

Selecting the Right Storage Medium

Today's distribution centres must hold thousands of products to meet the demands and expectations of customers. As a result, selecting correct storage mediums has become vital for both operational efficiency and space utilization. The following paper highlights different storage solutions that can be employed for palletized goods, full & split case goods as well as long products.

Solution: As distribution costs continue to escalate and competition intensifies, companies must focus on matching the right storage mediums to their inventory profile. All too often, firms employ solutions they believe are practical, simple and require low capital investment at the expense of productivity, space utilization and long term profitability.

Selecting a storage medium is dependent on many variables, such as;

- Receiving quantities & frequency
- The method/s in which goods are received
- The period products remain in a facility before being shipped
- Building, land & infrastructure constraints
- Unique product factors, such as size, weight, shelf life, classifications & temperature
- Materials handling equipment
- Service level agreements
- Customer demand

The specific purpose of an individual distribution centre will dictate many of the above factors along with the characteristics of the building chosen. Pallets are by far the most common way goods are received and dispatched. As such, there are vast arrays of storage mediums available on the market.

Case handling and storage has always been a requirement for many companies, but recent changes in consumer behavior have profoundly increased the number of cases being handled across industries and their supply chains. The demand for greater variety and more frequent deliveries in smaller quantities has forced companies to rethink their storage philosophies.

It's not uncommon to use a large number of different storage mediums within a single facility to derive the best use of space and labor. For example, a spare parts operation typically needs selective pallet racking, high level narrow aisle shelving, long span shelving, bin shelving, carousels and even conveyors and sortation equipment.

Storage mediums also tend to be industry specific. High rise narrow aisle shelving is very common in the apparel industry, where a lot of product is held but quantities are small. Double deep racking is common in cold storage, as it provides a tradeoff between selectivity and density, while block stacking is common in beverage distribution.

The below table is not exhaustive, however, it does provide a list of typical storage challenges along with different mediums that can be employed.

TASK	STORAGE MEDIUMS
Full Pallet Storage (low quantity of pallets per SKU)	<ul style="list-style-type: none"> • Selective Racking • Narrow Aisle Racking • Double Deep Racking • Mobile Pallet Racking
Full Pallet Storage (large quantity of pallets per SKU)	<ul style="list-style-type: none"> • Drive In Racking • Pushback Racking • Flow Through Racking • Rack Entry Satellite Systems • Block Stacking
Carton / Case Picking	<ul style="list-style-type: none"> • Pick from Pallet • Long Span Shelving • Mezzanine Floor Shelving • Bin Shelving
Unit Picking / Each Picking	<ul style="list-style-type: none"> • Long Span Shelving • Carton Flow • Vertical Carousel • Horizontal Carousel • Mobile Storage Units • Bin Shelving • A Frame (dispensing unit)
Long Products (full & split packs)	<ul style="list-style-type: none"> • Canti-Lever Racking • Pigeon Hole Racking • Carpet Racks • Vertical A Frames • Industrial Paternosters • Custom Racks

There are several benefits and limitations with each of the storage mediums listed above that need to be accessed and understood prior to selecting one or more for your operation. Details on various products' features and benefits are available on storage vendor's websites and in brochures.

The simplest way to assess the efficiency of your current storage medium(s) is to complete an audit of your facility. Audits are useful for revealing a host of storage problems. For example, pallet openings with only a few cartons stored on each pallet, or full pallets that have been received, but are only filling half a vertical opening. Both indicate poor space utilization. Analysis of recent sales activity by product can target items that should be sold off or relocated to a different location and/or storage medium. This allows a faster moving item to take its place.

If a contemporary warehouse management system is employed, a large amount of the aforementioned issues will be managed effectively. For those not employing such systems, audits should be scheduled regularly to ensure storage optimization and operational performance.