



CATALOGUE 2009

LOGISTIC STORAGE SOLUTIONS



High Rise Storage



Mobile Rack



FIFO Storage Rack



Mould Rack



FPO Bin Trolley



On Line FIFO



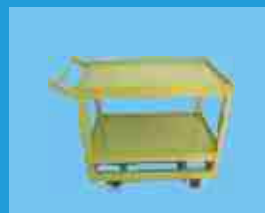
Pallet



Assembly Table



Tool Cabinet



Platform Trolley



CNC 'A' Type Trolley



Sheet Storage Rack



Mezzanine Floor



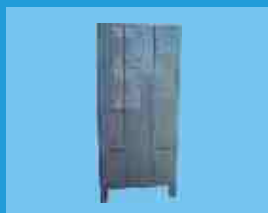
Auto Store Lift



Roller Track



Roto Store



Industrial Lockers



Conveyor



Pipe & Joint



Castors



High Rise Storage

HIGH RISE STORAGE SOLUTION



Project at : ALFA LAVAL



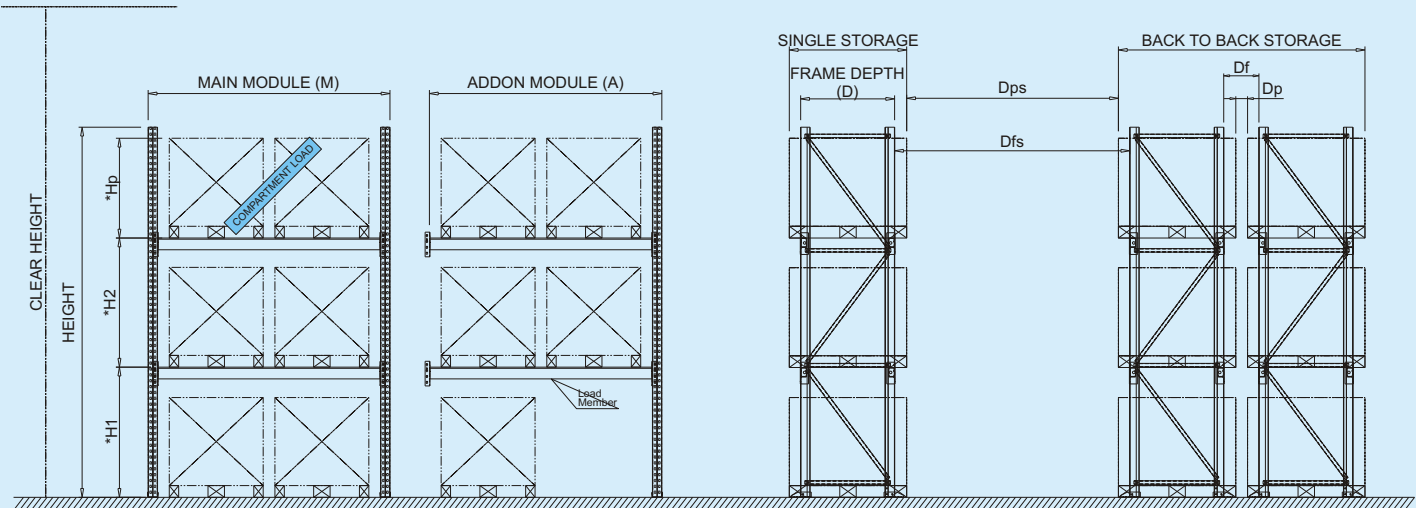
Project at : FIAT INDIA

Terminology

HRSS is the Adjustable Pallet Storage System, is a special 8-fold profile upright.

HRSS is innovative and versatile design. In Industrial efficiently serves a spectrum of industrial storage requirements, with high standards of economy and technical excellence.

HRSS design features define the stability, rigidity, flexibility, safety and ease of assembly.



Compartment load : Sum of storage pallets or goods.

Load Member Length : Clear dimension between two frames.
(No. of stored pallets x dimension of pallet) + feed clearance (normally 75-100 mm).

H1, H2 : Compartment Heights.
(Pallet Height + feed clearance of at least 100 mm + Height of Load Member).

Hp : Height of Pallet.

D : Frame Depth.

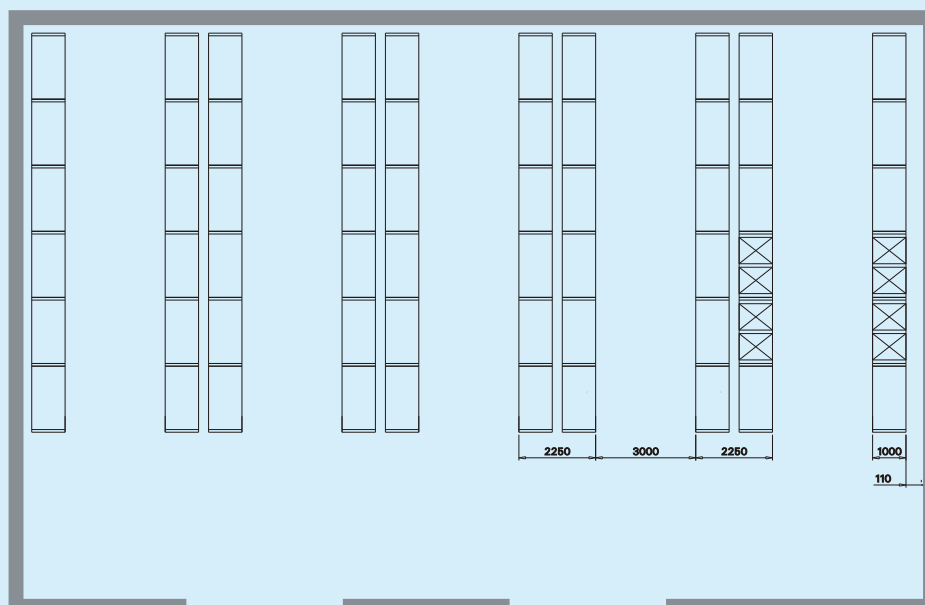
Dp : Distance between the pallets at least 100 mm.

Df : Distance between the frames

Dps : Distance between the pallets in the gangway.

Dfs : Distance between the frames (clearance of gangway width).

- Column Guards must be fitted at the corners of the HRSS Rack.
- In case of side to side storage, Pallet Supports must be secured against falling of pallets.
- Load bearing capacity label must be indicated on every load member.



Gangway width : Battery Stacker – 3.0 mtrs. (Clear Dimensions)
Diesel Fork Lift – 3.5 mtrs. to 4.0 mtrs. (Clear Dimensions)

Multi - Storage Pallet

Direct access to each and every stored pallet.

Easy inventory control : every empty storage space corresponds to one pallet.

Each and every pallet can be removed at anytime without having to relocate other pallets.

Load members are very simple.

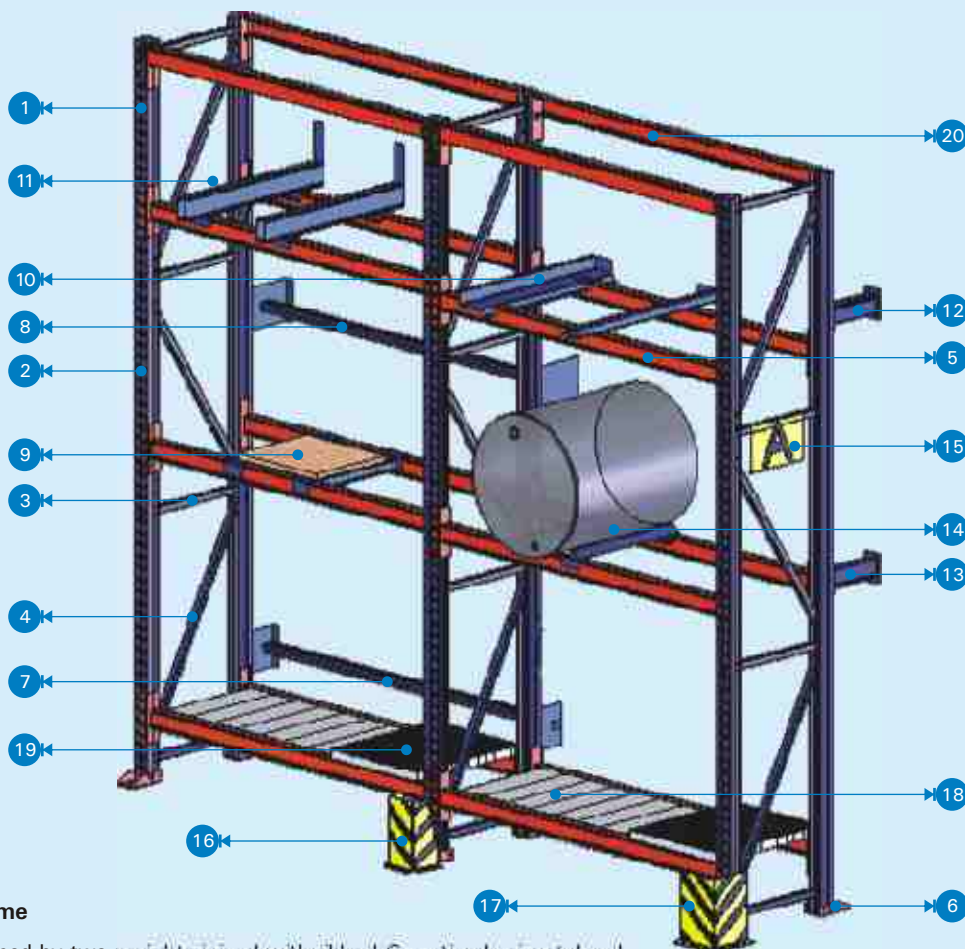
All accessories are modular systems.

Pallet Storage Rack

Storage and retrieval with front stackers (front to back storage).

The storage racks are generally setup as single or back to back storage, whereby the single storage can only be worked from one side. The width of gangways varies and depends on the handling trolleys, the pallets dimensions, and the side from which the rack is worked.

HIGH RISE STORAGE SOLUTION



Standard Accessories

1. Frame
2. Upright
3. Horizontal Member
4. Diagonal Member
5. Load Member
6. Shoe Plate
7. Pallet Arrestor (Single Type)
8. Pallet Arrestor (Common Type)
9. Pallet Support (Sq.-Section)
10. Pallet Support (Z-Section)
11. Riser
12. Frame Spacer
13. Wall Spacer
14. Oil Drum Support
15. Name Plate
16. Column Guard 'C' Type
17. Column Guard 'L' Type
18. Decking Panel
19. Grating

Frame

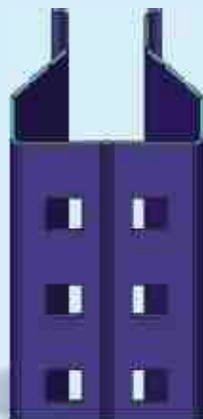
Formed by two uprights joined with ribbed C section horizontal and diagonal members secured together with welded structure. Shoe plates bolted to upright base secure the frame to the ground by means of anchor bolts.

Finish : Powder coating / Paint /Deep Blue)

Frame Type	Frame Height mm	Depth mm
HRSS F80.80 F110.80	2150	600,800, 1000,1200
	2650	
	3150	
	3650	
	4150	
	4650	
	5150	
	5650	
6150		

Upright (F 80.80)

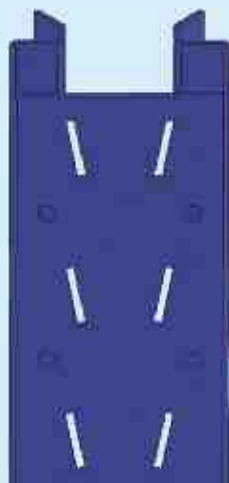
8-fold bottle section made from cold- rolled 1.6mm and 2mm thickness which permits addressing several required variable frame capacity. Equally spaced rectangular slots at 50 mm pitch on upright make the system more flexible in terms of Load Member position. The upright 8-fold sections profile enables structural rigidity and a high load capacity upto 12 Ton even when used in structures



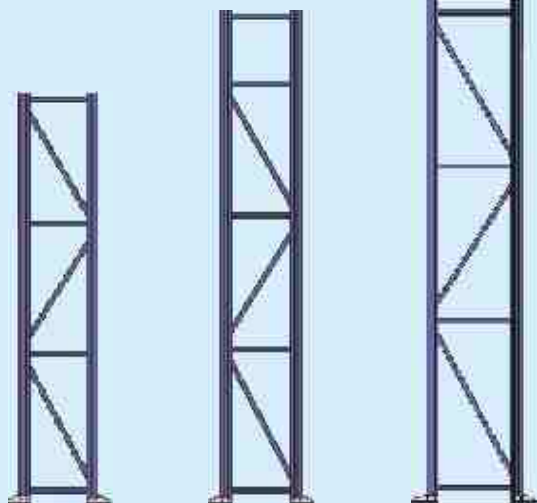
Upright F80.80	Load Capacity / Frame
1.6 Thk.	7.0 Ton
2.0 Thk.	12.0 Ton

Upright (F110.80)

8-fold bottle section made from hot - rolled 2 mm, 2.5 mm and 3 mm thickness of equally spaced slotted perforation on 50 mm pitch on upright make higher load capacity upto 20 Ton. Horizontals & Diagonals are secured together with welded structure upto height 6 mtrs..



Upright F 110.80	Load Capacity / Frame
2.0 Thk.	12.0 Ton
2.5 Thk.	15.0 Ton
3.0 Thk.	20.0 Ton



Load Member

Double-C Profile, Nose Profile, made from cold-formed coils. Connectors welded to the ends of the load members. Load member with nose can be used to support the decking panels as specifically required. Rolled section performs better than tubular profile under extreme loading conditions, providing bigger bay length.

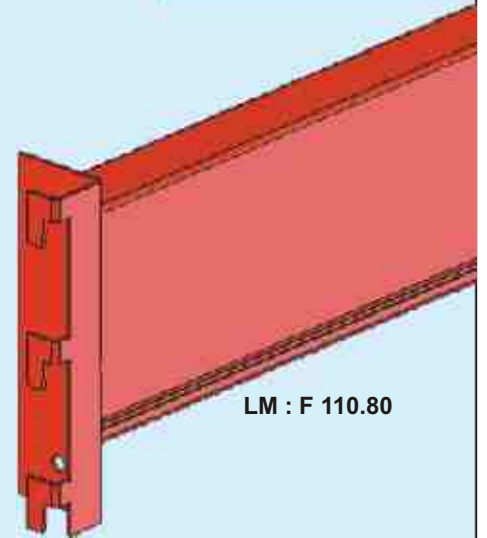
Finish : Powder coating / Paint (Deep Orange)

Connector

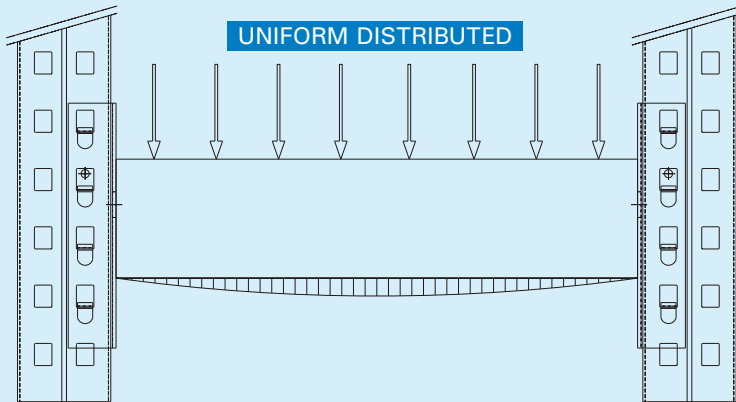
Connector with load member also adds to the structure's superior rigidity.



LM : F80.80

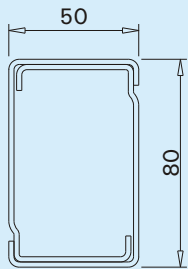


LM : F 110.80

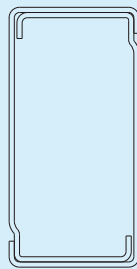


The quoted values only valid under the following conditions :

The load is assumed to be uniformly distributed across the length of the load member. The maximum permissible deflection is 1/500 of the length for all load members.



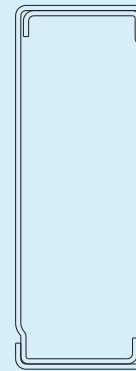
CC 080



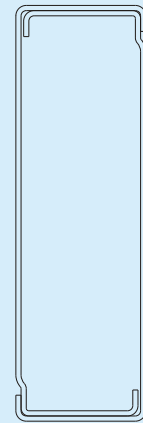
CC 100



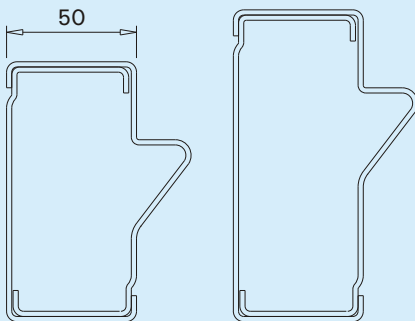
CC 120



CC 140



CC 160



CN 100*

CN 120*

*Suitable to Decking panel for the load member 2.0 Ton / Pair

Pallet Sizes

Front (mm)	Depth (mm)
800	1000
1000	1200
1200	1200
1500	1200
1200	1000
1000	800

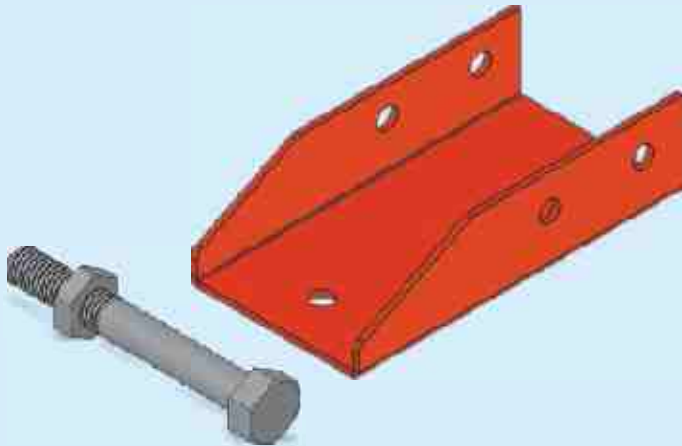
Load Member

Product Code	Type of Load Member	Suitable for Pallet or Container Width & Front	Length* of Load Member (mm)	Load Capacity Per Pair (kg)
Ise02492	CC 080	1 x 1500	1700	2300
Ise02145		2 x 800	1900	1800
Ise02146		2 x 1000	2300	1200
Ise02147		-	2500	1000
Ise02401	CC 100	2 x 800	1900	3100
Ise02150		2 x 1000	2300	2100
Ise02485		2 x 1200	2700	1500
Ise02151		-	2800	1400
Ise02152	CC 120	2 x 1000	2300	3300
Ise03168		-	2500	2800
Ise02153		-	2800	2300
Ise03169	CC 140	-	2500	4200
Ise02149		-	2800	3400
Ise02155		2 x 1500	3300	2400
Ise03148	CC 160	-	2800	4700
Ise03170		2 x 1500	3300	3500
Ise03171		-	3500	3000

*Effective load member length + 9mm

Accessories

HRSS comes with several accessories options to suit item being stored.



Shoe Plates (Ise02213)

Shoe plate specially designed on high tensile strength expansion bolts to secure uprights to floors. Where floors are uneven, a complete range of packing shims ensures absolute surface accuracy.

Dimensions : 85 mm W x 170 mm L

Finish : Powder coating / Paint (Deep Orange)



Anchor Fastener

Product Code	Dimensions
IHa02482	Ø 10 x 75 L
IHa02480	Ø 10 x 100 L
IHa02481	Ø 12 x 75 L
IHa02599	Ø 12 x 100 L

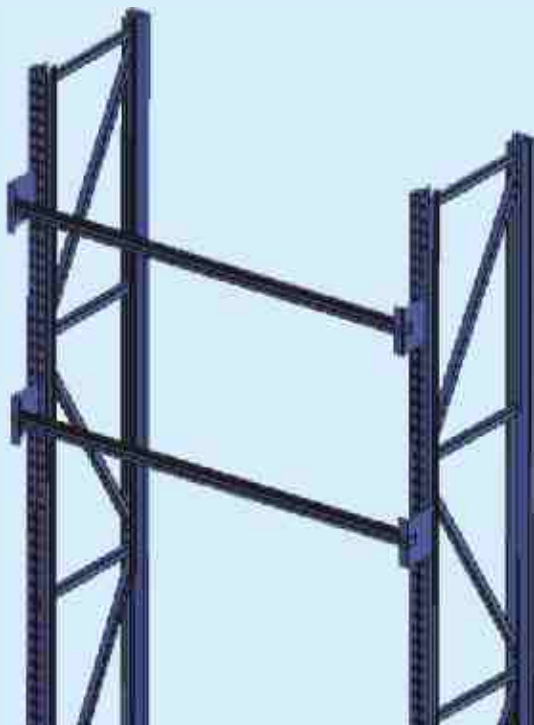


Locking Pin (IHa02214)

Dimensions : Ø 6 x 40 mm L

Locking pins provided with each load member that prevent accidental unlocking.

One locking pin is supplied for every interlocking connector.



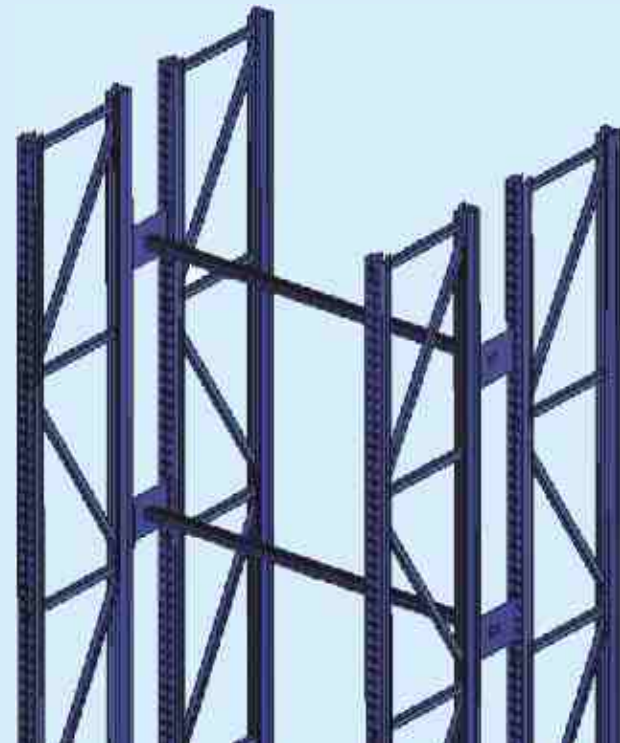
Pallet Arrestor (Single Type)

When pallets are stored on single side storage.

Made of rolled section with attachment of two sides mounting plates, to fixing by special screws & Bolts. It can be adjustable on every 50 mm pitch.

Dimensions : 153 mm D x 180 mm H

Finish : Powder coating / Paint (Deep Blue)



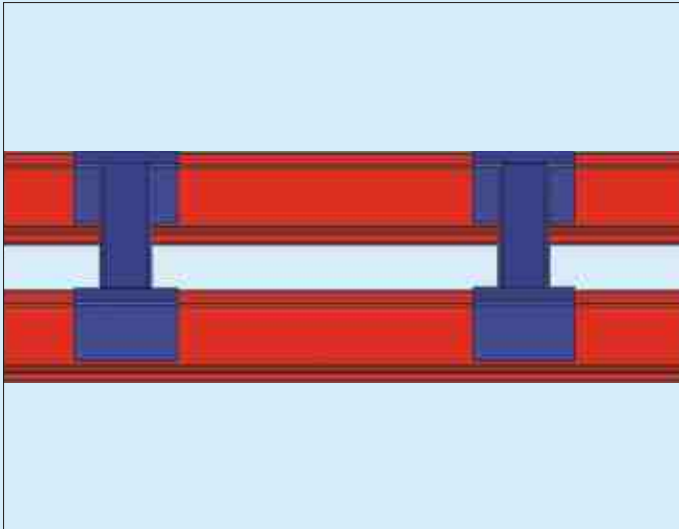
Pallet Arrestor (Common Type)

When pallets are stored on back to back storage.

Made of rolled section with attachment of two side mounting for plates, fixing by special screws & Bolts. It can be adjustable on every 50 mm pitch.

Dimensions : 250 mm D x 180 mm H

Finish : Powder coating / Paint (Deep Blue)



Pallet Support (Sq.-Section)

These pallet supports are necessary, when storing pallets whose center runner runs parallel to the load member and where the depth of the shelf unit is greater than that of the pallets.

Made of formed section assuming uniform distributed load on load member, when used to support plywood.

Finish : Powder coating / Paint (Deep Blue)

Product Code	Frame Depth (mm)	Pallet Support Length (mm)
Ise03172	600	600
Ise03173	800	800
Ise03174	1000	1000
Ise03175	1200	1200



Pallet Support (Z-Section)

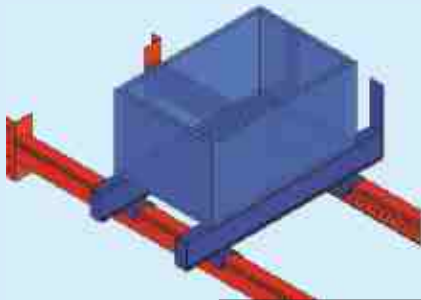
These pallet supports are necessary, when storing pallets whose pallet depth is greater than the frame depth or equal to pallet size.

Made of steel sheet, assuming uniform distributed load on higher load bearing capacity. Locking screws provided for supports from sliding apart to prevent accident. Back stopper provision to prevent pallet overturning. Specially designed as per safety norms, easy to interchange.

Pallet support length = Frame depth + 210 mm (Extend of 105mm either side of frame depth)

Finish : Powder coating / Paint (Deep Blue)

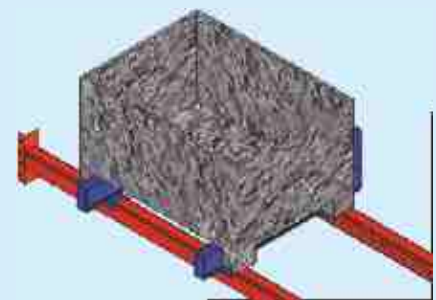
Product Code	Frame Depth (mm)	Pallet Support Length (mm)
Ise03176	600	810
Ise03177	800	1010
Ise03178	1000	1210



Riser for Storage Bin



Riser for Storage Wooden Box



Riser for Storage Pallet

Riser

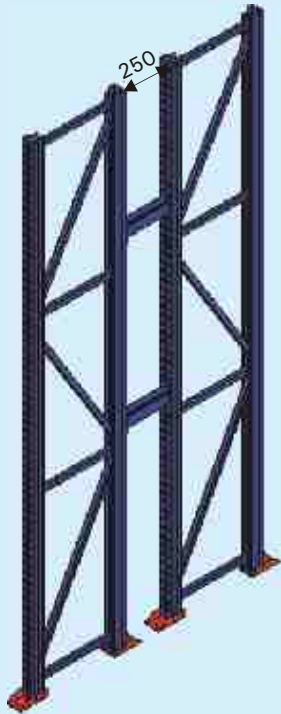
For wooden boxes, Bins and steel pallet which do not have the feasibility to store on HRSS.

Made of formed section assuming uniform distributed load on load member. Locking screws provided for support from sliding apart to prevent accident. Back stopper provision to prevent overturning.

Riser length = Frame depth + 210 mm (Extend of 105mm either side of frame depth)

Finish : Powder coating / Paint (Deep Blue)

Product Code	Frame Depth (mm)	Pallet Support Length (mm)
Ise03179	600	810
Ise03180	800	1010
Ise03181	1000	1210

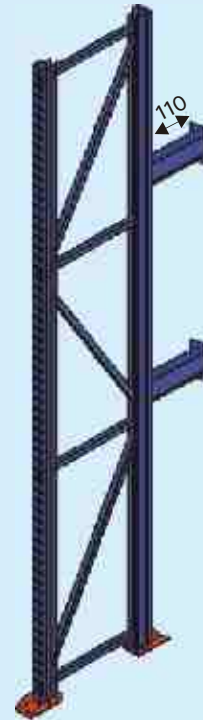


Frames Spacer (Ise03182)

They are an integral part of system, which add to the frame rigidity. Using for connecting the back to back frames with special nut & bolt. Every 1.5 mtr. height, 1 no. frame spacer is necessary.

Dimensions : 250 mm L x 75 mm W x 150 mm Ht.

Finish : Powder coating / Paint (Deep Blue)



Wall Spacer (Ise03183)

If the floor anchoring is insufficient, wall spacer anchoring must be needed. Using the connecting between the wall and the frame with special nut & bolt. Every 1.5 mtr. height, 1 no. wall spacer is necessary.

Dimensions : 110 mm L x 75 mm W x 150 mm Ht.

Finish : Powder coating / Paint (Deep Blue)

Drum Support



Oil can support made of steel sheet with surface area 300 mm x 260 mm

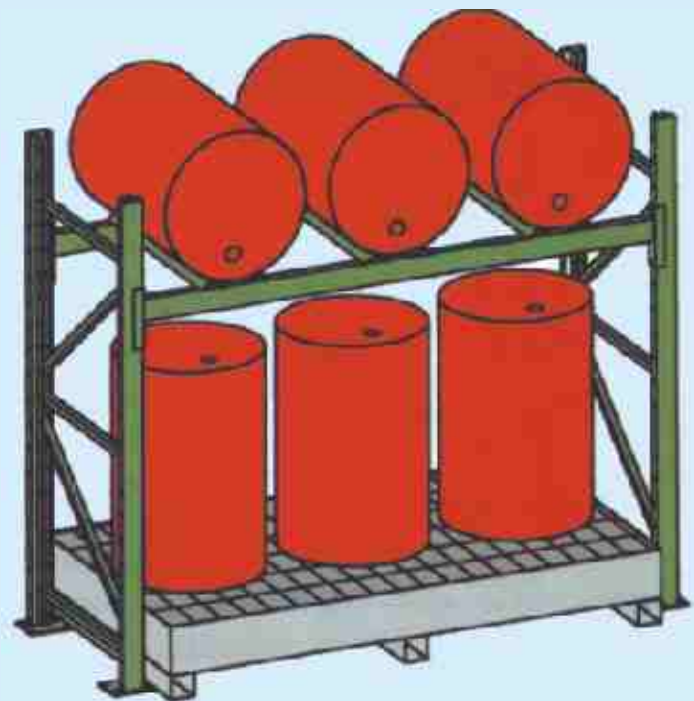


Rotatable Drum Support

The drum to be rotated within the support. Facilities fitting the drain cock.

Made of steel sheet sections with 2 steel rollers, ball bearing, Roller Dia 50 mm, capacity 200 kg..

Finish : Powder coating / Paint (Deep Blue)





Pallets for Oil Drum

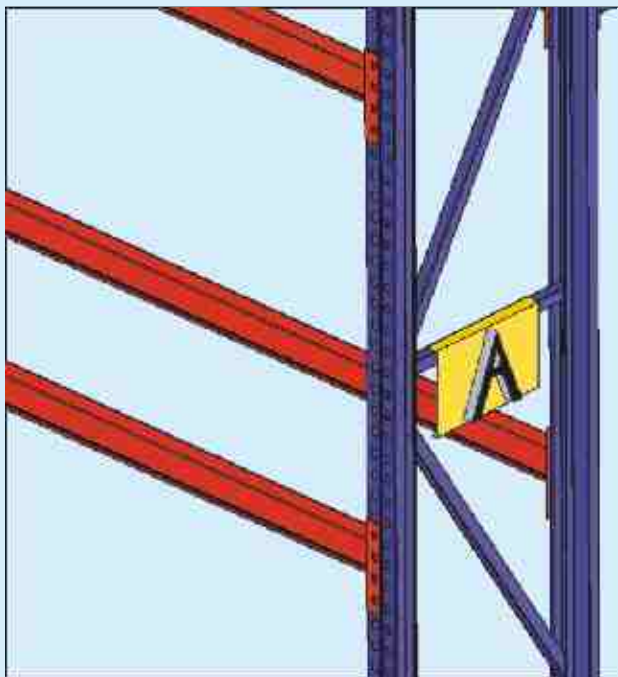
welded steel sheet design with leak sealing.

100 mm ground clearance to easy access

TO store 2 x 200 liters oil drum in vertical position

Pallets designed as per ISO norms

Dimensions : 1200 mm L x 800 mm W x 300 mm H



Name Plate (Ise03184)

Identification of the Rack.

Dimensions : 350 mm L x 500 mm H

Finish : Powder coating / Paint
(Golden Yellow with Black Vinyl Letters)



Frame Extension for F110.80 (Ise03185)

Screw-connected extensions for support frames with fixings.

Dimensions : 500 mm Ht. for all standard depth.

Finish : Powder coating / Paint (Deep Blue)



Column Guard "C" Type (Ise02770)

To protect upright against forklift impact.

Made of HR sheet with 400 mm Height

3 Nos. of anchor Fastener required for anchoring.

Finish : Powder coating / Golden Yellow with Black Vinyl



Column Guard "L" Type (Ise02496)

To protect upright against forklift impact in Gangway.

Made of HR sheet with 400 mm Height

2 Nos. of anchor Fastener required for anchoring.

Finish : Powder coating / Golden Yellow with Black Vinyl

HIGH RISE STORAGE SOLUTION



Decking Panel

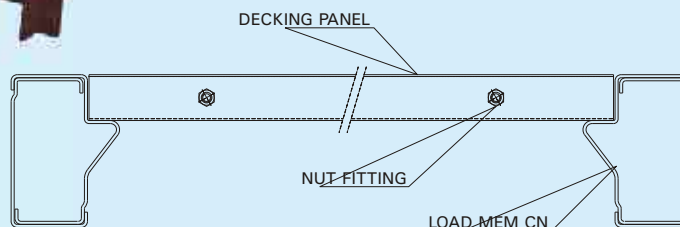
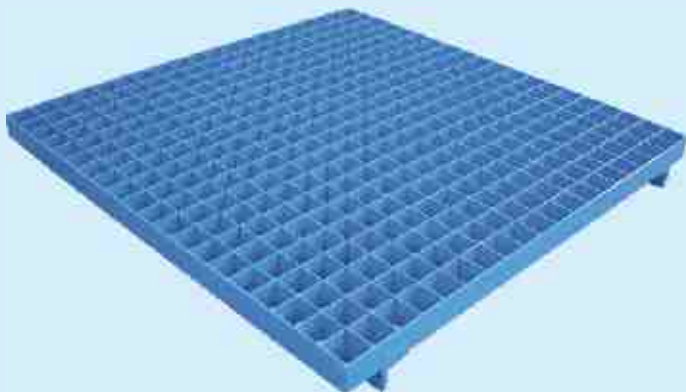
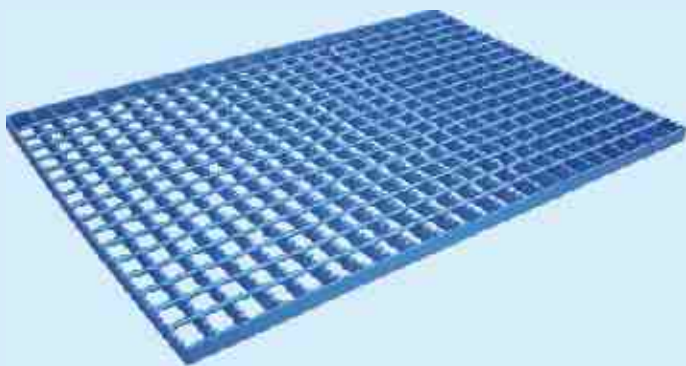
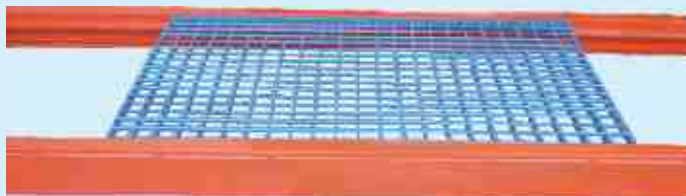
If the storage are bulky or heavy, such as cardboard boxes which are not pallet handled, Decking panels provide the ideal storage. It can be easily access from the storage area.

Panels made of Galvanised and Cold rolled sheet, with 'C' profile.

All individual panel are screw connections with special rods.

Finish : Galvanised panel
MS Panel (Powder coating / Paint / Deep Blue).

Decking Panel : Galvanised Metafold Standard, Please specify when ordering !



Suitable for the load member CN 100 & CN 120.

Maximum load capacity is assuming 2.0 Ton / Level on uniform distributed.

Material 1 mm, 1.2 mm, 1.6 mm thickness taking on consideration as per load bearing capacity.

Frame Depth (mm)	Decking Panel Length (mm)
600	495
800	695
1000	895
1200	1095

Grating

Bar grating is basically used in the platforms, stairs, power plant, waste treatment plant, civil offices, and commercial buildings.

Made by welding with flat steel and bars (Ø 8 mm), due to its strength, cost - efficient & easy installation.

Steel bars of spacing (50 x 50) mm on both lengthwise & depth wise on 30 mm high.

The cross bars provide high degree of rigidity and smooth flat surface.

Finish : 1. Powder coating / Paint
(Deep Blue and Ivory Glossy)

2. Zinc Plating (Blue Passivation)

Grating : Powder coating Metafold Standard, Please specify when ordering !

Standard Grating

Depth (mm)	Length (mm)	Length of Load Member (mm)	Suitable to Grating Size (mm)
495	500	1700	1 x 1000 + 1 x 700
695	700	1900	1 x 1000 + 1 x 900
895	900	2300	2 x 900 + 1 x 500
1095	1000	2500	2 x 1000 + 1 x 500
		2700	3 x 900
		2800	4 x 700
		3300	2 x 1200 + 1 x 900

Drive-In Racking

Drive-In Pallet racking requires fewer aisles, to store upto 75% more pallets in same space.

Drive-In racks allow a forklift to enter the rack from one side to pick-up or pull-out pallets.

Pallets can slide backwards on a continuous rail.

Forklifts drive into the rack to access pallets two or more deep.

Load Member with connectors bolted, to upright, allows adjustment of flow levels at any desired height and angle.

The load carrying capacity specially designed for safety noms.



Multi-tier Racking

1) Multi-tier racking increases space with store on goods multi layers. 2) Ideal storage of warehouse's utilizing space and height. 3) Usually acceptable to Automobile and Logistics Industries. 4) Consists of upright, shelves, decking panels, staircase & railing. 5) Modular systems allows easy installation and compatible for transportation.



High Rise Cum FIFO (Combination Rack)

HRSS with FIFO is to increase further space by 50% due to gravity flow Rollers for pallets, cartons & trays by reducing yield space and defining one location for each items.



Project at : HONEYWELL



Project at : FIAT INDIA

To avoid acceleration due to gravity Brake Rollers & Pallet stoppers are specially designed.
Metallic Rollers Dia 48 with Zinc Plating upto 1 Ton loading capacity per Pallet.



Project at : SPICER INDIA



Project at : GRUPO ANTOLIN

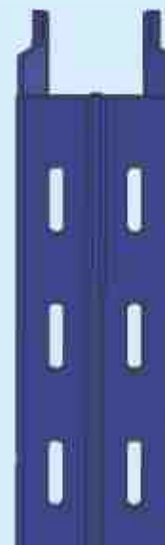
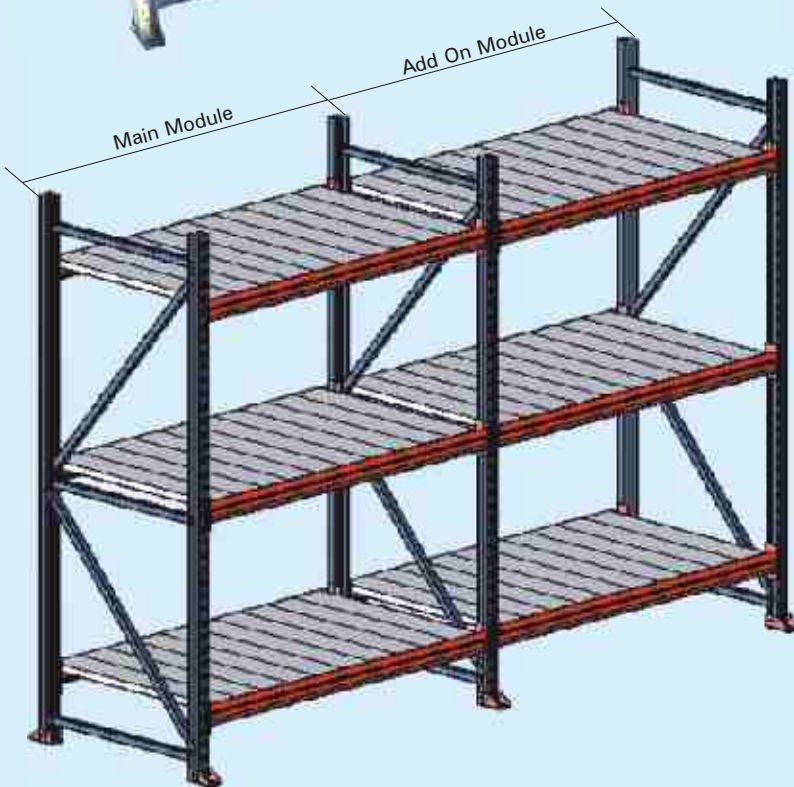
Medium Duty High Rise Storage Rack

MD HRSS Rack is the adjustable shelving system, with load bearing capacity upto 1.2 ton per level.

It is ideal for the storage of small boxes and cartons.

The loading and unloading can be done manually.

It's assembly is easy and appearance is good.



Upright (F50.55)

8-fold bottle section made from cold-rolled 1.6 mm thickness, equally spaced cylindrical slots at 50 mm pitch on upright make the system more flexible with load capacity upto 3 Ton

Normal height of the upright is upto 3 mtrs. and available upto 6 mtrs..

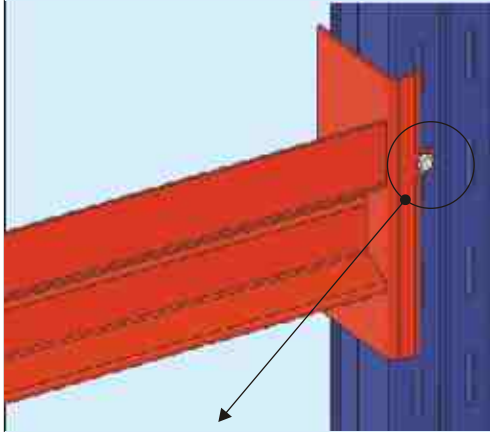
Finish : Powder coating / Paint (Deep Blue).

Frame Type	Frame Height mm	Depth mm
MD HRSS F50.55	1525	400,500, 600,700, 800
	1825	
	2025	
	2225	
	2525	
	2825	
	3025	

Load Member

Single-Z Profile, made from cold-formed coils. Connectors welded to the ends of the load members. Load member with Z Profile used to support the decking panels.

Finish : Powder coating / Paint (Deep Orange)



Locking Pin (IHa02232)

Dimensions : Ø 4 x 40 mm L

Locking pins provided with each load member that prevent accidental unlocking.

One locking pin is supplied for every interlocking connector.

Load Member

Product Code	Type of Load Member	Length* of Load Member (mm)	Load Capacity Per Pair (kg)
Ise03187	Z 080	1300	1000
Ise03188		1500	750
Ise03189		1700	600
Ise03190		1900	500
Ise03191	Z 110	1500	1200
Ise03192		1700	1000

*Effective load member length + 6mm

Decking Panel

Panels made of Galvanised and Cold rolled sheet, with 'C' profile.

Length of panel available on frame depth.

Advantages/Features

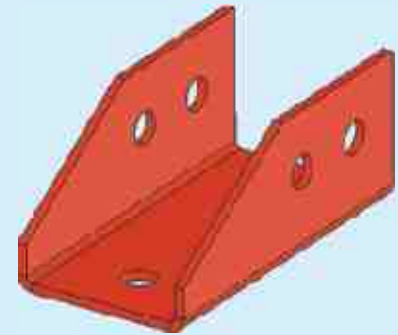
1. Its completely Ergonomical design in material and productions methods.
2. Component standardization to facilitate rapid layout and installation.
3. All other components are assembled without bolts.
4. Long and short side pallet handling as well as multi- and single position storage
5. Direct access to all reference lines-easy & convenient order picking.
6. All Storage systems component are completely compiling with safety regulations.
7. Easy servicing with front stackers.
8. Very good utilization of available floor surface.



Connector

Made of steel sheet, Teeth on connector with load member also adds to the structure's superior rigidity.

Finish : Powder coating / Paint (Deep Orange)

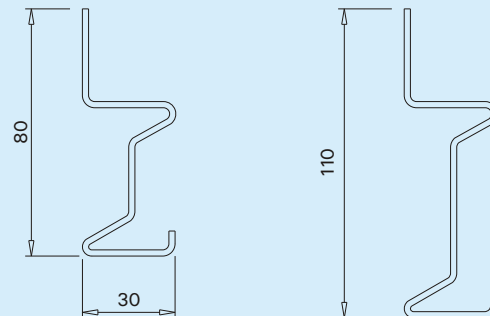


Shoe Plate (Ise03186)

Shoe plate specially designed on high tensile strength expansion bolts to secure uprights to floors. Where floors are uneven, a complete range of packing shims ensures absolute surface accuracy.

Dimensions : 110 mm W x 139 mm L

Finish : Powder Coating / Painting (Deep Orange)



Finish : Galvanised panel

MS Panel (Powder coating / Paint / Deep Blue).

Decking Panel : Galvanised Metafold Standard, Please specify when ordering !

For Enquiry Information

- I All load capacities assume uniformly distributed loads.
- II Technical Specification refers to our standard module and can be varied to your requirement.
- III Load member length upon request.
- IV Further Load Capacities upon request.
- V Further color upon request.

Technical Specification Required

- 1 Load unit type Pallet / Carton / Trays / Bins.
- 2 Load unit Size-(L X D X H) in mm.
- 3 Load unit weight for level / No. units + Wt. per unit.
- 4 First loading height means 1st level (H1).
- 5 Load Level fit for other levels (H2).
- 6 Warehouse Layout.

Cantilever Racking

Cantilever racking offers a simple cost-effective solution for the storage of bulky & long storage.

This includes easily surveyed space saving storage, secure and speedy placement and location as well as high loading & flexible storage.

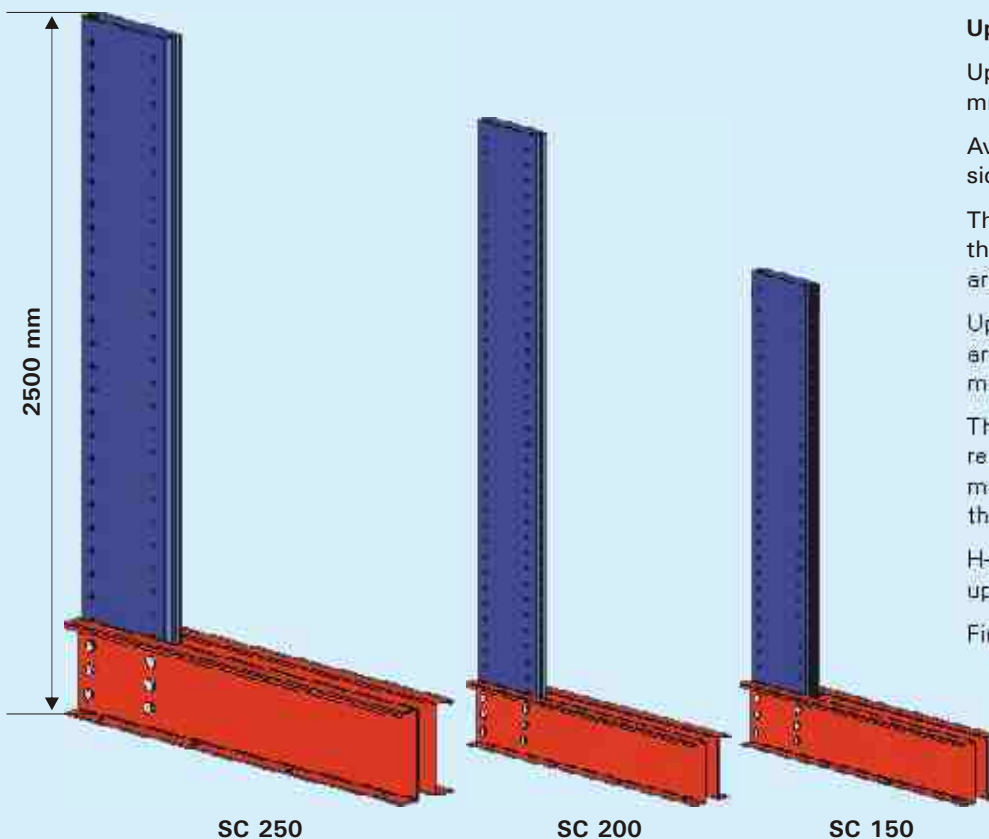
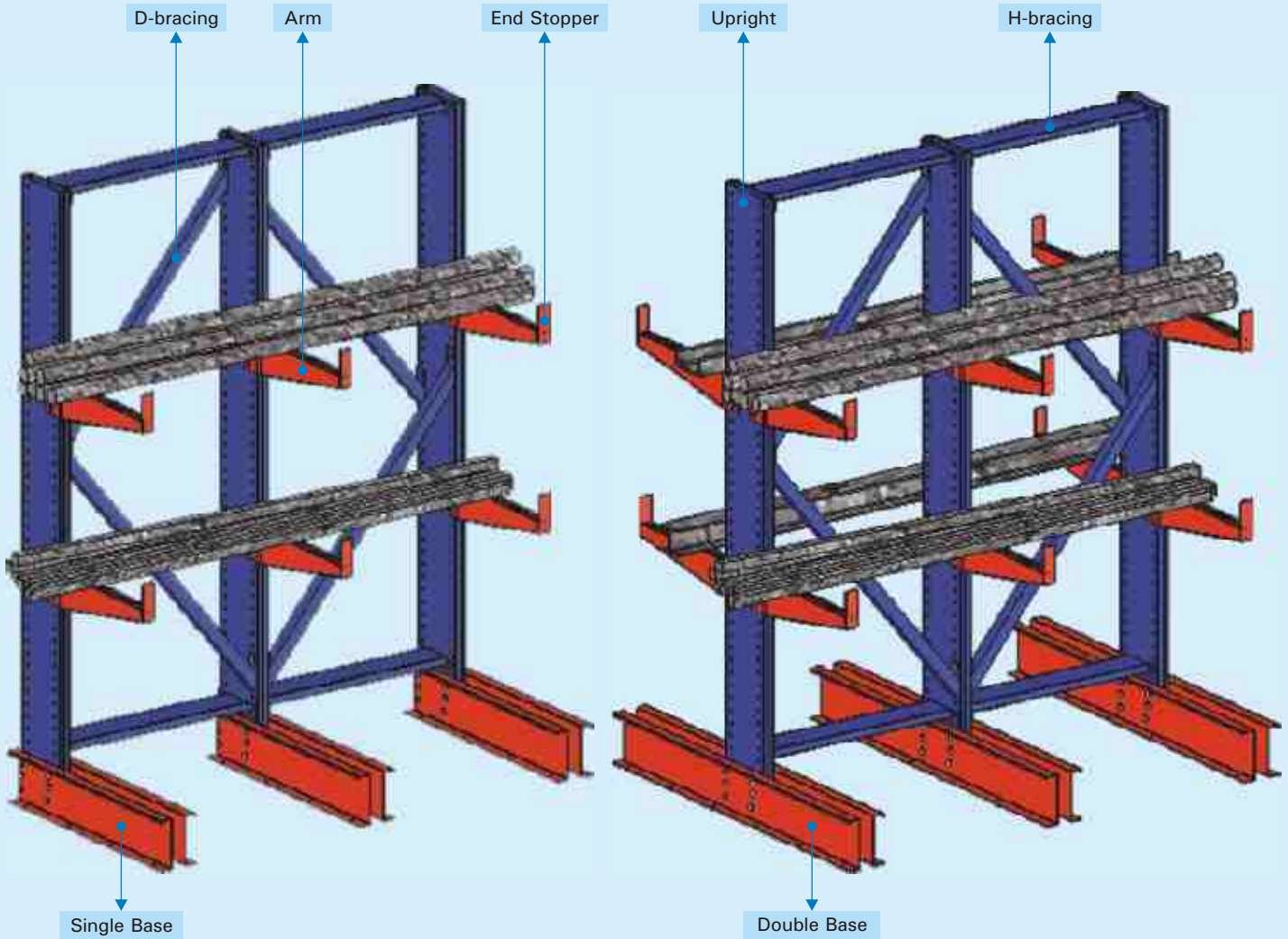
This is special storage of Round bars, Pipe, Square bars, Angles, Channels etc.

It can be Single or Double sided.



Project at : Alfa Laval

HIGH RISE STORAGE SOLUTION



Upright

Upright in heights of 1500 mm to 3000 mm is available.

Available in Single sided and Double sided.

The single sided model may be used for the conversion of wall spaces to storage areas.

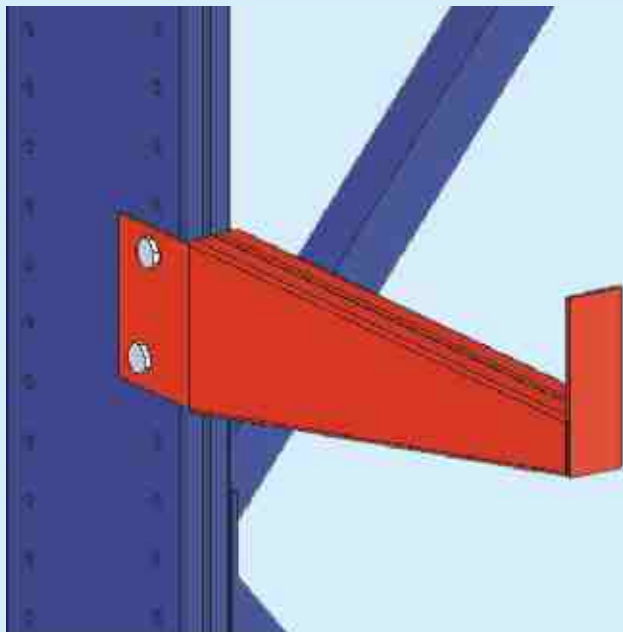
Uprights have along their sides an arrangement of punching holes at 50 mm pitch.

The cantilever arms are placed at the required height, depending on the stored material and anchored in position with the use of anchor fasteners.

H-bracing and D-bracing add to the uprights superior rigidity.

Finish : Powder coating / Paint
 Upright – Deep Blue
 Base – Deep Orange

HIGH RISE STORAGE SOLUTION



Arms

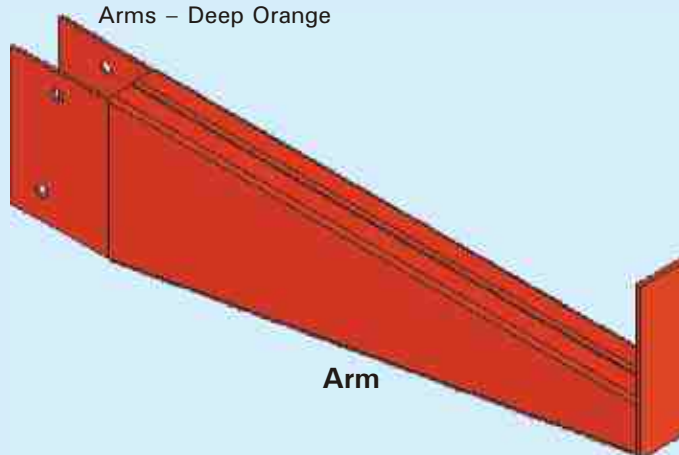
Cantilever arms can be supplied in lengths 400 mm, 600 mm, 800 mm and loads ranging from 400 kg to 1000 kg. By maintaining a constant upright width all cantilever arms may be used in combination, sizes for heavy & light goods or short and long arms.

This arrangement increases the stability of the rack.

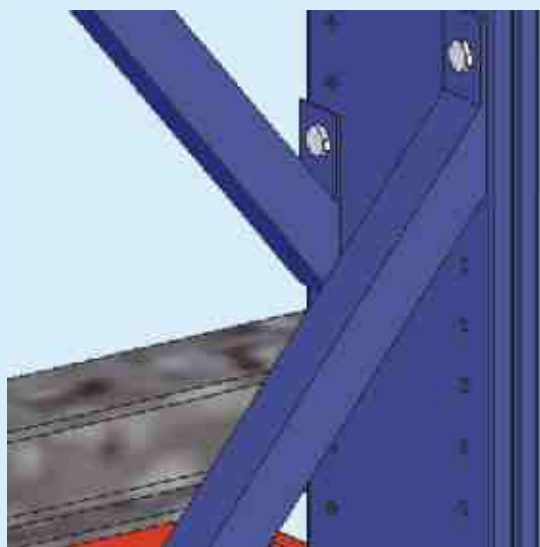
The loading of the cantilever arms may be approximately calculated as follows :

- The weight of the goods to be stored per storage level divided by the number of cantilever arms per storage level.
- The load per upright is obtained by cantilever arms per upright.

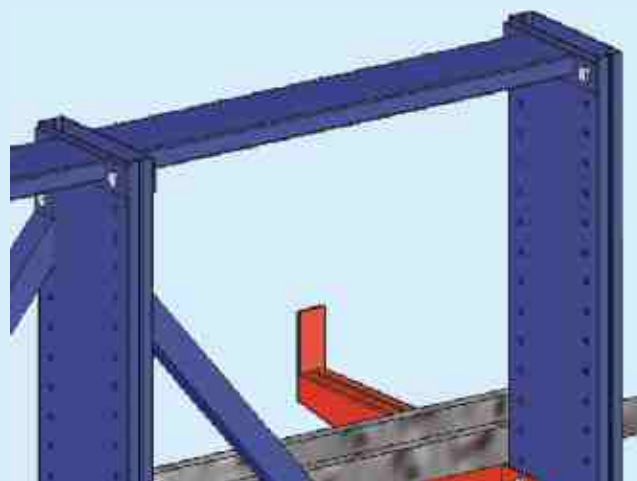
Finish : Powder coating / Paint
Arms – Deep Orange



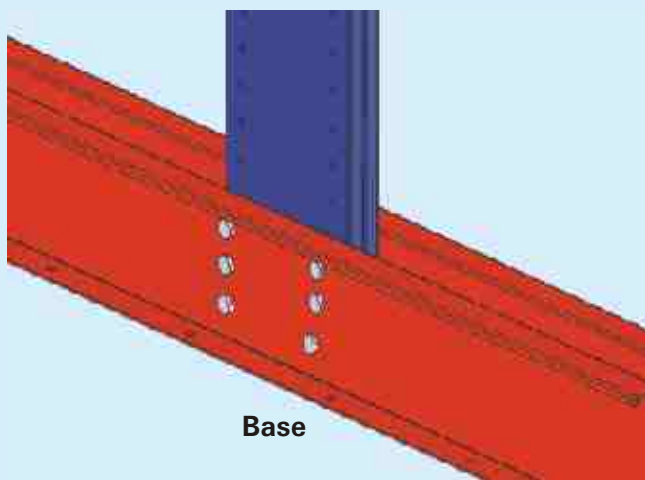
Arm



D-bracing



H-bracing



Base

Standard Specification

Height (mm)	Maxm. Arm Per Level	Clear Space Each Level (mm)
1500	2	500
2000	3	500
2500	4	400
3000	5	400

Arm Length, Maximum Loading and Height are all designed as per customer requirements.

HIGH RISE STORAGE SOLUTION

