

Pallet Racking Selection Guide

Range Overview

Dexion pallet handling systems comparison chart.

Conceptual layout	Storage capacity (pallet positions)	Pallets high	Floor area (m x m)	Total area (sqm)	Average floor area by pallet position (sqm)	Storage product area	Area	Height	Cube	% of floor space covered by storage	Ceiling height (m)	Building volume (cbm)	Average building volume/ pallet positions (cbm)	% of building cube that is product	Average locations used in operations	% of pallets immediately accessible	Stock rotation	Price relationship guide (storage only)
Selective racking	2000	5	62.9 x 27.0	1698	0.85	53.9 x 11.9	641.4	7.45	4778.5	38%	8	13586	6.79	35%	95%	100%	Good	1
Double deep racking	2040	5	52.2 x 23.5	1227	0.60	43.1 x 14.4	619.5	7.75	4801.1	51%	9	11040	5.41	43%	88%	50%	Fair	1
Drive-in racking	2080	5	50.3 x 23.3	1169	0.56	44.9 x 17.5	785.5	8.00	6283.9	67%	8.2	9590	4.61	66%	75%	6%	Fair	2
Narrow aisle racking	2176	8	55.8 x 17.0	949	0.44	45.8 x 9.5	435.4	12.35	5377.0	46%	13	12338	5.67	44%	95%	100%	Good	1
Push back racking	2120	5	48.7 x 23.0	1119	0.53	X	484.0	8.80	4259.2	43%	9	10071	4.75	42%	80%	28%	Fair	3
Pallet flow racking	2080	5	44.1 x 29.0	1279	0.61	35.1 x 20.0	702.0	8.75	6142.5	55%	9.5	12150	5.84	51%	90%	13%	Fair	4
Mobile racking	2000	5	67.0 x 16.1	1079	0.54	54.0 x 12.5	675.0	7.80	5265.0	63%	8	8630	4.31	61%	98%	100%	Good	5
ASS open face single deep	2048	16	54.0 x 8.9	481	0.23	46.3 x 4.8	222.4	27.20	6048.8	46%	28	13457	6.57	45%	98%	100%	Good	3
ASS open face double deep	2048	16	54.0 x 7.0	378	0.18	46.3 x 4.8	222.4	27.20	6048.8	59%	28	10584	5.17	57%	95%	50%	Fair	3
ASS closed faced double deep	2048	16	54.0 x 6.9	373	0.18	43.1 x 4.8	205.3	29.20	5994.7	55%	30	11178	5.46	54%	95%	50%	Fair	3
ASS curve crane	2080	16	57.5 x 8.9	512	0.25	46.3 x 4.8	222.4	27.20	6048.8	43%	28	14329	6.89	42%	98%	100%	Good	3
Manual satellite system	2000	5	37.0 x 38.0	1406	0.70	28.3 x 24.4	690.0	9.00	6209.6	49%	9.5	13357	6.68	46%	80%	10%	Poor	6
Block stacking	2052	3	47.0 x 35.6	1673	0.82	X	910.0	4.05	3685.5	54%	4.5	7529	3.67	49%	70%	9%	Poor	0
Stackable containers	2016	4	62.0 x 32.5	2015	1.00	X	1129.0	6.80	7676.9	56%	7	14105	7.00	54%	75%	6%	Poor	1.5

Note: The data above is set as a guide only and may vary greatly from actual application.

Dexion Keylock pallet handling systems.

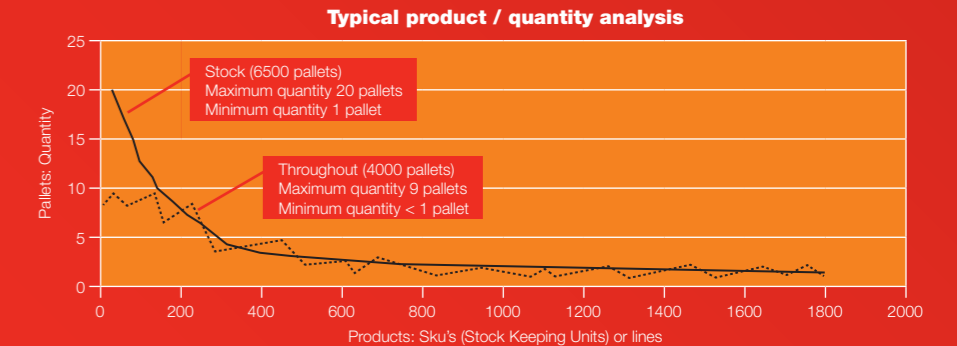
Dexion Keylock operates in conjunction with several key components. These are:

- **Products – your boxes, packages, sacks, bottles, containers etc.**
- **People – your fork lift truck drivers, pickers, packers, operators, managers.**
- **Places – your warehouse, floor, walls, columns, lighting, sprinklers etc.**
- **Prime Movers – fork lift trucks, cranes, handling devices and attachments.**
- **Pallets – wooden, plastic, cardboard in every shape and size.**
- **Procedures – the storage, handling, picking, despatch processes.**

All of these variable key components impact the environment where pallet storage systems form part or the whole of a storage solution. The storage and handling systems that are available are only limited by the imagination of the systems designer.

The table opposite compares the handling, space and density of each pallet storage system. The full range of Dexion Keylock systems are detailed in this book. Your Dexion representative will help assess your needs and work with you to develop a solution that will meet your specific requirements.

Key operating needs must be compared to the product profile that exists today within your business. The quickest and most time efficient method to review your products is to use a P-Q (Product/Quantity) Graph. Today's data will change in the future and this management tool enables you to prepare for this.

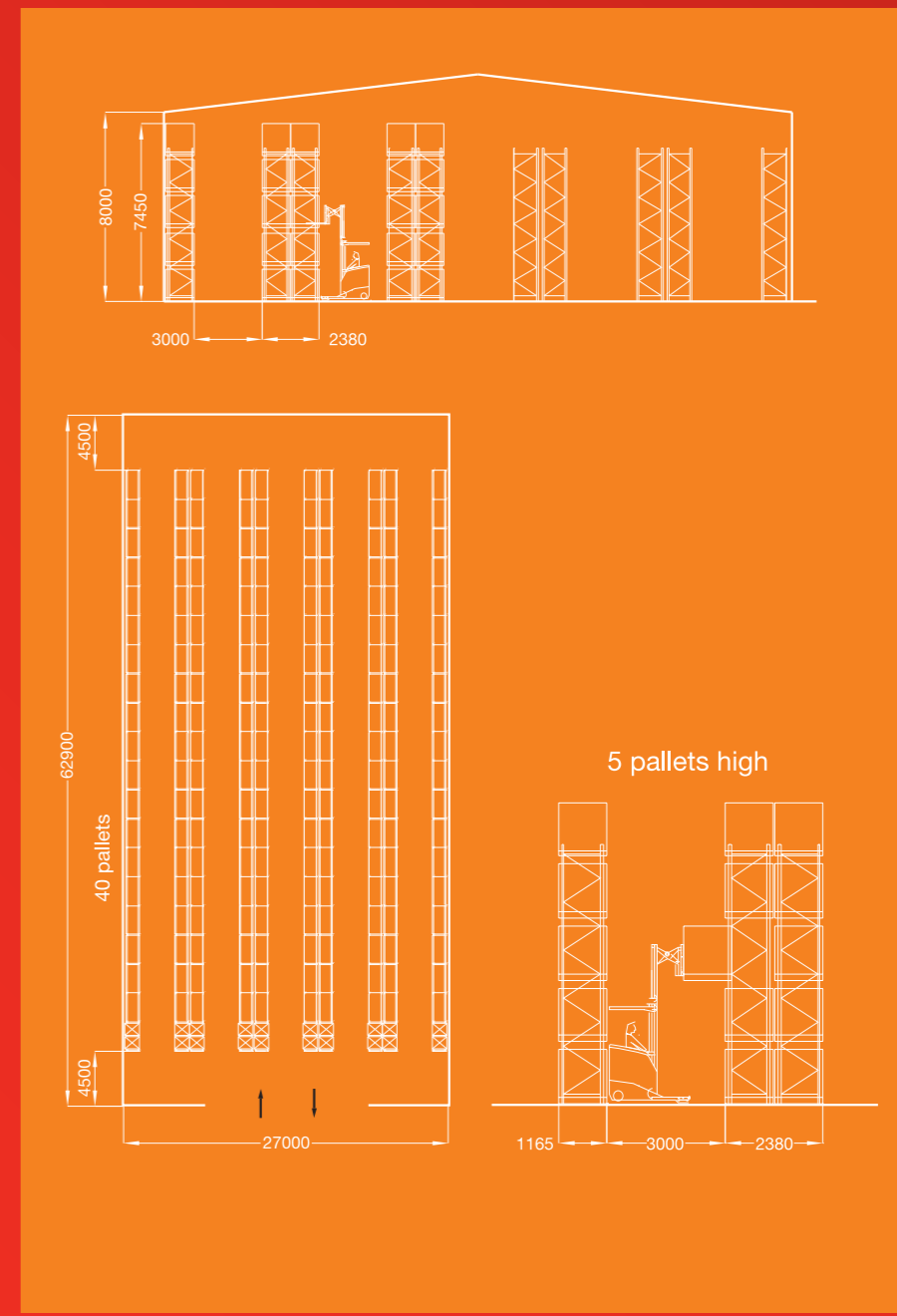




High volumes
many skus.

Selective racking.

The simplest of all pallet rack storage systems provides access to every pallet. Low cost equipment can be used offering simple adjustability and adaptability. Storage density is low with only 35% floor space used and only 25% cubic space used.



- Advantages.**
- Individual access to all pallets to full height of warehouse.
 - Simple stock rotation achieved.
 - Easy beam adjustment accommodates variable pallet heights.
 - Compatible with many handling equipment styles.
 - Conventional tolerance for floors when used to 10m high.
 - Lower level pallets can be located on the floor (picking pallets).
 - Accessories available can accommodate every unit load type.
 - Economical shelving beams can be added for low level picking.
 - High average locations used 95%, for 100% accessibility, good stock rotation.

Selective pallet racking example for 2000 pallets.

Pallet and load size: 1165mm (entry) x 1165mm x 1350mm (H)

Floor area: 62.9m x 27m = 1698 sqm

Total building volume: 13584 cbm (8m high)

Average floor area/pallet position: 1698 sqm/2000 pallets = 0.85 sqm/pallet position

Average building volume/pallet position: 13584 cbm/2000 pallets = 6.79 cbm/pallet



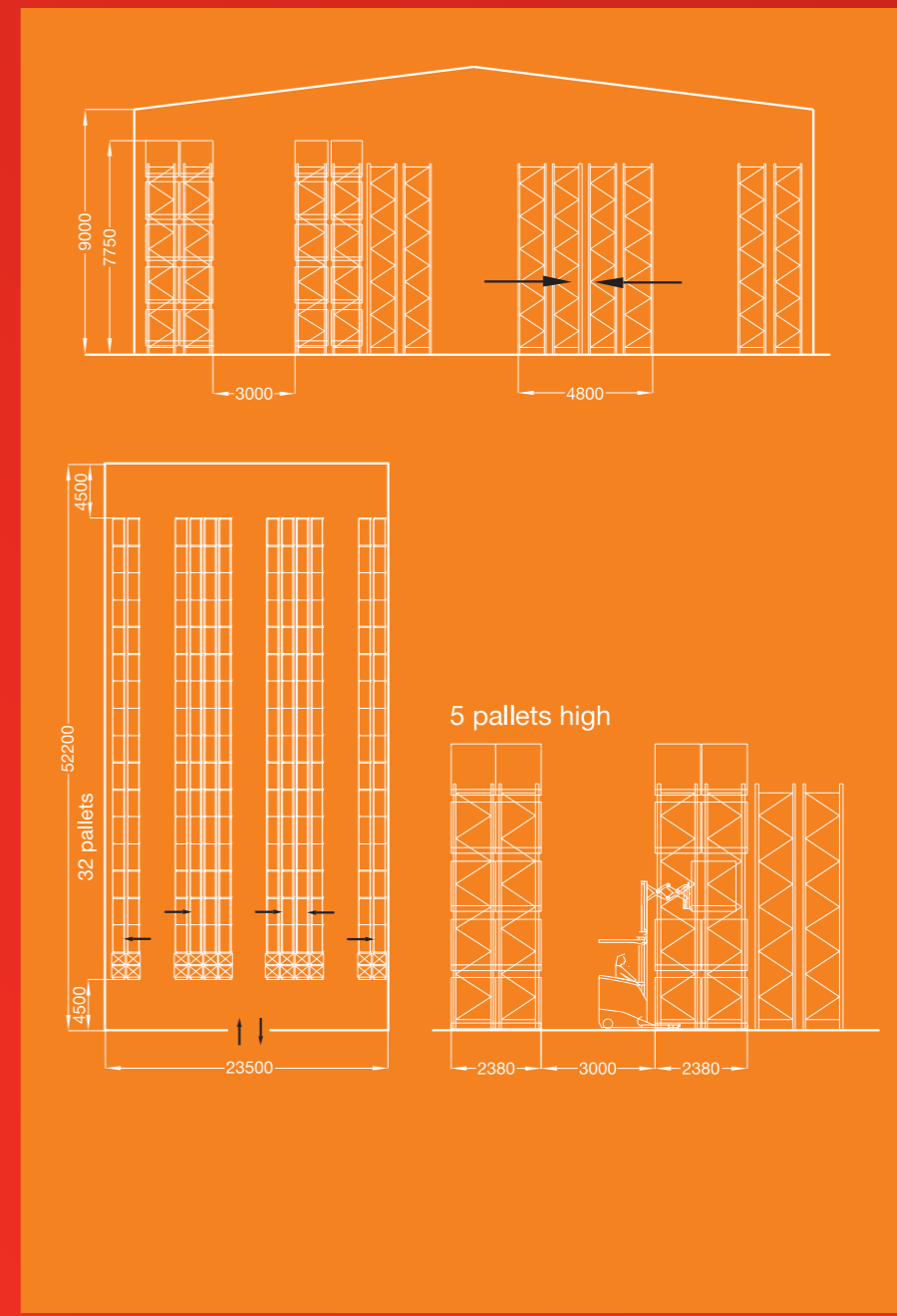
Double deep racking.

Double deep racking stores two pallets deep in a single entry rack or four pallets deep in a double entry rack. This system requires the use of a special reach fork lift truck with either dual pantograph or sliding fork attachments.

Double deep racking improves storage density with fewer aisles and more storage locations. This reduces the aisle to rack ratio but also reduces selectivity (FIFO). Truck lift heights are limited by load, to about 9 metres.

The upper levels can be fitted with front to back guide rails to assist the operator to locate and place a pallet at height. The bottom beam must be sufficiently clear of the ground to allow the reach trucks legs to pass under it.

High volumes few skus.



- Advantages.**
- Storage density increased as rack aisle ratio changes from selective racking.
 - 50% immediate accessibility with reasonable stock rotation.
 - Good use of all available locations, typically above 90%.
 - Safe and secure handling with the bottom pallet usually off ground.
 - Ability to use double deep handling equipment for other tasks.
 - Best used when each SKU has several pallets.

Double deep example for 2040 pallets.

Pallet and load size: 1165mm (entry) x 1165mm x 1350mm (H)

Floor area: 52.2m x 23.5m = 1225 sqm

Total building volume: 11028 cbm (9m high)

Average floor area/pallet position: 1225 sqm/2040 pallets = 0.60 sqm/pallet position

Average building volume/pallet position: 11028 cbm/2040 pallets = 5.41 cbm/pallet



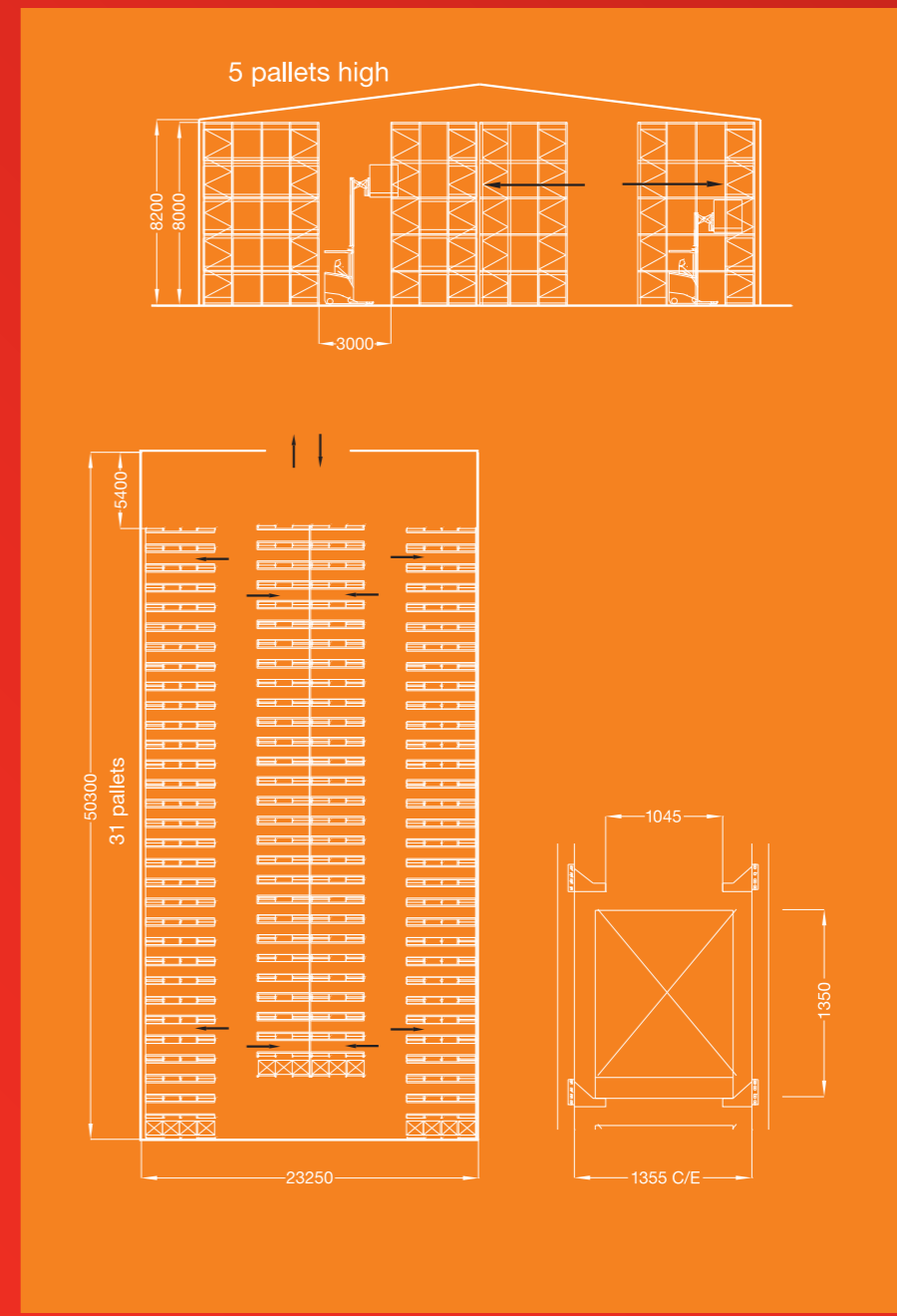
High density
low capital.

Drive-in racking.

Forklift trucks drive into lanes on racking specially built to provide support to the pallet along the pallet sides. Stacking often to 10 metres high and 4 or 5 but occasionally even 10 pallets deep.

This system can provide very dense storage capacity, often low in access and rotation of products. As the truck enters the racking, special precautions apply to ensure the compatibility of design between the truck, pallet and load and the racking. Flat floors are advantageous.

Usually the rack design incorporates a stability structure at the rear of the rack and therefore drive in indicates single access from one side. Drive thru requires this same stability to be provided by a variation in design.



- Advantages.**
- Very dense storage, ideal for few SKU's with high pallet quantities.
 - Prevents product crushing, and offers damage free storage.
 - Floor single or double stacked pallets always accessible.
 - Low capital costs using conventional handling equipment.

Drive-in racking example for 2080 pallets.

Pallet and load size:
1165mm (entry) x 1165mm x 1350mm (H)

Floor area:
50.3m x 23.25m = 1170 sqm

Total building volume:
9590 cbm (8m high)

Average floor area/
pallet position:
1170 sqm/2080 pallets =
0.56 sqm/pallet position

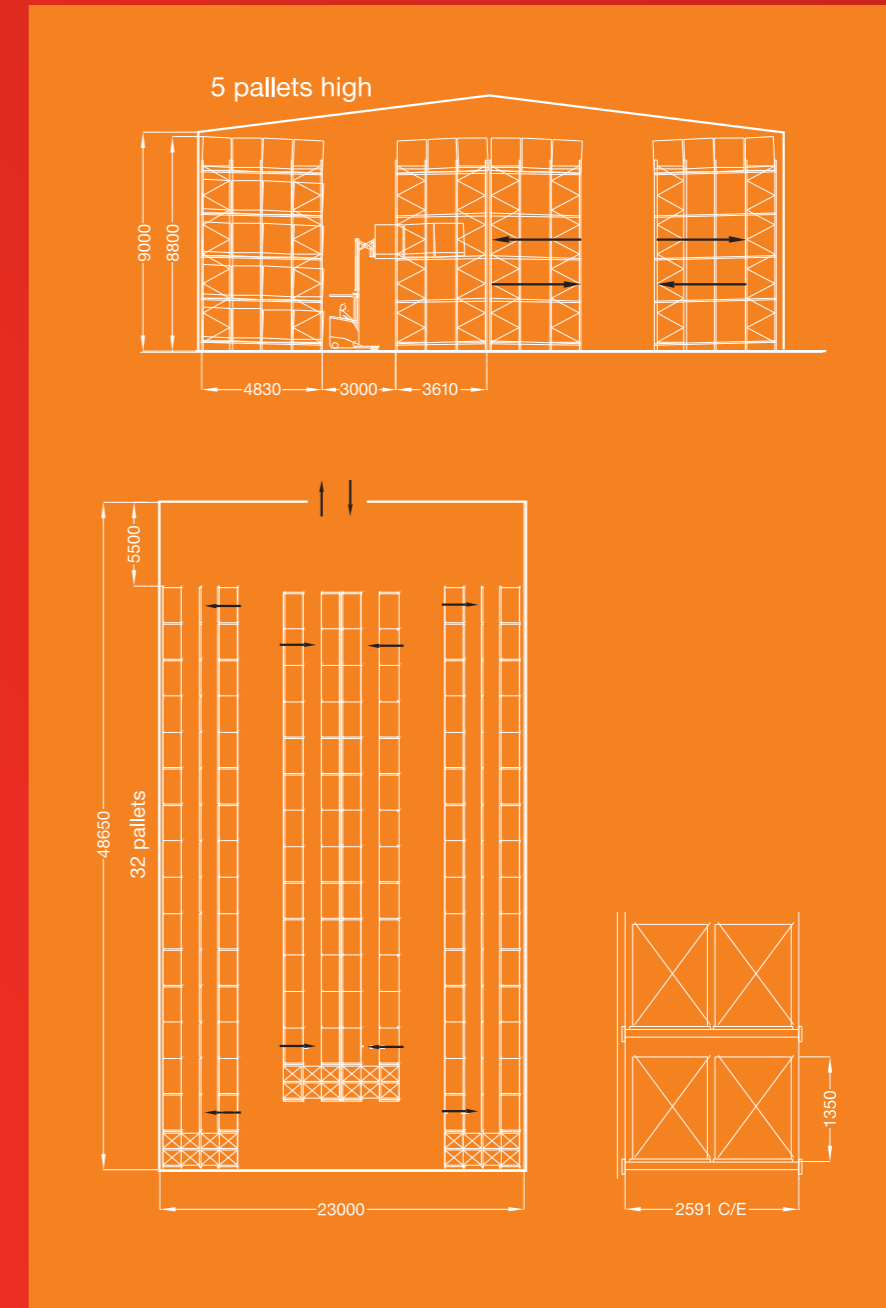
Average building volume/
pallet position:
9590 cbm/2080 pallets =
4.61 cbm/pallet



Push back racking.

Conventional fork lift trucks load pallets into inclined magazines for storage. Once loaded, the pallets return automatically to the front of the rack by gravity. By retrieving from the front of the rack, pallets are stored on a FILO basis.

The system offers safe and dense storage for 2, 3 and 4 deep pallet storage. Typically up to 5 pallets high, the safety and relatively fast accessing of the products is achieved as the FLT does not enter the racking.



- Advantages.**
- Pick face remains constantly full.
 - A low damage environment, with truck outside racking always.
 - High storage density with speedy accessibility, but FILO.
 - Conventional handling equipment can be used.
 - Pallet quality may not be so critical as carts or cradles are always used.

Push back rack example for 2120 pallets.

Pallet and load size:
1165mm (entry) x 1165mm x 1350mm (H)

Floor area:
48.65m x 23m = 1119 sqm

Total building volume:
10071 cbm (9m high)

Average floor area/pallet position:
1119 sqm/2120 pallets = 0.53 sqm/pallet position

Average building volume/pallet position:
10071 cbm/2120 pallets = 4.75 cbm/pallet