



Conventional Pallet Racking System



GOLD WIND ENGINEERING (S) PTE LTD

Industrial
STORAGE SYSTEMS
“Smart Space Smart Storage”



Key Advantages

- Goods can be easily retrieved as each pallet can be accessed without shifting other goods
- Total Stock Control Since each storage locations holds a single pallet
- Maximum adaptability to any load type, both in weights and volumes

Selective Pallet Racking System is a kind of steel storage rack arranged in either single or back-to-back (double) rows.

Each of the rows offers a bay or number of bays in the down aisle direction. Pallets are generally positioned side-by-side in the down-aisle direction at each level of the bay.



SELECTIVE PALLET RACKING SYSTEM



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Measurements and Clearances Aisle

The forklift type and model must be determined to define the minimum open aisle width between loads
This information can be found in the technical specifications of each forklift.

As a guideline 1,200 x 800 mm pallets are handle sidewise by their 800mm edge using

Minimum Clearances:

Stacker: 2,200 to 2,300 mm

Counter-Balanced forklift:
3,200 to 3500 mm

Reach Truck 2,600 to 2,900

VNA Truck 1,800 to 2,100

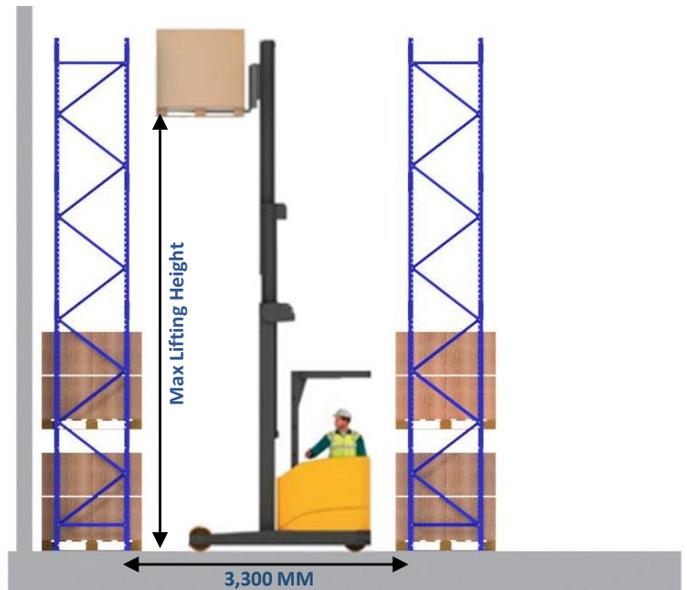
Automation Stacker Crane
1,700 to 1,900 mm



Reach height and clearance

The clearance height between load level is obtained by taking the total height of the pallets, Plus the load and adding this figure to the required clearance. This is should never be less than the figure listed in the technical rack clearances table on page 12.

Reach height also differ for each type of forklift truck. This information can be found in the technical specifications of each forklift

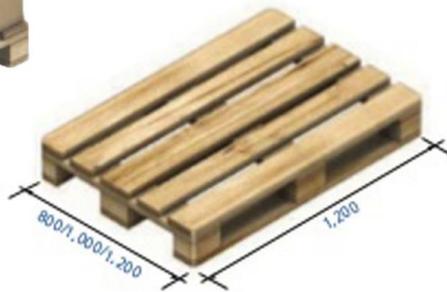


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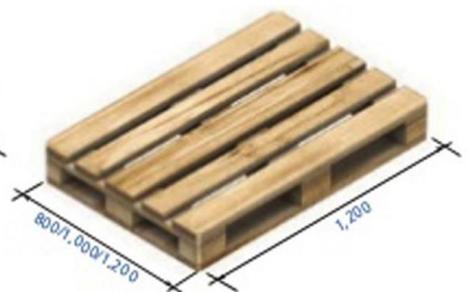
Open Pallets



Pallet on Rack Load

Euro pallets are 800 x 1200mm in size and handled sidwise by their shorter edge. Pallets are also made with the same criteria in measurement of 1000 x 1200 and 1200 x 1200mm

Perimeter Base Pallets



Perimeter Base Pallets

These pallets are built like the euro pallets, except they have two additional skids on the base that are connected with the other three skid.

Pallet on Rack Load

Goods are placed on pallets and in containers when stored

The characteristics of the goods determine the way they should be stored. The most common 2 types are:



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This system suits to store various types of goods. Our structure is designed to be strong for the very heavy weight goods, suitable to use as customers can select storage positions easily and no limitation for the pallet used in industrial factories, warehouse for stocking or storing raw materials waiting for dispatch.

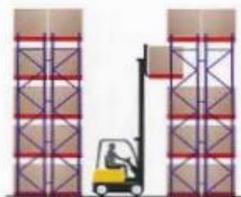
这个装置适合存放各类物品。我们的设计结构坚固，适用于非常重的物品，客户可以轻松选择库存位置，货盘的使用不受限制，能存货或着存放等待派送物品。

Advantages of Using

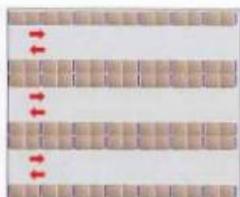
- Suitable for laying goods on pallet
- Various types of goods and heavy loaded
- Load per level up to 4000kgs
- Double-deep storage increase warehouse capacity by up to 30% compared to single-deep storage

使用的优点

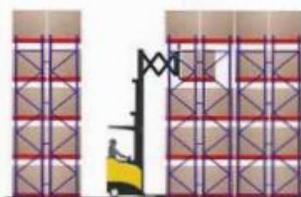
- 适合在货盘上铺设货物
- 承载各种重装的货物
- 每层能承载高达4000kgs
- 双倍的仓库库存量，增加高达30%的储存空间



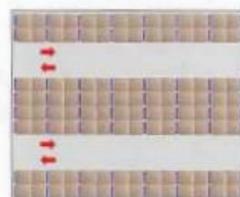
Traditional Forklift



Single Deep Layout



Double Deep Forklift



Double Deep Layout



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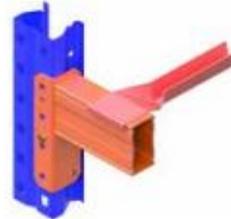
OMEGA UR90 POST
50/70/90/115
Thickness : 1.6/2.0/2.5mm



Horizontal Brace
1.5mm



Diagonal Brace
1.5mm



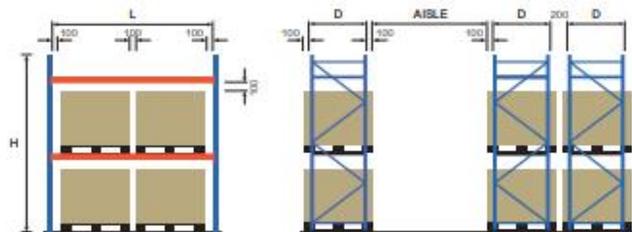
SINGLE BOX BEAM
50/80/90/100/120/140
Thickness 1.6/1.8mm



DOUBLE BOX BEAM
180/200/240/280
Thickness

Racking Components

- | | | |
|----|-------------------|-------|
| 1 | Rack Frame | 货架柱片 |
| 2 | Row Spacer | 隔离杆 |
| 3 | Base Plate | 底盘 |
| 4 | Box Beam | 横梁 |
| 5 | Connector | 连接器 |
| 6 | Shelf Support Bar | 货架支撑杆 |
| 7 | Upright Protector | 直立保护器 |
| 8 | Protector Barrier | 保护者障碍 |
| 9 | Wire Mesh Decking | 网格层板 |
| 10 | Steel Shelf | 钢层板 |
| 11 | Plywood | 木层板 |



Standard Dimension

Depth (D) : 600, 900, 1200mm
Length (L) : from 1250mm to 3900mm
Height (H) : from 1800mm to 12000mm

Note: Others size available on Project.



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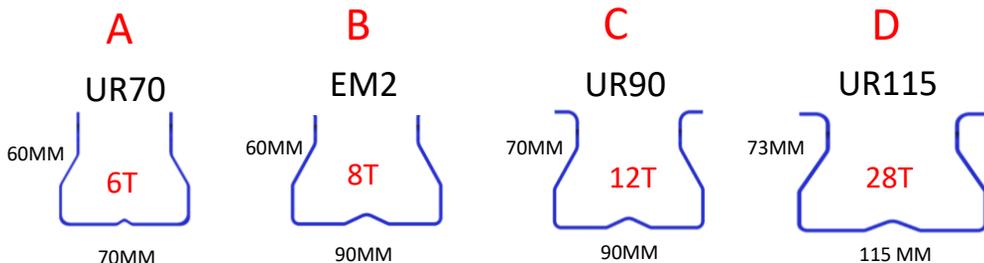
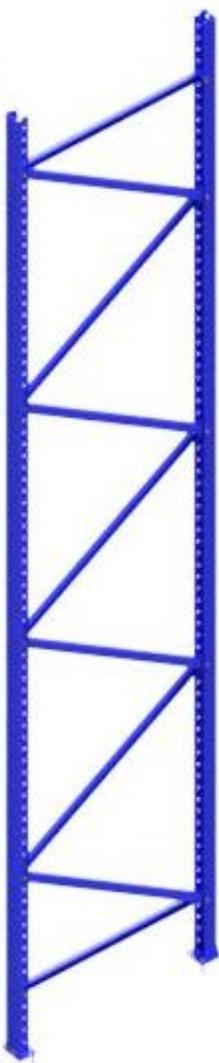
UPRIGHT STANDARD

End Frame

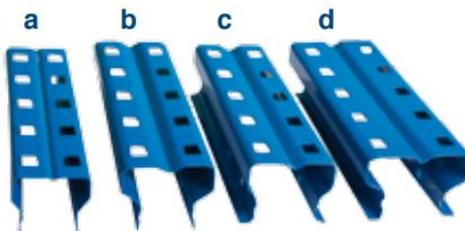
Frames are made up of two uprights with the corresponding horizontal and diagonal bracings, footplate and accessories.

Upright are slotted every 60mm to fit beams to the frame

The pallets size determines frame's depth 900mm is normally used for a 1200mm deep euro pallets



T = TONS



Design Standard Accordance With:

- | | |
|--------------------|--|
| AS4084-2012 | Steel Storage Racking |
| AS/NZS 1170.4-2002 | Structural Design Action Part4 Earthquake Action |
| AS 4600-2005 | Cold Formed Steel Structures |
| AS 4100-1998 | Steel Structures |
| AS/NZS 1554.12011 | Welding of Steel Structures |



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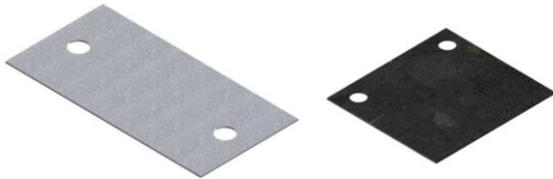
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Base Positioning Plate Design



Frame Base Plate

Frames Based Plate are using at the bottom of the Upright supporting the load of goods. There is a range of different frame Foot plates whose are depends on the load to be supported. They are anchored to the floor using one on each upright.



Levelling Plate

Shims level out racks which stand on uneven slabs. Each Type of shim, which comes in different thicknesses allowing for more precise levelling.



Anchor Bolts

Racks are fixed to the slab using anchor bolts to secure the position Of the rack

They very depending on the forces they have to withstand and the characteristics of the slab itself.



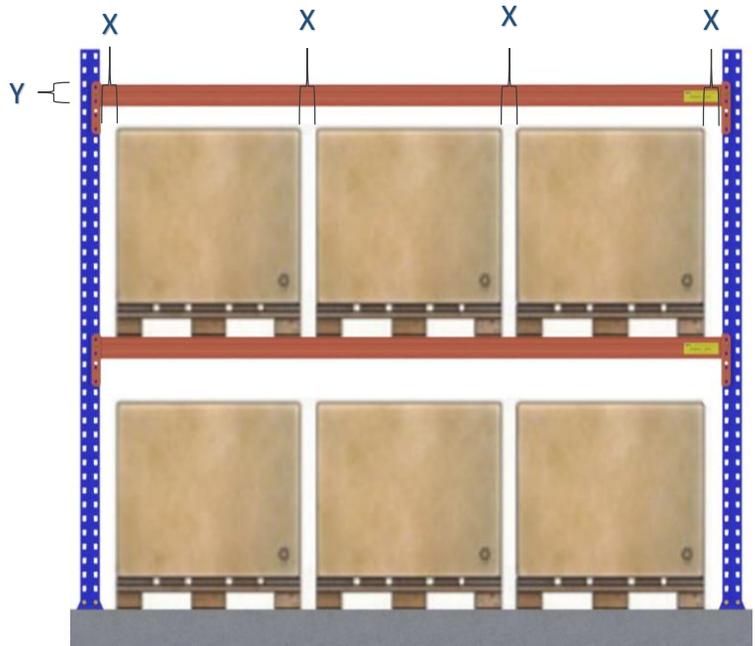
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Clearance Design



Frame Height (MM)	Reach Truck		Man Up VNA Truck		Man Down VNA Truck	
	X	Y	X	Y	X	Y
$0 \leq H \leq 3000\text{mm}$	75	75	75	75	75	75
$3000 \leq H \leq 6000\text{mm}$	75	100	75	75	75	100
$6000 \leq H \leq 9000\text{mm}$	75	125	75	75	75	125
$9000 \leq H \leq 12,000\text{mm}$	100	150	75	75	100	150
$12,000 \leq H \leq 13,000\text{mm}$	100	150	75	75	100	175
$13,000 \leq H \leq 15,000\text{mm}$	--	--	75	75	100	175



Clearances

The height between levels is calculated by adding together three variables the pallet height including the load. The beam height and the clearance (Y)

These values are rounded up to a measurement that is a multiple of 60mm

Bay tolerances and clearance:

Y : Height between the pallet and the bottom of the beam for levels other than the bottom level.

X: Minimum clearance between pallets or loads dimension in mm



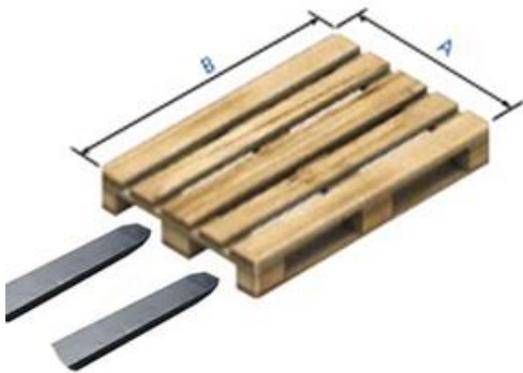
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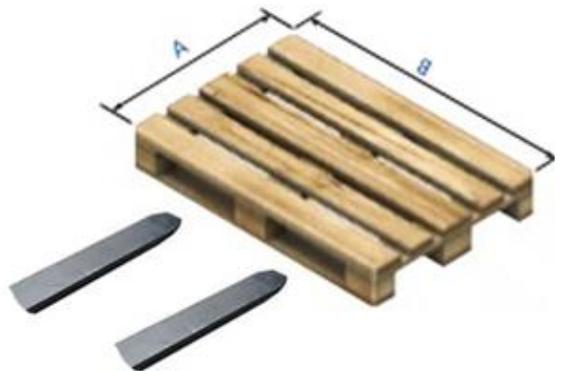
Frame & Beam Selection



ENTRY DIRECTION A



ENTRY DIRECTION B



FORK ENTRY DIRECTION A DIGRAM

Pallet Fork Entry Diction		Beam Selection (mm)	Frame Dept Selection (mm)	Number of Pallet each Level
A	B			
800	1,200	1850	900	
1000	1,200	2300		
1200	1,200	2700		
800	1,200	2700	900	
1000	1,200	3300		
1200	1,200	3900		

FORK ENTRY DIRECTION B DIGRAM

Pallet Fork Entry Diction		Beam Selection (mm)	Frame Dept Selection (mm)	Number of Pallet each Level
A	B			
800	1,200	2700	600	
1000	1,200	2700	800	
1200	1,200	2700	900	
800	1,200	3900	600	
1000	1,200	3900	800	
1200	1,200	3900	900	



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Beam Load Table

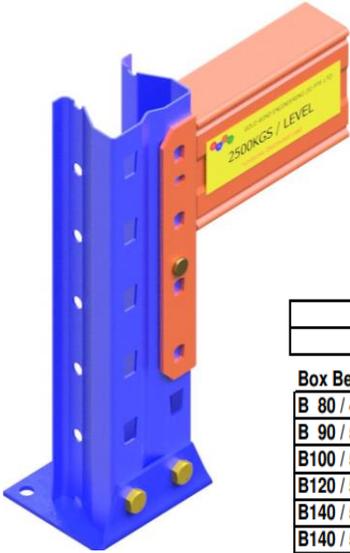


Beams Design

Cross Beam – connects into the upright frame on both ends to create a shelf for the pallets to rest upon. Two **beams** make up one shelf level. **Cross beams** are available in numerous lengths and capacities. Wire Decking – is often used as a safety measure for the pallets being stored in the pallet rack system.



Loading Sticker to comply WSH Standard.



	Clear Entry (Beam Length MM)											
	1200	1350	1500	1800	2100	2300	2400	2700	3000	3300	3600	3900
Box Beam												
B 80 / 40 / 1.5	2100	1900	1750	1500	1350	1250	1200	1100	800	500	300	---
B 90 / 50 / 1.6	4402	3965	3592	3047	2695	2491	2412	2075	1735	1469	1268	1103
B100 / 50 / 1.6	5132	4671	4210	3594	3144	2865	2813	2536	2319	1980	1770	1476
B120 / 50 / 1.6	5693	5307	4921	4161	3641	3323	3257	2938	2685	2354	2027	1752
B140 / 50 / 1.6	---	---	---	---	4588	4166	4054	3647	3334	3075	2653	2303
B140 / 50 / 1.8	---	---	---	---	5162	4687	4561	4103	3751	3459	2985	2591

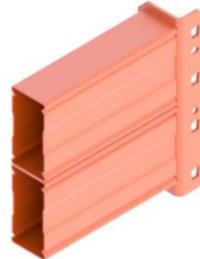
Available Stock



Safety Pin



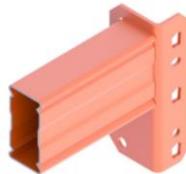
Heavy Duty Beam (4 Tongs)



Double Heavy Duty Load Beam (Special Design)

Beam for Light Duty Shelf

These are made up of a single rolled tube. Welded to two hooks at both end.



Medium Duty Beam (3 Tongs)



Open Beam 75 x 50

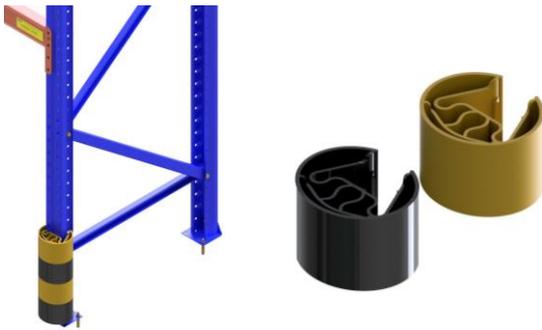
	Clear Entry (Beam Length MM)											
	1200	1350	1500	1800	2100	2300	2400	2700	3000	3300	3600	3900
Open Beam												
U75 / 50 / 1.8	1700	1600	1500	1300	1100	1000	900	700	---	---	---	---
Box Beam												
B 80 / 40 / 1.5	2100	1900	1750	1500	1350	1250	1200	1100	800	500	300	---



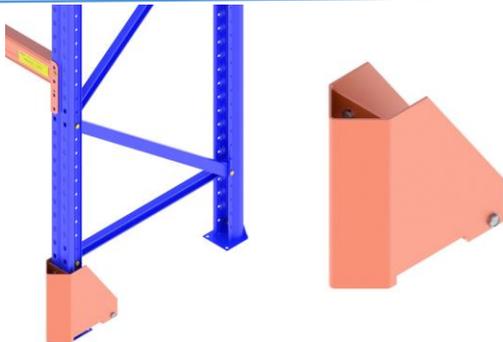
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UPRIGHT PROTECTION



PLASTIC UPRIGHT PROTECTOR			
Protect Height (mm)	Nos of Plastic (No)	Frame Section (mm)	SKU
100	1	90	132-PUP-100
200	2		132-PUP-200
300	3		132-PUP-300
400	4		132-PUP-400
500	2		132-PUP-500
600	6		132-PUP-600



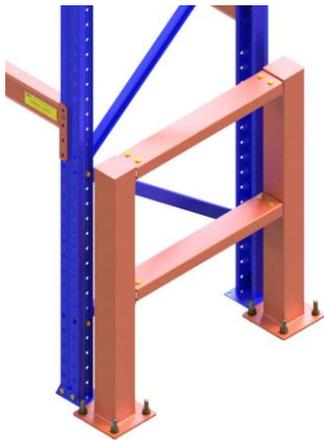
PLASTIC UPRIGHT PROTECTOR			
Protect Height (mm)	Nos of Protector (No)	Frame Section (mm)	SKU
300	1	90	132-PUP-3030



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PROTECTOR BARRIER



PROTECTOR BARRIER		
Protect Height (mm)	Frame Depth (mm)	SKU
1000	900	132-PB-900#
1000	1200	132-PB-1200#
1000	1500	132-PB-1500#
1000	1800	132-PB-1800#
1000	2200	132-PB-2200#
1000	2200	132-PB-2200C#

* Special Design Available Upon Request



PROTECTOR BARRIER		
Protect Height (mm)	Frame Depth (mm)	SKU
260	900	132-PB-C260W900#
260	1000	132-PB-C260W1000#
260	1200	132-PB-C260W1200#
260	1500	132-PB-C260W1500#
260	1800	132-PB-C260W1800#
260	2200	132-PB-C260W2200#
260	2200	132-PB-C260W2200C#
260	2500	132-PB-C260W2500#



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SAFETY LOAD CHART



EMERGENCY CONTACT LIST
 FIRE ENGINE / AMBULANCE 995
 NON EMERGENCY AMBULANCE 1777
 POLICE FORCE 1777

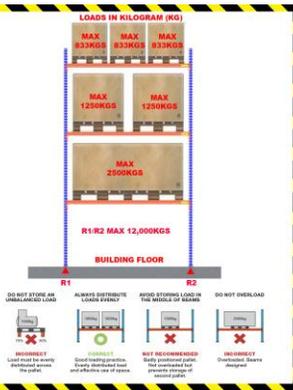
DESIGN STANDARD
 1. AS4984-2012 STEEL STORAGE RACKING
 2. AS/NZS 1714-2002 EARTHQUAKE ACTION
 3. AS 4680-2005 COLD-FORMED STEEL STRUCTURES
 4. AS 4100-1998 STEEL STRUCTURES
 5. AS/NZS 1554.100-11 WELDING OF STEEL

Scan.me
 SPECIALIST CONTRACTOR

TEL: +65 6452 7098
 Email: support@gw-engineering.com

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bioSAFE



MAINTENANCE NOTICE

CONDUCT REGULAR INSPECTION TO CHECK FOR CORRECT APPLICATION AND USE. LOAD WITHIN ALLOWABLE SAFE LIMITS. ACCIDENTAL DAMAGE. DISLODGE/MENT OF STRUCTURES COMPONENTS.

USE ONLY PALLET OF BEST QUALITY. THE USE OF WORN RETURN PALLET. BROKEN PALLET OR IMPROPER FORKTRUCK.

DO NOT CLIMB ON PALLET RACKING WITHOUT PROPER SAFETY EQUIPMENT.

DO NOT ALTER THE STRUCTURE WITHOUT EITHER CHECKING EFFECTS AGAINST MANUFACTURER'S TECHNICAL DATA OBTAINING APPROVAL FROM SUPPLIER.

REPORT DAMAGED TO PERSON RESPONSIBLE. REMOVE ALL GOODS OR LOAD ON DAMAGED RACK.

BE CALCULATION AGAINST BUILDING FLOOR LOAD. VISUAL INSPECTION & REPORT ONCE A YEAR. REPLACE DAMAGED COMPONENTS. REGULARY CORROSION INSPECT EVERY 6 YEAR. ADD ON SAFETY PROTECTION PRODUCT.

SAFE
 GOLD WIND

MAINTENANCE NOTICE

LOADS IN KILOGRAM (KG)

DO NOT STORE AN UNBALANCED LOAD

ALWAYS DISTRIBUTE LOADS EVENLY

NEVER STORE LOADS IN THE MIDDLE OF AISLES

DO NOT OVERLOAD

DESIGN STANDARD
 1. AS4984-2012 STEEL STORAGE RACKING
 2. AS/NZS 1714-2002 EARTHQUAKE ACTION
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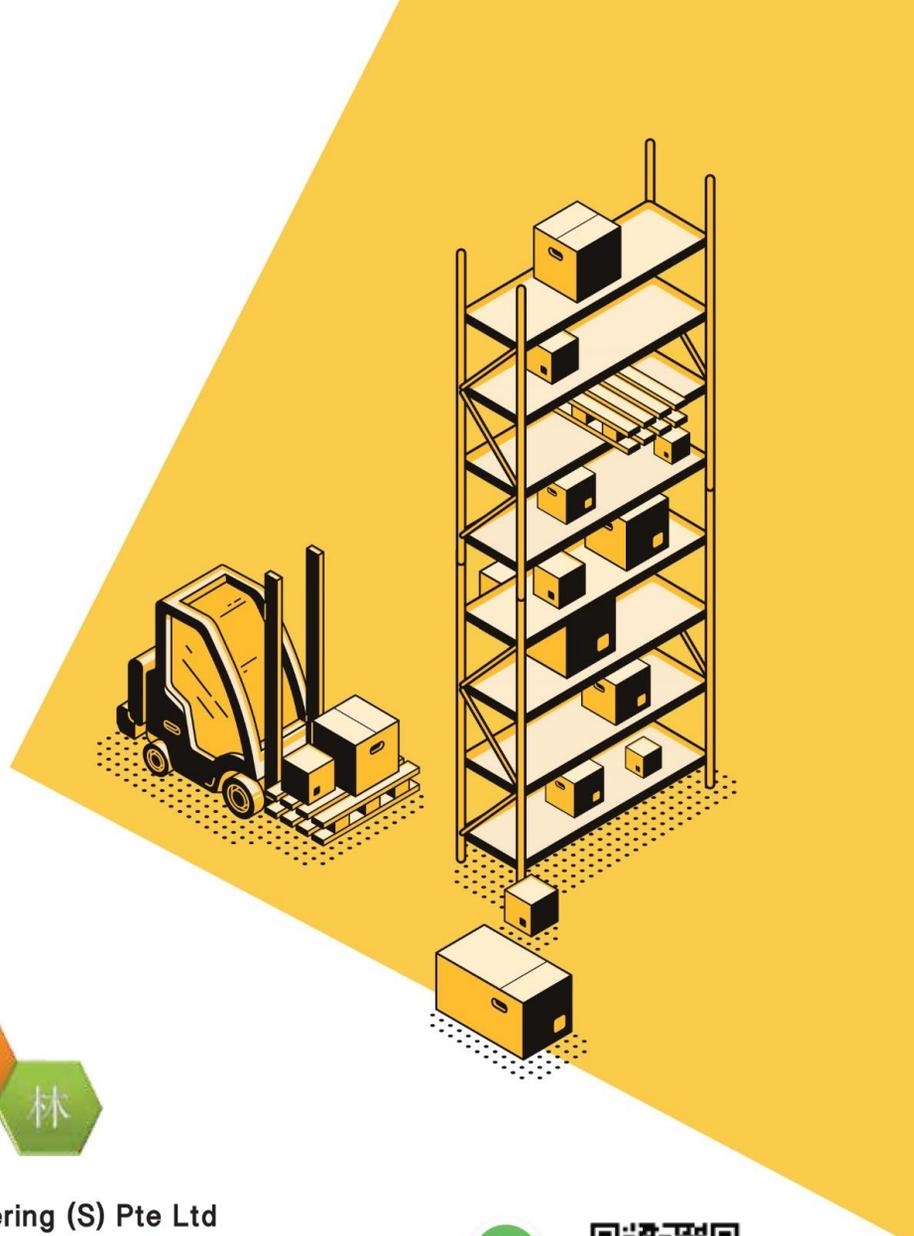
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bioSAFE

SAFETY LOAD CHART		
SIZE H x W (mm)	Frame Depth (mm)	SKU
297 x 210	--	00-SIGN-LC(A4)
450 x 900	900	00-SIGN-LC900
450 x 1200	1200	00-SIGN-LC1200



Industrial STORAGE SYSTEMS
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