike the previous simply-supported structure.
- Provided customised adjustable mid mesh dividers to match the increased height of the levels.

## Challenges:

- **Stringent timelines:** The project had to be completed before the start of sale period.
- **Need to modify accessories:** The dividers had to be replaced to fit the increased clearance.
- **Presence of back cladding:** The systems were built with back mesh cladding, which had to be carefully dismantled from the system to facilitate bottom level modification

Customized divider



## The Godrej Advantage

- Solutions crafted to meet unique needs with our technical expertise
- Pan India presence to ensure uninterrupted support execution even during pandemic scenario
- Compliance to international design standards
- Quick troubleshooting and seamless project execution in line with your timelines
- Safety of man and material ensured throughout product lifecycle





# Installation Images

REFRO - TECH



Increased CBM utilization at bottom level



Modified bottom level



The objective was to build a state-of-the-art distribution facility under challenging timelines and to maximize storage capacity without compromising high throughput demand. The facility was designed to achieve a balanced throughput and storage efficiency.

# ECOMMERC DISTRIBUTION CENTER

To meet the rising demand for online products, large distribution centre was designed to cater the Indian Market.



## HIGHLIGHTS

### About the Company

Major ecommerce player who is also a pioneer in Indian online shopping business. They have revolutionized the entire Indian e-commerce industry with their novel approach. They have grown to billions in the past few years fueling the Indian ecommerce success.

### Executive Summary

The key to competitive advantage in ecommerce industry is quickest delivery time. This is always challenged by the huge variety of merchandise and territory being serviced. To address this strategic logistics network of fulfillment centers, regional hubs and last mile delivery centres are a must. In this content, this project planned in South India is one of largest fulfillment by an ecommerce player in India.

- Flexible shelving solutions that would suit for storing small to medium sized SKUs.
- Efficient layout for material, equipment and personnel flow.
- A balanced throughput and storage efficiency was achieved to suit the need of the customer
- Built in compliance with global racking standards.
- Emergency & Fire Safety measures were integrated.

## Challenges

Being one of the largest fulfillment center, the minds behind this project ensured the highest level of quality and a flexible design. The major challenges during the conceptualization of the solutions were:

**Slotting Huge Variety of SKUs:** To design storage solution for tiny handpicked SKU like pen-drive to palletized bulk items.

**Optimize Storage Space:** The cubic storage space to be created was to the tune of 200000 sq. ft.

**Challenging Deadlines:** The project had pressing timeline of 90 days.

**Operational Efficiency:** While planning for high storage, the design needed to facilitate high throughput as well.

**Safety:** Designing an earthquake resistant storage system with utmost safety parameters to ensure people safety as it is expected to have more than 100 people during day-to-day operations

**Integration:** The storage system should have compatibility with conveyors, lighting and fire fighting.



## SOLUTION

- The major highlights of the storage solutions proposed and provided by us are as:

### Products Installed

- Heavy duty multi-tier shelving with vertical conveyors
- Special bridge to connect office and warehouse
- Customized dividers and flexible partitions were designed for slotting the wide range of SKU's
- Special imported grated walkway floor for heavy HPT movement carrying bulk SKU's on pallet.

## Benefits

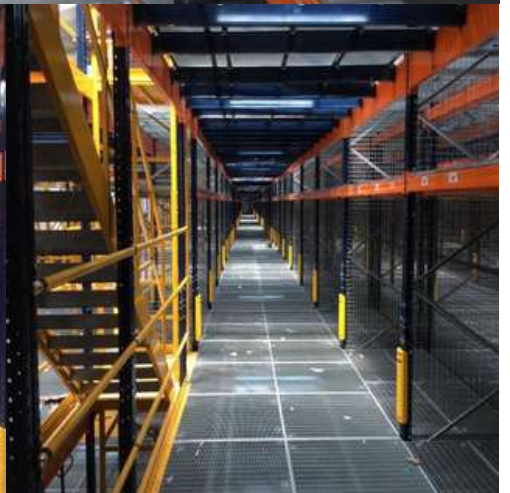
- Capacity: 1,50,000 picking position
- The system was integrated with automated conveyor system for ease of movement
- The solution conceptualized was able to support quick identification, picking and movement of SKU's
- Our unique proposition of walkway gratings ensured ventilation and lighting.

## The Godrej Advantage

- The experience in handling such mega projects and coordinating in parallel with other services of MEP within our system, were handy.
- Deploying and managing man-power to the tune of 100+ along with adequate mechanization and efficient project management.
- A seismic resistant storage solution which

is







Our client is a French private independent logistics company founded in 1967. The company entered India logistics space in the year 2016 with the aim of revolutionizing Indian logistics sector. With this aim, the company started its expansion across the country with multiple third party warehouses and distribution centres.

# THIRD PARTY LOGISTICS WAREHOUSE

The warehouse was planned as a general storage space for any sector client to occupy and utilize for a set time frame.

## About the Company

A cosmopolitan group with its presence in three continents and 14 countries continues to expand across the globe in the logistics sector. With a global revenue of about 1.4 Billion Euros and 27,500+ staffs during FY20, the company has increased grown multifold since its inception.

## Executive Summary

The implementation of GST provided great opportunity for logistics companies. Our client charted their expansion plan and set plans for new warehouse spaces in west India. They required an open warehouse for multiple customers under a single roof which caters the growing need of storage space by various sectors. Godrej Storage Solutions took the mammoth task of building a large multi-customer storage facility in Mumbai.

## HIGHLIGHTS

- Flexible racking solutions designed for a multi-customer facility that would suit any general storage requirement.
- Efficient layout for material, equipment and personnel flow.
- A balanced throughput and storage efficiency was achieved to suit the need of various clients.
- Built in compliance with global racking standards.



## Challenges

Multi-customer facilities are a challenge since some of the input parameters are unknown.

- **Generic Design:** Major customer segments like Chemical, Engineering, Automobile and FMCD are likely occupants and hence the solutions need to suit all segments.
- **Unknown SKU Dimension:** SKUs to be stored are unknown for the multi-customer facility (MCF).
- **Speed of Operation:** Each sector operates at different operational efficiency depending on SKU and stock rotation, MCF needs to have a common operational efficiency for all sectors.
- **Standardization:** The facility needs to accommodate clients of various segments and hence requires standardization of storage to accommodate all sectors.



## The Godrej Advantage

- FM Global norms compliant storage system
- Optimum space utilization in the facility
- Compatibility with multiple MHE's
- Better illumination in the warehouse for efficient operation
- Lead free and ROHS compliant storage system



## SOLUTION

- Selective Pallet Racking System was designed and built since the facility was planned for Bulk-in Bulk-Out material movement.
- The system was designed to hold 3 different sizes of pallet since they are commonly used among the possible client sectors.
- Pallet height was considered at average levels, based on which the loading levels were designed.
- Reach Truck (RT) material handling equipment's were planned to handle the buck movement of materials. This would further help in scaling up operations since RT is commonly available on rental.

## Benefits

- Selective Pallet Racking system was designed to achieve a balance in storage efficiency and throughput.
- A total of 11,000 pallet positions was achieved.
- G+6 loading levels were achieved at an average height of 1200 mm
- The system can be accessed with Reach Truck or VNA truck.



REFRO - TECH

# Multi-tier Heavy Duty Shelving System

Sturdy- Ergonomic - Reliable



Wide span  
Customizable  
Scalable

## About Us

Godrej Storage Solutions is a part of the renowned Godrej group, a global conglomerate with businesses ranging from consumer products to aerospace engineering. We are a pioneer, visionary and market leader since last 6 decades in the field of warehousing storage systems in India. With innovation, adaptability and reliability as our core strength, we have created more than 200 million square feet of state-of-the-art storage systems for various sectors ranging from E-commerce to 3PL since the beginning of this century.

Our culture of continuous learning coupled with decades of experience in the field of intralogistics has enabled us to design best-in-class solution to serve all storage needs.



## About the product

Our Multi-tier Heavy-duty shelving system is designed to handle discreet hand picked SKUs. The wide span of the system offers the benefit of minimum number of columns and hence effective utilization of space. It is ideal for a wide variety of manually handled SKUs that vary in size and load. We have the capability to design HDS systems as high as 10 tiers utilizing overhead space with the mezzanine floor as walkways.

The multitier system increases cubic space utilization and is designed with conveyors and VRCs for easy material movement. Each floor can be facilitated with value adding zones for material processing. Additionally every level can be designed with loading gates for bulk loading of materials by the use of MHE. The SKUs can be directly placed on the shelving levels or with use of bins and cartons.

Depending on the seismic zone of the project site, we possess the capability to design seismic resistance system. The high level of flexibility that our Heavy Duty Shelving system offers along with our extensive range of accessories makes it an ideal solution for a wide variety of man-to-goods principle products/materials.

## APPLICATIONS

- 3PL (Third Party Logistics)
- Apparel
- Automobile/ Auto ancillary units
- Bulk Document Storage
- Energy/Power
- Engineering
- E-Retail
- FMCG
- Physical Retail

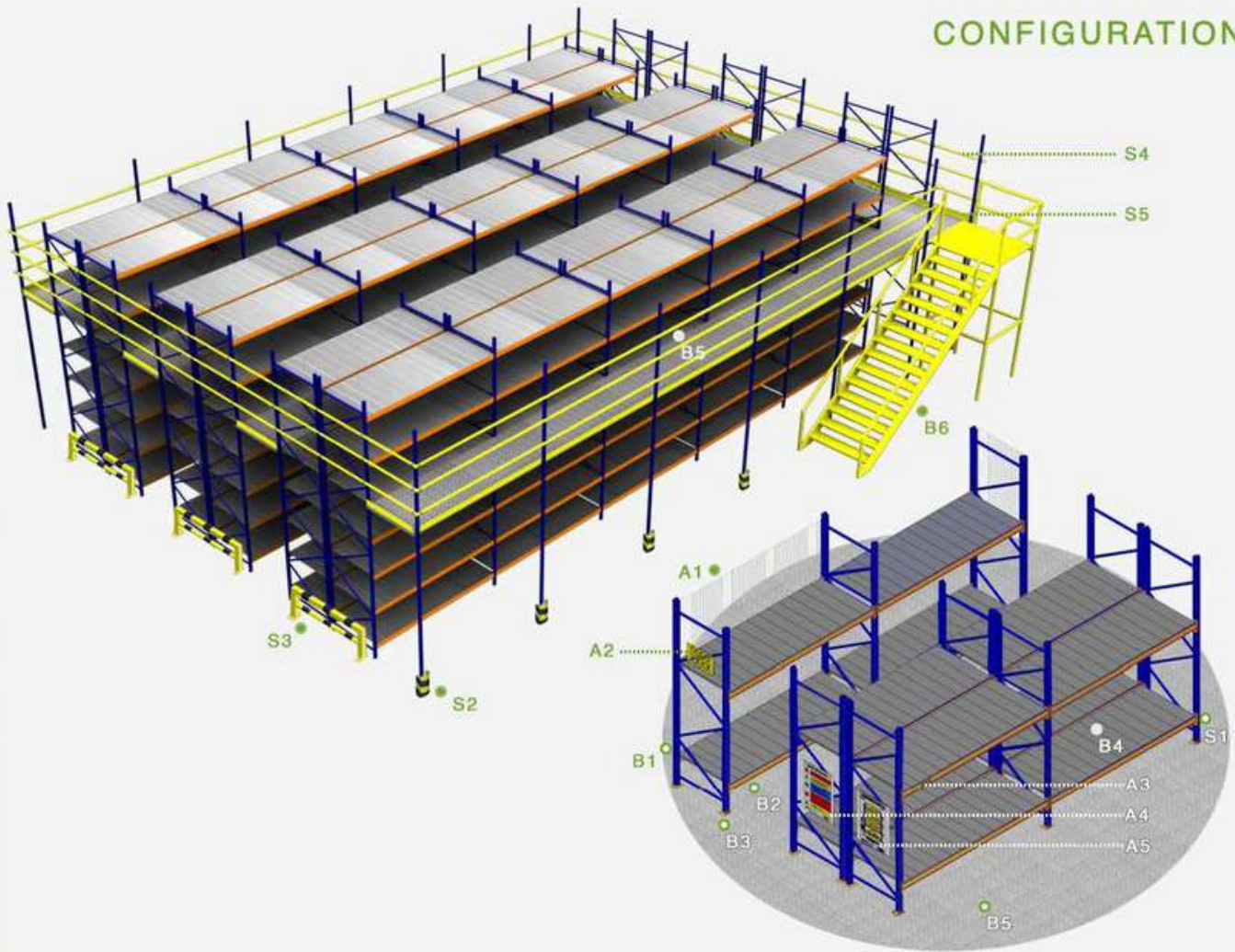
## FEATURES

- Modularity through a range of components enables future expansion that fits seamlessly to the existing system.
- Flexibility to be configured to any size best suited to the available height and layout.
- Design Capability to offer the most effective solution for any load SKUs.
- Designed to meet specific requirements with capability to handle Load per level between 800 to 2000 kg
- Rigorously tested Walkways to handle trolley and HPT movement and provide ventilated and noise free working environment
- Study system designed to handled dynamic load
- Suitable for integrating conveying system for lateral or vertical movements.
- Designed to comply with FM Global norms for fire safety
- Designed with optional dividers to segregate SKU's
- A variety of accessories to facilitate storage of any type of SKUs





## CONFIGURATION



### Basic Elements

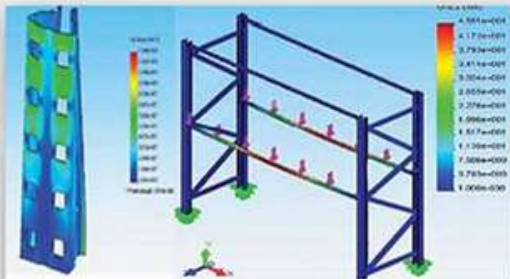
- B1 Upright
- B2 Beam
- B3 Base Plate
- B4 Decking
- B5 Catwalk
- B6 Staircase

### Safety Elements

- S1 Beam Locking Pin
- S2 Upright Guard
- S3 Row Guard
- S4 Railing
- S5 Kickplate

### Accessories

- A1 Mesh Cladding
- A2 Aisle Placard
- A3 Label Holder
- A4 Safety Precaution Notice
- A5 Safe Working Load



Our accumulated knowledge coupled with cutting edge design tools help us design and analyse each component ensuring reliability



Well equipped and dedicated in-house lab enables us to conduct experiments and perform validation to comply with all global standards



## HDS SUPPORT ACCESSORIES

Our solutions are highly customizable to any requirement. SKU type, SKU quantity, rotation frequency, man-power and many other factors are considered to design the suitable using our wide portfolio of HDS support accessories.

### Material Access Methods



Staircase



Sliding Gate



Swivel Gate



VRC

### Walkway Panels



4 bend flat panel



Type I perforated panel



Type II perforated panel



Wood Type

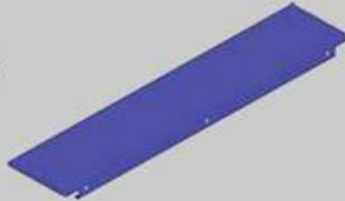


Grating Panel

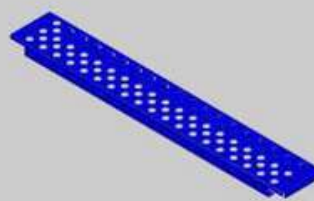
### Decking Panels



4 bend decking



6 bend decking



Perforated decking



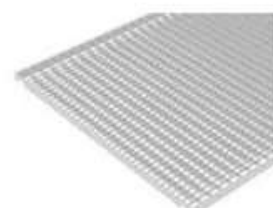
Wooden decking



Mesh Decking



Light duty mesh decking



Grating decking

## ACCESSORIES

Our wide portfolio of accessories transforms a simple storage structure into a efficient and productive system which enables our customers to improve their storage efficiency and reduce turnaround time.

### Dividers

- |                                |                     |                   |
|--------------------------------|---------------------|-------------------|
| 1. Adjustable Plain Metal      | 7. Mid Divider      | 9. Plastic Mesh   |
| 2. Adjustable Perforated Metal | a. Rod Type         | 10. WPC Divider   |
| 3. Adjustable Mesh             | b. Hook Type        | 11. Glass Divider |
| 4. Fixed Metal                 | c. U type           | 12. Loop Divider  |
| 5. Fixed Perforated Metal      | d. Frame Type       | 13. Divider Rod   |
| 6. Fixed Mesh Divider          | 8. PP Sheet Divider | 14. Divider Bar   |

### Claddings

1. Plain Sheet Cladding
2. Perforated Sheet Cladding
3. Mesh Cladding
  - a. Only Mesh
  - b. Flat
  - c. Frame
4. PP Sheet Cladding
5. Nylon Net



### Mezzanine Support Accessories



Railing

Load Check Point

Safe Loading Gate

Column Guards

### Safety & Other Support Accessories

- |                   |                               |                                    |
|-------------------|-------------------------------|------------------------------------|
| 1. Doors          | 8. Back Stopper               | 15. Garment Hanger                 |
| 2. Aisle Placard  | 9. Front Plate                | 16. Cabinet Shelving               |
| 3. Barcode Labels | 10. HRV AREA                  | 17. Drawer In Shelving             |
| 4. Safety Signage | 11. Movable BFR               | 18. Ladders                        |
| 5. Upright Guard  | 12. Side Strip                | 19. Ladder Support                 |
| 6. Row Guard      | 13. Fire Extinguisher bracket | 20. Bin Support                    |
| 7. Front Stopper  | 14. Amnesty Bins              | 21. MHE Collision Avoidance System |



# MINIMISING TOUCH POINTS WITH AUTOMATED MOVEMENT & SORTATION

Storage integrated with Conveying and sorting solutions to handle materials post picking to dispatch at a Tool manufacturer's warehouse



## About the Company

Our client is a premiere global provider of metal working solutions with a strong expertise of 80+ years. They specialize in manufacturing of tooling, engineered components and advanced materials that are consumed in production processes.

## Executive summary

In a light engineering industry such as tool manufacturing, the finished goods are substantially small and require careful handling to prevent material loss and maintain high standards. The touchpoints can be minimized with automation and technology to enable safe and controlled material movement. Storage systems when integrated with conveyors and sorters for post picking operations, enhance accuracy in the flow of material and helps achieve maximum efficiency.

## HIGHLIGHTS

- ✓ Integrated Multi-level boltless shelving systems with different types of conveyors at different stages for seamless post picking operations
- ✓ Value addition areas were upgraded with packing line and invoicing line conveyors capable of handling 750 boxes per hour and 400 boxes per hour, respectively. Automatic code scanning and sorting technology to direct the material to the right dispatch counter
- ✓ Real time process monitoring enabled with TV console and HMI display.

**Our Client's needs:**

Our client was building up a new centralized warehouse consolidating storage, value add operations and dispatch. In the process they wanted to improve handling productivity for their tools warehousing operations. They wanted to minimize touchpoints in handling of material after picking through different stages like packing, invoicing and sorting to different courier partners

**Challenges:**

As the warehouse catered to storage of small sized items, the conveyors had to be designed for safe handling of materials without any chance for material loss. Subsequently after solution design, there were changes in customer requirement due to civil changes which required design alteration.



HMI display and TV console

**Solution:**

- A seamless path for movement of materials between the floors of Multitier Shelving system was created by integration of conveyors.
- Modular conveyors were planned towards the packing and invoicing stages enabling smooth turns. Gravity roller conveyors were provided at the stages of packing and invoicing.
- A combination of automatic bar code reader and push sorter were deployed for identification and diversion of packages to designated pick up trolleys catering to various courier service providers
- Tv console enabled process monitoring to track the number of boxes in each counter and the rejected boxes.
- Safety sensors and mechanical stoppers were provided at the ends of the conveyor to build a system that withstands any glitch.
- To enable proper usage of the system, mechanical torque limiter was set up to stop the system in case of excess loading.

**The Godrej Advantage**

- ✓ Solutions crafted to meet unique needs with our technical expertise
- ✓ Pan India presence to ensure uninterrupted project execution
- ✓ Compliance to international design standards
- ✓ Quick troubleshooting and maintenance support
- ✓ Safety of man and material ensured throughout product lifecycle





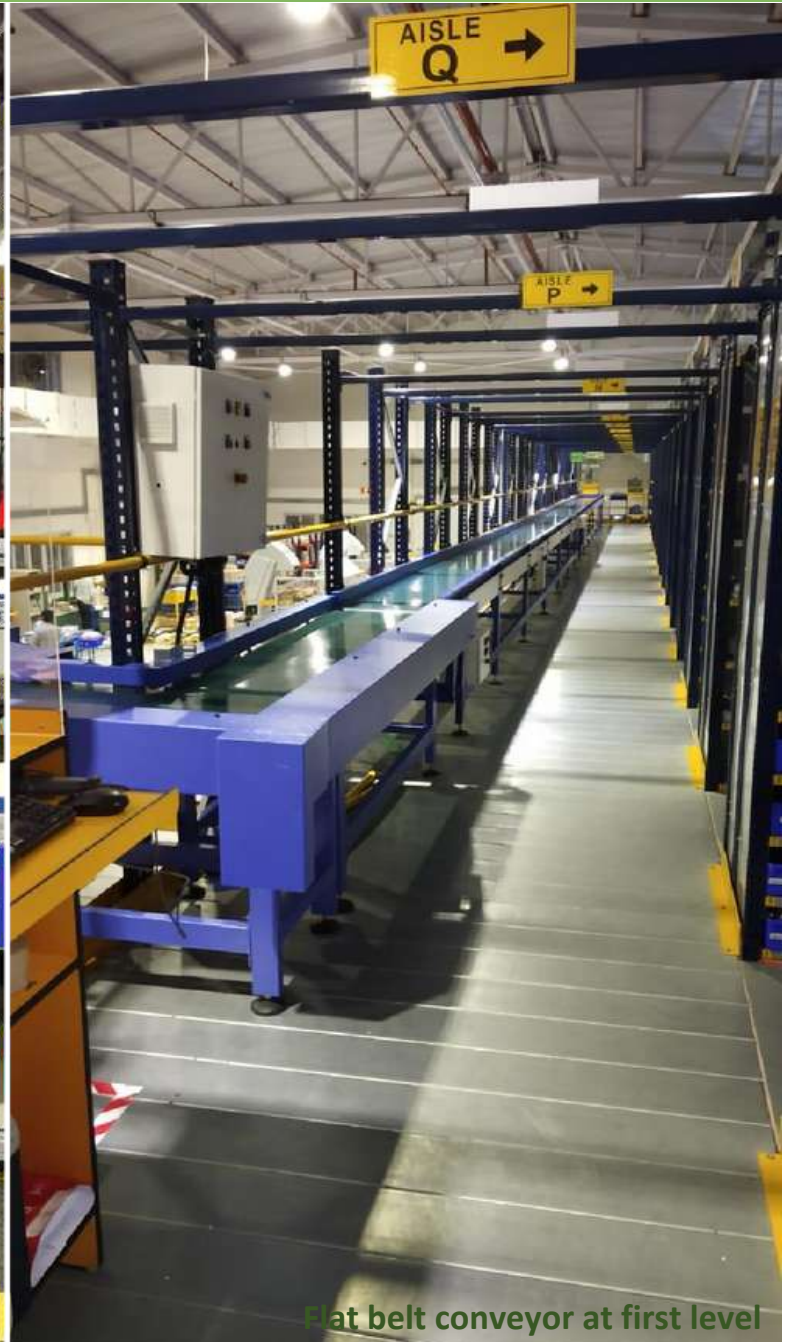


# Installation Images

REFRO - TECH



Inclined belt conveyor connecting ground level



Flat belt conveyor at first level



Dispatch point post sorting



Scanning and sorting area



Our client, a world-leading logistics company, wanted to set up its very own distribution warehouse in Gurgaon, India. The warehouse was designated to enliven 700+ retail outlets. The warehouse was built to store numerous sportswear and other SKUs related to the game of basketball, football and other training-related activities.

# SINGLE CLIENT 3PL DISTRIBUTION CENTER

Distribution centre for sportswear storage to enliven 700+ retail outlet. Integration with conveyors, lighting and fire safety was of paramount importance.

## About the Company

Our client, one of the world's leading logistics companies employing over 3,80,000 people in over 220 countries and territories. DHL is as innovative as a start-up, with the power of an international organization. With 1000 Million deliveries every year they are ramping up their distribution facilities across the globe.

## Executive Summary

We undertook a phenomenal task to conceptualize the NDC (National Distribution Centre), which caters to an immense and diverse Indian market. The NDC enlivens the entire supply chain of a sportswear major which has more than 700 retail outlets and the number is anticipated to grow by 30% in the next couple of years. The warehouse operation is outsourced to our client by the sportswear major.

## HIGHLIGHTS

- Efficient layout for material, equipment and personnel flow.
- 100% selectivity for the SKUs.
- Picking elevations with 24 staircases ideated for productive picking.
- Loading gates and spiral gravity conveyors for material transfer.
- Customized for easy integration with fire safety systems.
- Seamless integration with lighting and ventilation systems.



## Challenges

- The facility employs more than 400 warehouse professionals in two shifts to cater to the growing demand of the Indian market.

The major intra-logistics operational parameters which needed to be addressed while envisioning the facility were:

- **Ergonomics in Design:** Ergonomic design to ensure low fatigue of warehouse professionals.
- **Optimize Storage Space:** A total of warehouse space of about 20,00,00 sq. ft of cubic storage.
- **Challenging Deadlines:** Building the warehouse within 100 days.
- **Space for value-add activities:** Designated areas for data capturing systems, quality controls, staging etc.



## The Godrej Advantage

- FM Global norms compliant storage system
- Optimum space utilization in the facility
- Better illumination in the warehouse for efficient operation
- ROHS compliant storage system
- Ergonomically designed storage system for low fatigue of warehouse professionals



## SOLUTION

- The storage solution was carefully designed to enable maximum storage with the smooth flow of man and material. The conveyor system were carefully integrated with the storage system to enable the material flow.
- Around 4850 pallet positions and 31455 picking positions was built within 100 days with the use of automation and manpower. International standards of safety were ensured at all instances to ensure man and material safety.
- Spiral conveyor system was integrated with every level to ensure the flow of movement from different levels.
- 100% SKU selectivity was designed and achieved to ensure a high level of warehouse throughput.

## Benefits

The major highlights of the storage solution proposed and provided were:

- Multitier shelving system with 31455 picking positions
- Selective pallet racking system with 4850 pallet positions
- Installation achieved within a record 100 days





# Installation Images

REFRO - TECH





Our client is one of India's oldest pharmaceutical company established in 1907, with an objective to develop and revolutionize the Pharmaceutical and Drug industry in the Indian subcontinent. Under its expansion scheme, the company wanted to built a large distribution center to strengthen their supply chain.

# PHARMA DISTRIBUTION CENTER

Building an effective temperature controlled warehouse with emphasis on throughput and energy efficiency.



## About the Company

With a mission to improve healthcare with innovation, our client owns 9 manufacturing facilities across India and 14 subsidiaries across the globe. A strong global team of 11,500 scientists and pharma experts create a strong foundation for innovation. With world-class quality control laboratories at all manufacturing locations, they enable highest standards of quality.

## Executive Summary

Pharmaceutical sectors maintain high standards of hygiene within their manufacturing facilities and storage warehouses. This becomes more crucial when the planned warehouse is environment controlled. This warehouse was planned to enhance its supply network in India and thereby strengthen its Indian distribution network.

## HIGHLIGHTS

- Designed and built to maintain hygiene standards as per industry standards.
- Enabled for WMS integration in future.
- Configured for noise free operations.
- Energy efficient motors to minimize operation cost.
- State of the art temperature-controlled warehouse built in compliance with FDA norms

# Challenges

- **Optimize Dense Storage Space:** A massive 150000 square feet storage space was achieved with high throughput and easy access.
- **Temperature Controlled Warehouse:** Design and built a storage solution with proper air circulation and minimum energy dissipation.
- **MHE Integration:** Design needed to facilitate MHE integration to enable smooth material movement with space for future scalability
- **Operation Safety:** Efficient layout and working instructions for safe man and material flow.
- **Complying with FDA Norms:** Design and build in accordance with FDA norms of promoting public health and safety.



# SOLUTION

- Temperature controlled warehouses designed for minimum energy dissipation with our superior Mobile Pallet Racking system enabling compact storage with high throughput.
- Designed to enable MHE movement with quick turnaround time.
- Remote controlled aisle access mechanism enables high throughput.
- Designed for safe storage of materials in line with FDA norms
- Noise free operation established.



# The Godrej Advantage

- Minimize facility footprint with dense storage and proper air circulation
- Racking solution which enabled 100% access to a variety of SKUs stored.
- Safety elements in racking solution were added to enable safe warehousing practices.
- Minimum project turnaround time from design to execution.

# Benefits

The major highlights of the storage solution proposed and provided were:

- **Mobilepallettracking:**3000 pallet positions
- **Selective Pallet Racking:** 1500 pallet positions
- Designed in compliance with FDA norms to maintain high standards of safety and hygiene.





REFRO - TECH

# Installation Images





Our client, a global healthcare company that specializes in lifesaving medicines and technologies for infusion, transfusion and clinical nutrition required a large distribution warehouse to create a strong supply chain network in India.

# AMBIENT ENVIRONMENT WAREHOUSE

A pharmaceutical warehouse at ambient temperature to store finished goods for creating a strong distribution network.



## About the Company

With an employee base of 40,000+ people worldwide, our client is one of the largest pharmaceutical companies in the world. They have a comprehensive range of product/service offerings from I.V. generic drugs, infusion therapies and clinical nutrition products as well as the devices for administering these products.

## Executive Summary

Pharmaceutical companies have stringent standards and norms in terms of materials storage and handling. We undertook a phenomenal task to conceptualize the finished good warehouse which houses multiple SKUs that caters to an immense and diverse Indian market. The warehouse enlivens the entire supply chain of medical devices & parental nutrition's for the pharma giant.

## HIGHLIGHTS

- Designed Efficient layout for material, equipment and personnel flow.
- Achieved 100% selectivity for a comprehensive lists of SKUs
- Designed the solution as per FDA norms.
- Ensured high standards of hygiene for all SKU storage.
- Designed for efficient utilization of Material handling equipment's



## Challenges

The major challenges faced to design and build a large ambient temperature pharmaceutical warehouse is as follows:

### Multi Commodity SKU Storage: A

comprehensive range of SKUs were to store under a single roof with varying stock movement.

**Compliance With national regulations:** Every step of design planning needs to be in accordance with national regulators to build a pharmaceutical warehouse.

**Spillage of products:** High standards of hygiene needs to be ensured during the installation as per regulations.

**Clean & Sterile:** As per regulatory norms the storage solutions should enable easy cleaning and sterilization.



## The Godrej Advantage

- Configuration to address 100%
- selective Infallible and secured storage solutions
- Storage system with audit trail
- Sharp edge free design
- Powder coated & easy to clean
- Lead free & ROHS compliant



## SOLUTION

- Selective pallet racking system with high cubic space utilization was designed and built.
- All regulatory norms were complied during the design and installation phase to build this large pharmaceutical storage solution
- Sharp-edge free design and power coated components ensured a safe and easy to clean storage system.
- Lead free and ROHS compliance ensure environmental regulatory compliance.

## Benefits

- Selective pallet racking system with **2654** pallet positions
- Designed in accordance with FSSAI norms
- High level of cubic storage achieved with utilization of vertical height
- Project completion and handover within stipulated timelines.
- High standards of hygiene maintained during project installation.





# Installation Images

REFRO - TECH







**MOBISTACK** NEO  
Optimize space with maximum flexibility

## ABOUT THE COMPANY

Established in 1978, Our client has grown over the years from a contract manufacturer of small volume liquid parenteral products, to become one of the largest and fastest growing injectable-focused companies, with a global footprint.

## CUSTOMER NEED

- FG Sample medicines (Tablet, liquid or powder form) are to be stored for 5-7 years in ambient temperature-controlled rooms
- The Various control samples are to be stored in a room of 1060 sq. ft and 10 ft elevation with high volumetric utilization as compared to static shelving
- Customer needs perforation and more aisle space to have more air circulation between two modules
- Customer needed a safe and secure system with easy storage and retrieval of SKUs
- High modularity - Should be easy to dismantle and reassemble/ reconfigure

## CHALLENGES

- Less cubic space storage due to static storage
- All samples stored are of high value and would require a secure storage system in sterile environment
- Samples are to be stored in a controlled temperature environment without any deviation
- Access to samples should be restricted with traceability

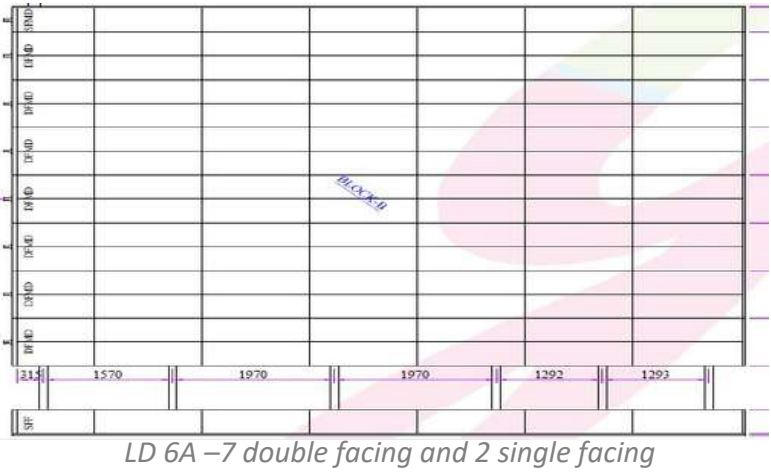
## SOLUTION

- Mobistacksystem covering 7.9mx9mx 2.5 m (LxWxH) was built to cover the available storage space
- 7 Double facing and 2 single facing units were designed to utilize 100% of the available storage space.
- 4400 cu. Ft of storage area has been achieved with a total of 480 loading level with 60 kg UDL.
- perforation in back and side claddings, Top panels, front box cladding, end and rear claddings for ventilation
- Front stoppers provided to prevent falling of SKUs's

5	60kg UDL Level	5	60kg UDL Level	5	60kg UDL Level	5	60kg UDL Level	5	60kg UDL Level	5	60kg UDL Level	5	60kg UDL Level
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1	60kg UDL Level	1	60kg UDL Level	1	60kg UDL Level	1	60kg UDL Level	1	60kg UDL Level	1	60kg UDL Level	1	60kg UDL Level

## HIGHLIGHTS

- High volumetric utilization up to 29ft with lesser footprint achieving 80% more storage compared to regular shelving systems.
- Modular design - flexible integration and reconfiguration to meet customers' evolving needs..
- Reliable and robust system offering 10 years of hassle-free operations.
- perforation for storing in controlled temperature environment
- Maintenance free operations
- 10% Extra rails and extra aisle space provided to have more air circulation



## The Godrej Advantage

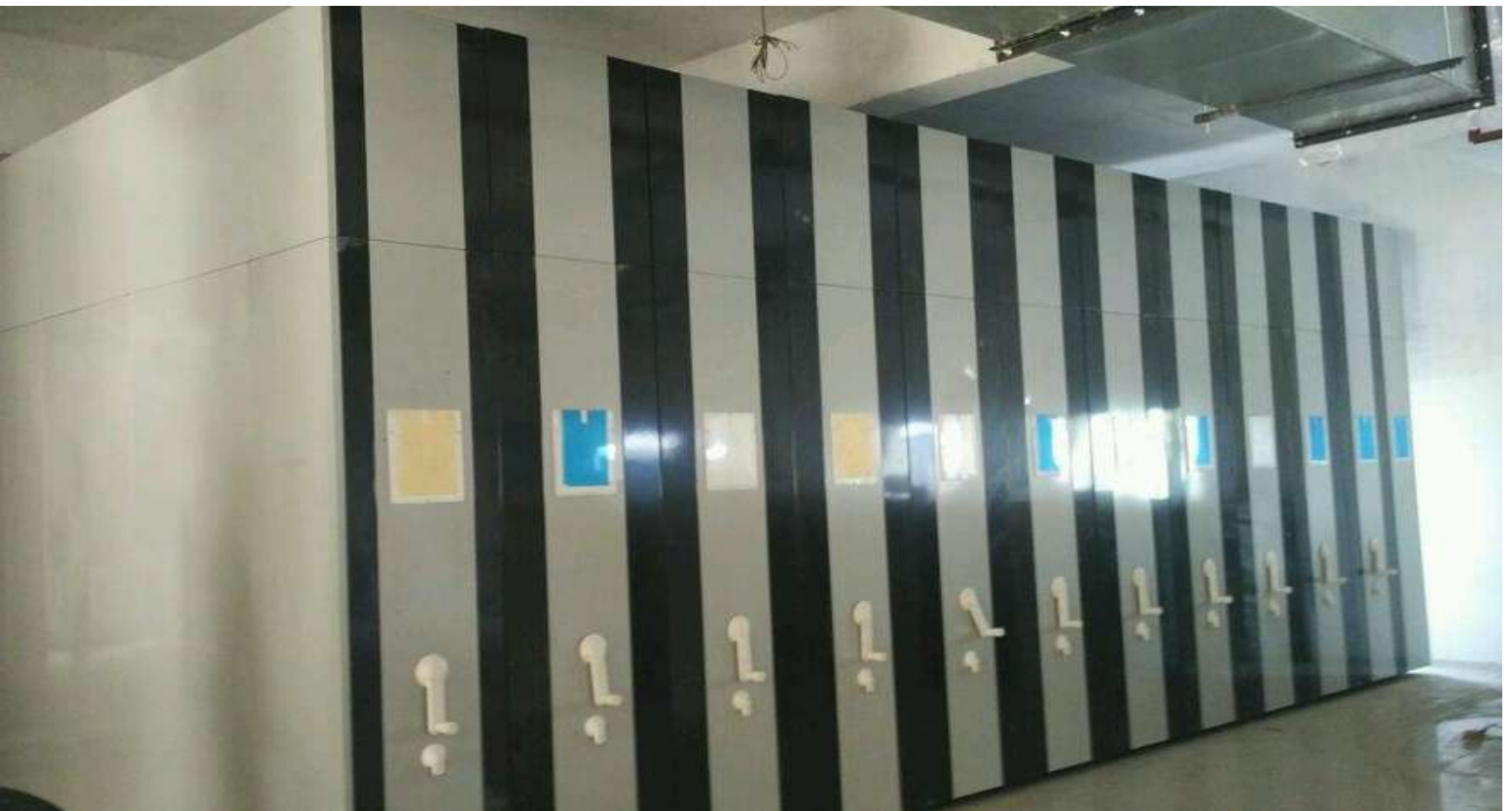
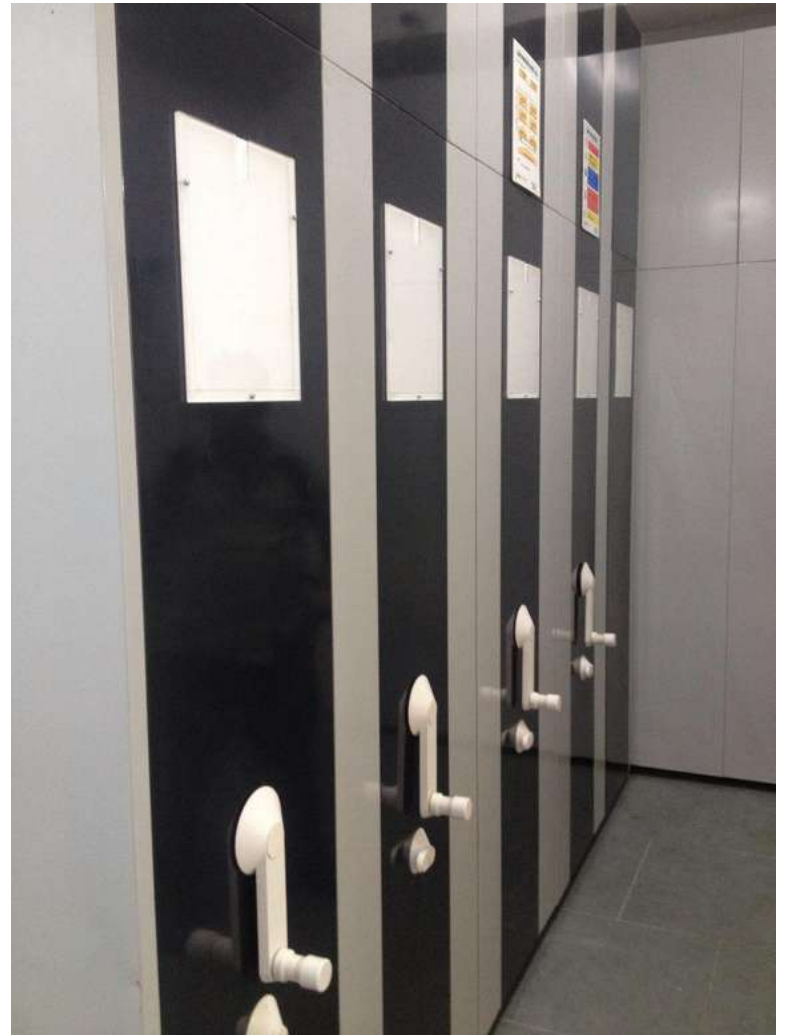
- Wide range of product offering to choose the best suited solution for the client.
- Pan India presence to ensure uninterrupted installation even during pandemic scenario
- Compliance to international design standards
- Quick troubleshooting and lifetime maintenance support
- Eco – friendly material ( lead free powder & ROHS compliant)





# Installation Images

REFRO TECH







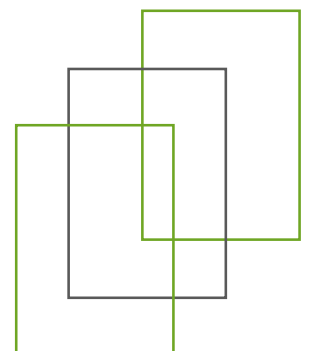
# APPLICATION DOSSIER



## AUTOMOBILE SECTOR

### storage in automobile industry

The automotive industry is one of the most advanced segments with organized and smooth-running parts department, to support productivity. The storage in the automotive industry deals with a wide range of components and parts of various dimensions and weight. The industry focuses on mass production, which requires bulk units of the inventory stored in their factory-attached-warehouses. Proper inventory storage needs are essential to protect the parts from contamination and damage. Our unique solution supports automotive manufacturers by utilizing available cubic space and provide various storage types to enhance the well-planned area.







# Application in Passenger Vehicle SPD

## REFROs & TECH

- Storage system to accommodate multi-variety SKUs
- High cubic space utilization
- Inventory count & WMS integration
- Discrete storage for picking
- Minimize picking time
- Identification and traceability
- Auto replenishment
- Integrated sprinkler design



## Storage Applications

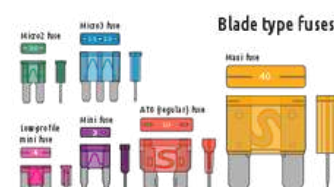
### Small Parts Storage in Auto spare parts distribution



Gaskets & Fasteners



BRASS JOINTS



ELECTRICAL COMPONENTS



BINS

### Medium Parts Storage in Auto spare parts distribution



KITTED BOXES



HEAD LIGHTS



RADIATORS



SIDE MIRRORS



Ca r t o n s

### Packaging Material Storage in Auto spare parts distribution



PACKAGING ROLLS



CARTONS



LABELS



KITTING BOX



PALLETS-COVERS

## Wind Shield Storage



WIND SHIELD

## Hood & Body Storage



HOOD



FENDER



DOOR

## Muffler Storage



MUFFLER

## Long Parts Storage



RADIATOR SUPPORTS



BUMPERS



TRUNK LIDS

## Tyre Storage



TYRE

## Palletized Parts Storage



WHEEL HUB



ENGINE BLOCK

## Dangerous Goods Storage



ENGINE



BATTERY



PAINTS & AEROSOL



AIRBAG

Solution for  
Automobile  
Storage

Our solution enable automobile manufacturers to efficiently utilize available space for parts storage and retrieval.







PALLETIZED PARTS STORAGE



TYRE STORAGE



BIN PARTS STORAGE



BODY FRAME STORAGE



MUFFLERS STORAGE



WINDSHIELD STORAGE



BODY PARTS STORAGE



PALLETIZED PARTS STORAGE



LONG PARTS STORAGE

# Automobile Storage Solutions

Various factors including warehouse manpower, throughput, production capacity etc are considered before designing a proper automobile spare storage facility.







## Shuttle Pallet Racking to cater 50,000+ Soft Drink Retail Outlets

### Case Background

Our client is a consumer centric manufacturer, sales & distribution organization that markets the products & brands of one of the household name in soft drinks and non-alcoholic beverages.

Its sales jurisdiction is spread over approximately 80% area of West Bengal, India. The client's passion of refreshing the customer with its value proposition has made it an authorised bottler for one of the world's best beverage companies.

With this passion of providing refreshment, the organization today caters to millions of customer everyday via 50,000 retail outlets in eastern India. The ever-growing reputation and consumer driven approach of our client inspired them to further strengthen their distribution muscle with the manufacturing attached state-of-the-art finished goods warehouse which can serve their ever growing customer base.

### Challenges

Conceptualizing a warehouse which will become the distribution hub for 50,000+ retail outlets required correct understanding of the operational and environmental parameters. The warehouse was located in Eastern India which falls under Seismic Zone III.

This warehouse being the hub for entire distribution network needed to be equipped and designed with safe warehousing practices. After having done the detailed study of the client's need, we proposed an earthquake resistant pallet racking system design.

The major intra-logistics operational parameters which needed to be addressed while envisioning the facility were:

- Earthquake resistant racking system
- Maximum Cubic Space Utilization
- Organized Material Flow
- High throughput to meet market demand



- Adherence to Health & Warehousing Safety Norms
- Adherence to Environmental Norms

## Solution

The major highlights of the storage solution proposed and provided by us are as:

### Products Installed & Capacity

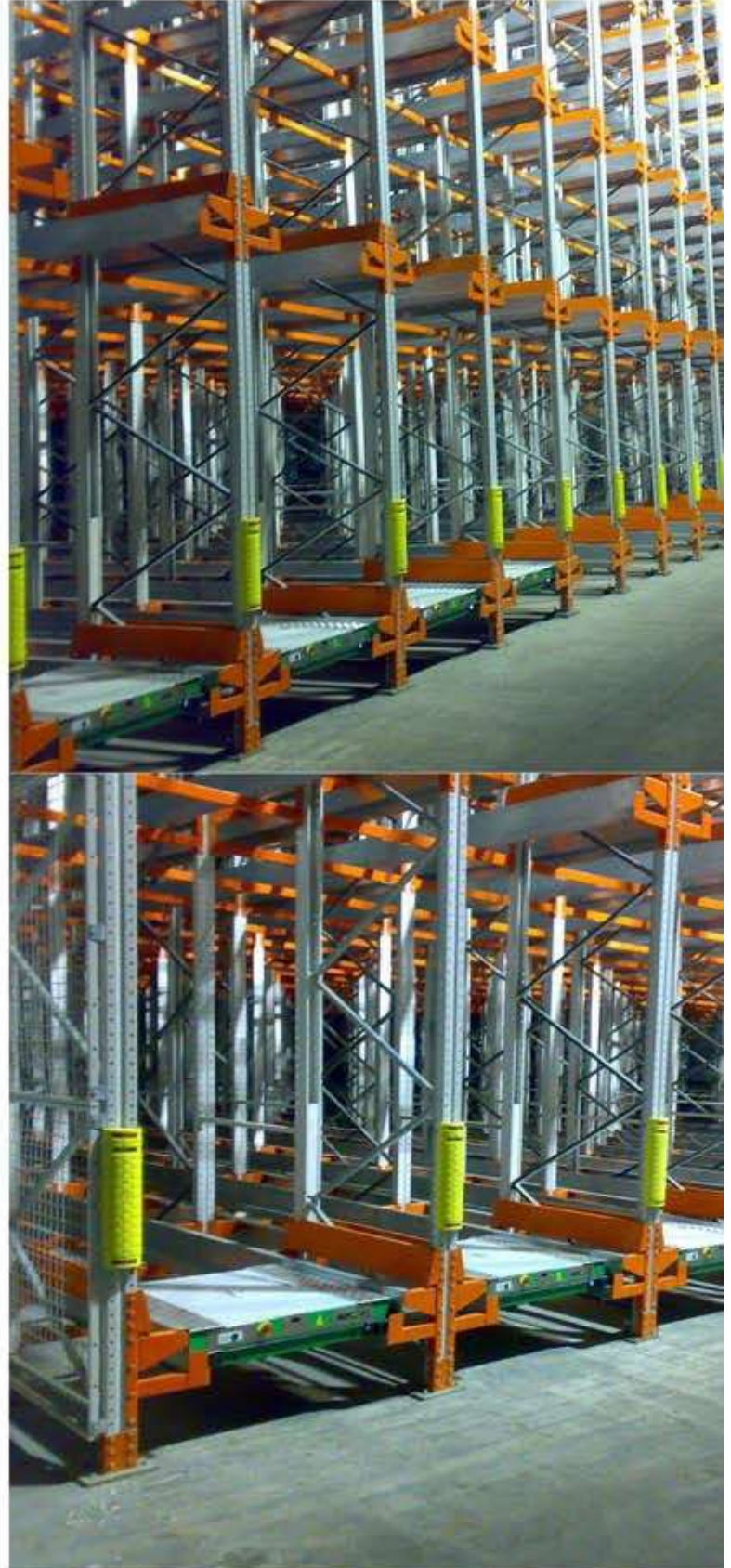
1. Shuttle Pallet Racking  
13884 Pallet Positions

## Key Highlights of the Solution

- Fully utilizing valuable vertical space with storage up to height of 10.3 meters
- Efficient layout for material, equipment and personnel flow.
- Material Movement according to First In First Out (FIFO) principle
- SKU & Batch wise access for the storage area
- High throughput to cater to ever-growing market demand
- Side Mesh Guards to enhance safety
- Front Safety Rails to prevent MHE from hitting the racking system

## Godrej Storage Solutions Advantage

- Seismic resistant design of shuttle pallet racking system
- Optimum space utilization in the warehouse
- Better illumination in the warehouse for efficient operation
- RoHS compliant pallet racking system, hence , environment friendly
- Pallet racking system designed as per International Guidelines



For More Information, please contact:

## **GODREJ STORAGE SOLUTIONS**

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Tel: 1800-419-7060 | Email : [storage@godrej.com](mailto:storage@godrej.com)

100-year-old German premium car & bike manufacturer started its operations in India during 2007 by inaugurating its manufacturing plant in Chennai. The manufacturing plant has a capacity to produce more than 11,000 units in a year. The group has continuously increased the number of its locally made car models up to eight.

# CKD Parts Storage Distribution Center

Luxury car maker revamping their CKD parts storage distribution centre for eight new car models.



## About the Company

Our client is the world's leading manufacturer of premium automobiles and motorcycles and provider of premium financial and mobility services. They have a workforce of approximately 1,25,000 employees worldwide. The company firmly believes in maintaining ecological and social sustainability throughout the value chain.

## Executive Summary

New product launches and regulatory environment in India demanded a shift in supply chain strategy. To improve on waiting periods, service levels & other customer retention parameters the group decided to realign its operations at their pivotal CKD parts storage distribution center in Chennai. Due to increase in demand and newer models, the group wanted to revamp their existing storage systems.

## HIGHLIGHTS

- Integrated 2 vertical reciprocating conveyors (VRCs) and 4 loading gates for voluminous transfers and efficient dispatch operations
- Provided Mesh cladding to prevent SKU from falling.
- Storage system was furnished with fire fighting elements - sprinklers, smoke detectors and hose reels.
- Ideated 4 staircases for human access to improve throughput.



## Challenges

The group's Chennai spare parts distribution center is key to the entire supply chain and hence challenges in existing operations could have impacted the entire supply chain. The major challenges that we faced during the solution design were:

- **Strict Execution Timelines:** Solution design was required to be completed within 4 weeks.
- **Maximum Space Utilization:** The storage space to be revamped was around 23,000 sq. feet.
- **Execution without disturbing ongoing operations:** The project was to be executed in a functional warehouse without disturbing the existing operation.
- **Integration Elements:** Storage system should be compatible with conveyors and fire safety systems.



## The Godrej Advantage

- Complaint with EN standards
- Shorter turnaround time to finalize solution
- Efficient co-ordination in a multi-vendor environment.
- ROHS compliant storage system
- Solution delivered within a 4 week timeline.



## SOLUTION

- 100% SKU selectivity was designed and achieved to ensure a high level of warehouse throughput.
- Best in class storage system was designed in accordance with EN standards as per customers' international requirements.
- Efficiently coordinated with multiple vendors to integrate smoke detectors, fire alarms and other safety systems.
- Upgraded existing racks into new heavy duty shelving system without disturbing ongoing operations.
- Integrated 2 vertical reciprocating conveyors and 4 loading gates for voluminous transfer and efficient dispatch operations.

## Benefits

The major highlights of the storage solution proposed and provided are:

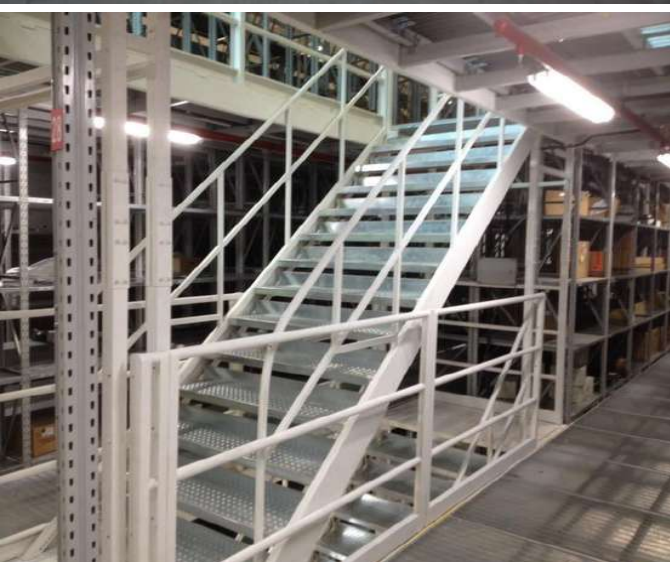
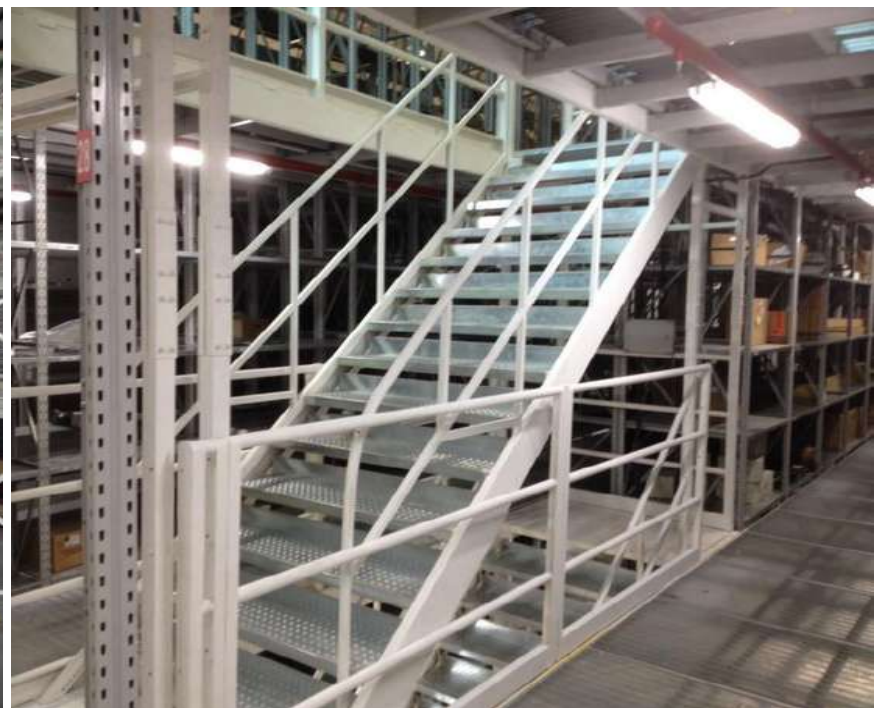
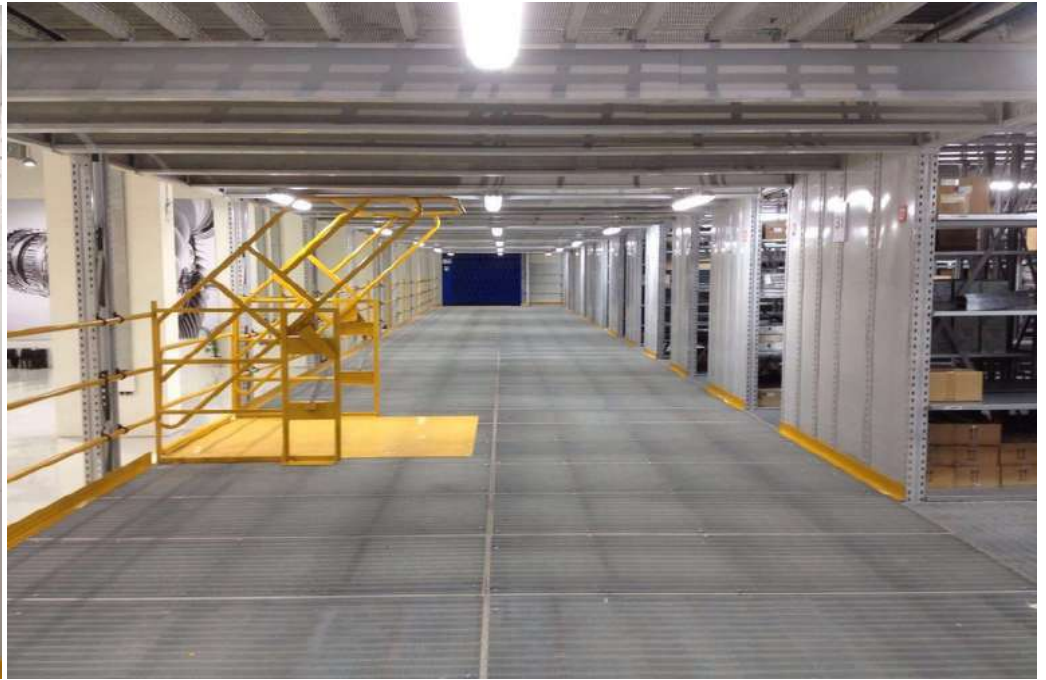
- Multitier shelving system with 3219 picking positions.
- Installed without disrupting existing operations.

Better integration with fire safety systems.





# Installation Images

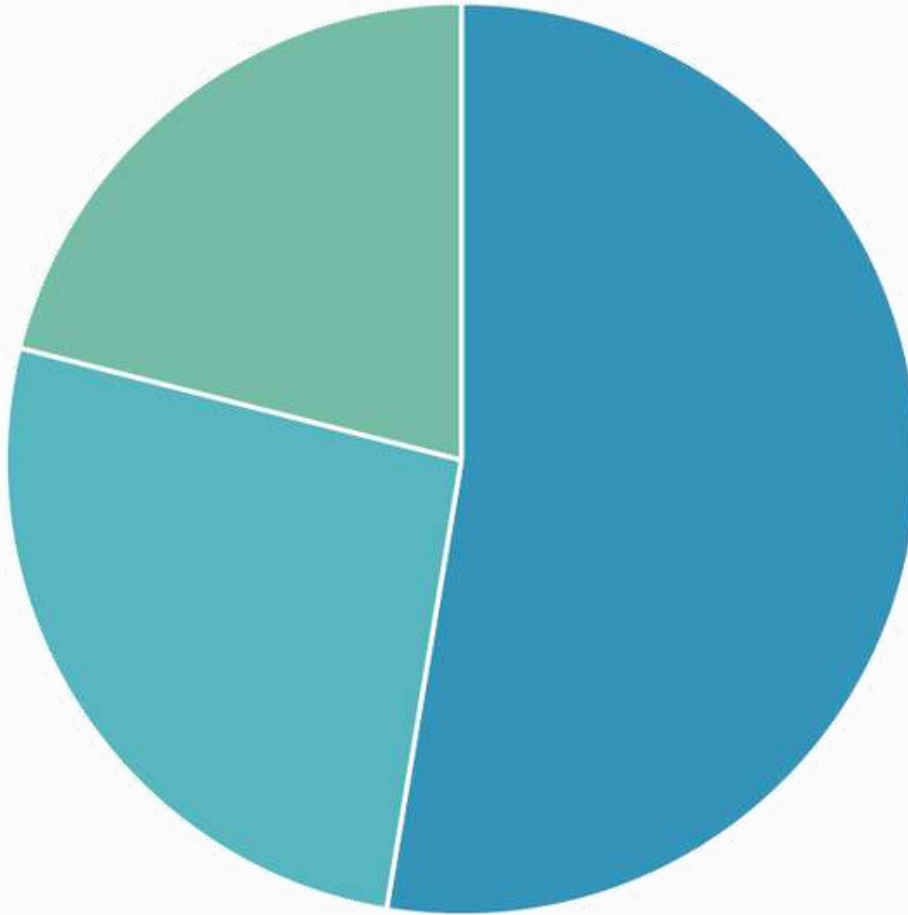




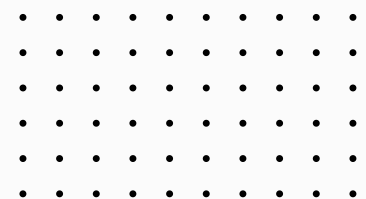


REFRO - TECH

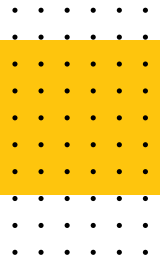
# COMPANY CHART



- Completed Projects
- Satisfied Clients
- Working Hours



# BUSINESS OVERVIEW



## Core Values

Our core values are what motivate and drive us. They can serve as our North Star, which can be useful. Our inspiration for excellence. They support us as we make crucial decisions and manage challenging situations.



What is most essential to us is reflected in our core values. They are the moral standards we live by—our own particular code of ethics. Values are not selected. They are as distinctive as our fingerprints and fundamental to who we are.





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## A FEW CLIENTS



# CONTACT INFORMATION



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Warehousing & Supermarket Solutions

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