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## Rack Clad Warehouse Construction in a Factory at Surat, Gujarat

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### ABSTRACT:

The world's population is increasing day by day and their daily needs are also increasing. Same as the increase in e-commerce companies in India. Currently, e-commerce companies are storing our inventory material in the warehouses due to which there is an increment in warehouse construction. Warehouse construction is constructed in an sqft area but nowadays height is playing a crucial role in warehouse construction. Nowadays we are playing in Cubic feet in place of square feet area warehouse construction, or we can say we are using the volume in place of area to construct the warehouse. Earlier up to 10-meter height warehouses were used to store the material and pallets were stored one above the other, but now we can store our material up to 40 mtr height with the help of automation.

### INTRODUCTION:

Rack clad warehouse is a facility to store the materials. These Structures are basically used the racks as the foundation of the building in place of separate foundation like Pre-Engineered Building. These racks supported structure the cost of construction as well as execution time. Earlier the warehouse are constructed with the GI Sheets fixed on the main frames. These conventional warehouses use the storage system according to their requirements. Rack clad warehouses are heavy duty shelving units to bear the heavy loads, and these are made of steel with high strength. Raw material finished goods and other material also can be stored on the same on height.



Demo Pic Only

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## Literature Review:

Clad Rack warehouses are engineered in such a manner that it is solution for every type, weight, height, size & situation. It requires a smart construction with the help of roof & walls.

Some of the components are given below:-

1. Civil Flooring (As per load Requirements)
2. Racks
3. Purlins
4. Girts
5. Roof Sheets
6. Wall Cladding
7. Roof Truss
8. Canopy
9. Docks
10. Gutter (Eave Gutters)
11. Fire Hydrant
12. Solar

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## Methodology:

There are below method to construct a warehouse: -

1. Fabricated Warehouse with simple frame and Sheets
2. Pre-Engineered Building Warehouse
3. Rack Clad Warehouse

Rack Clad Warehouse construction: -

1. Flooring to be done before starting the racking work based on the design load of racks, soil conditions.
2. Racks installation to be done over the floor including the seismic bracing.
3. Truss to be made over top to provide the slope in roof.
4. Hydrant system, Roof lighting fixing.
5. Purling & Girts to be fixed for roof Sheeting & Wall Cladding.
6. Roof Sheeting fixing & wall cladding fixing.
7. Windows, Canopy, Gutter & Flashing, Ventilation system fixing.



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**Benefits of Rack Clad Warehouse: -**

There are below benefits of rack clad warehouse: -

1. Heavy duty items can be stored easily.
2. Large numbers of uprights transfer the load to floor.
3. Highly adoptable.
4. For Expansion, No need extra supports.
5. Weight of structure is light.
6. Easy & Quick Construction
7. Cost optimization
8. Less Civil work requirements
9. Durability
10. Automated System

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**CONCLUSION AND FUTURE DEVELOPMENT:**

In conclusion, I would say that clad rack warehouses are the modern solution for businesses that seek efficient storage solutions. The clad racks maximize the use of available surface area and avoid the wastage of space. The cost-effectiveness, high storage density, and modular designs are the integral part of this storage system which makes it attractive. Furthermore, versatility, expansion within the limited area, and ease of reconfiguration are something that makes it a flexible solution for business. It enhances the profitability of the company with efficient operations. Overall, clad rack warehouse is a complete solution for expanding businesses to gain more storage area and a flexible storage solution.

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**REFERENCE:**

N/A

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