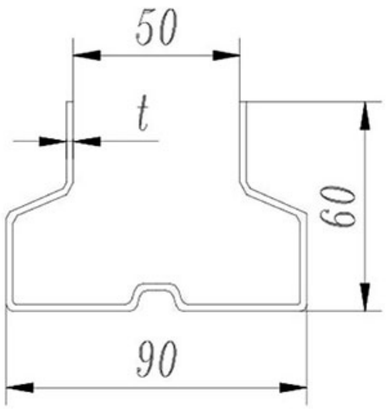
# Heavy Duty Rack

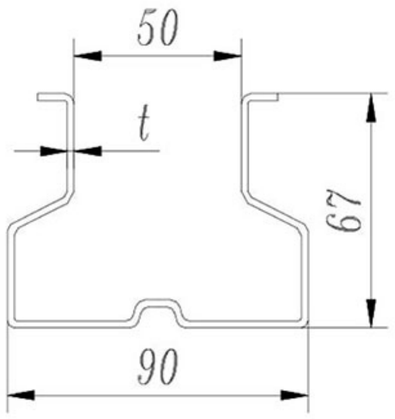
NANJING JINHUI STORAGE EQUIPMENT CO.,LTD

# 1. Frame

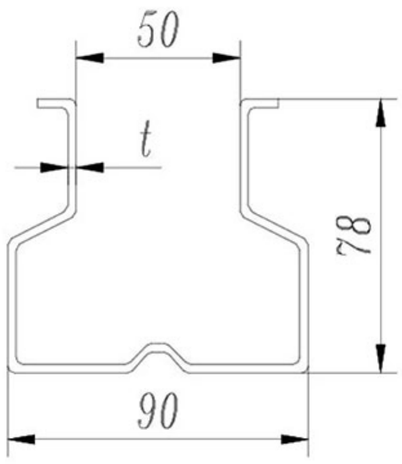
## 1.1 Upright Section Series



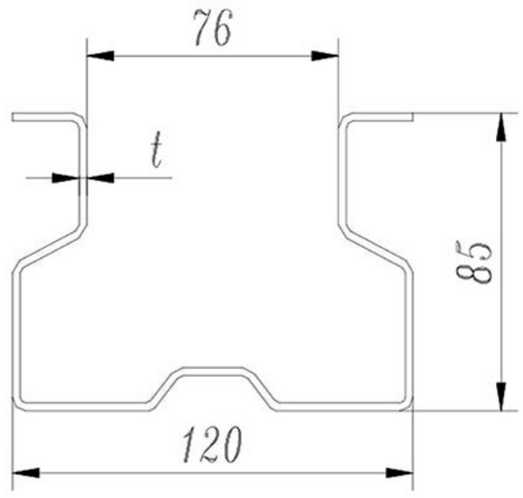

U9060 (t=1. 8, 2)




U9067 (t=2)

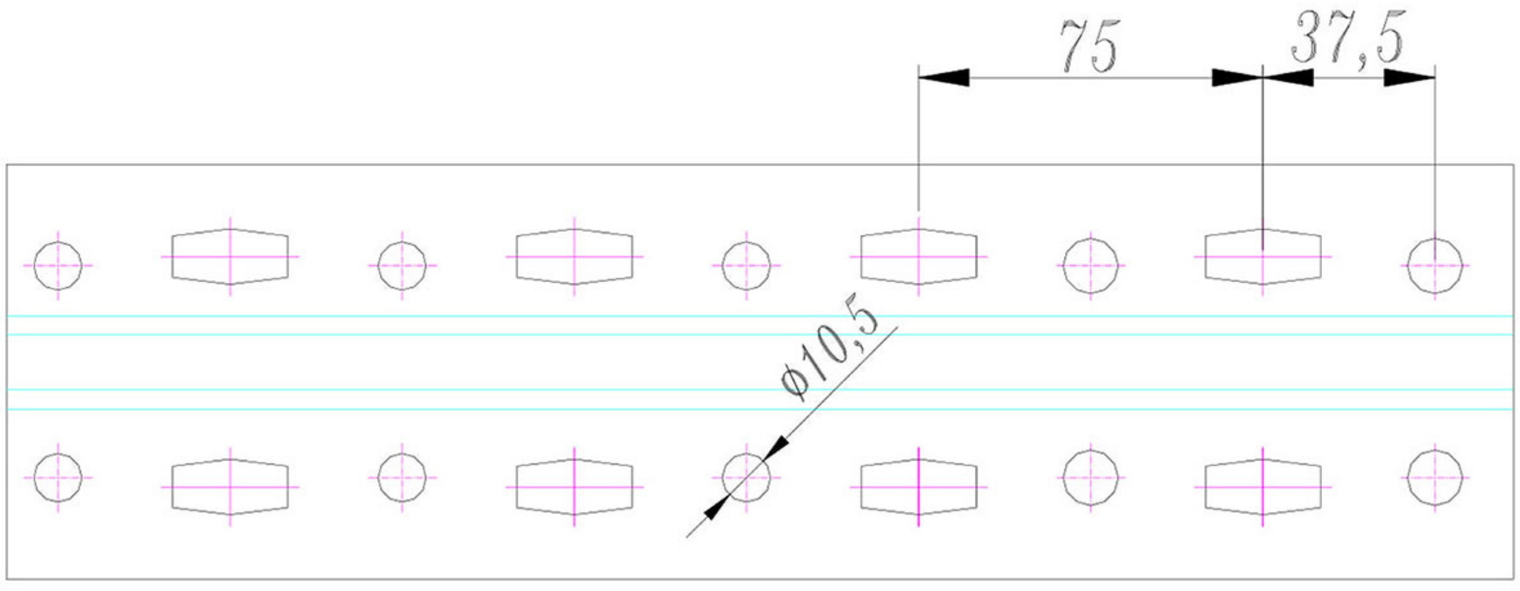



U9078 (t=2, 2. 5, 3)




U1285 (t=2, 2. 5, 3)

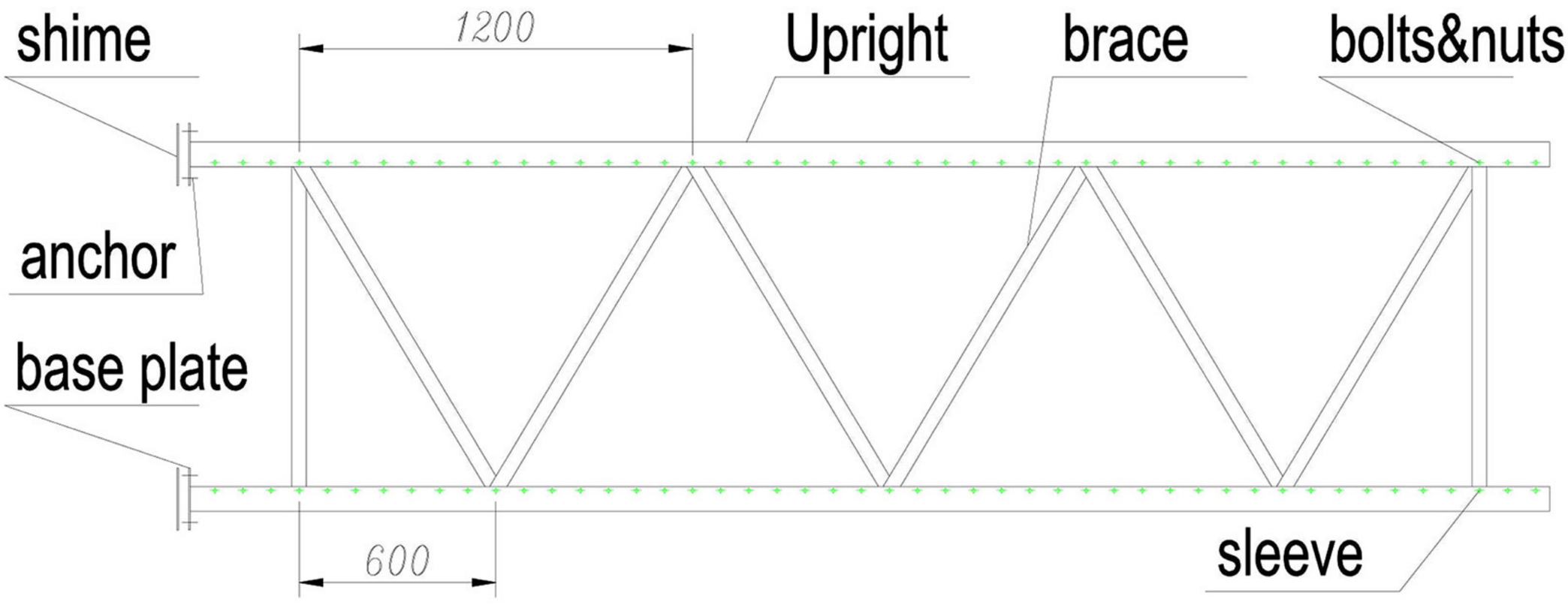
## 1. 2 Slot Style (frontal side)




**Note: Upright length should be multiple of pitch (75mm).**

## 1.3 Frame Assembly (See below drawings)

Consisted by①upright /②brace /③base plate /④bolts nuts /⑤anchor /⑥sleeve⑦shim



## 1.4 Components quantity per frame:

| No. | Components | Specification | Quantity/frame |
|---|---|---|---|
| 1 | Upright | according to design | 2 |
| 2 | brace | according to design | Floor((**H**-150) / 600)+2 |
| 3 | base plate | standards | 2 |
| 4 | Bolts & nuts | M10×65 | Brace qty + 3 |
| 5 | anchor | M10×75 | 4 |
| 6 | sleeve | standards | 2 |
| 7 | shim | standards | 1 |

Note:

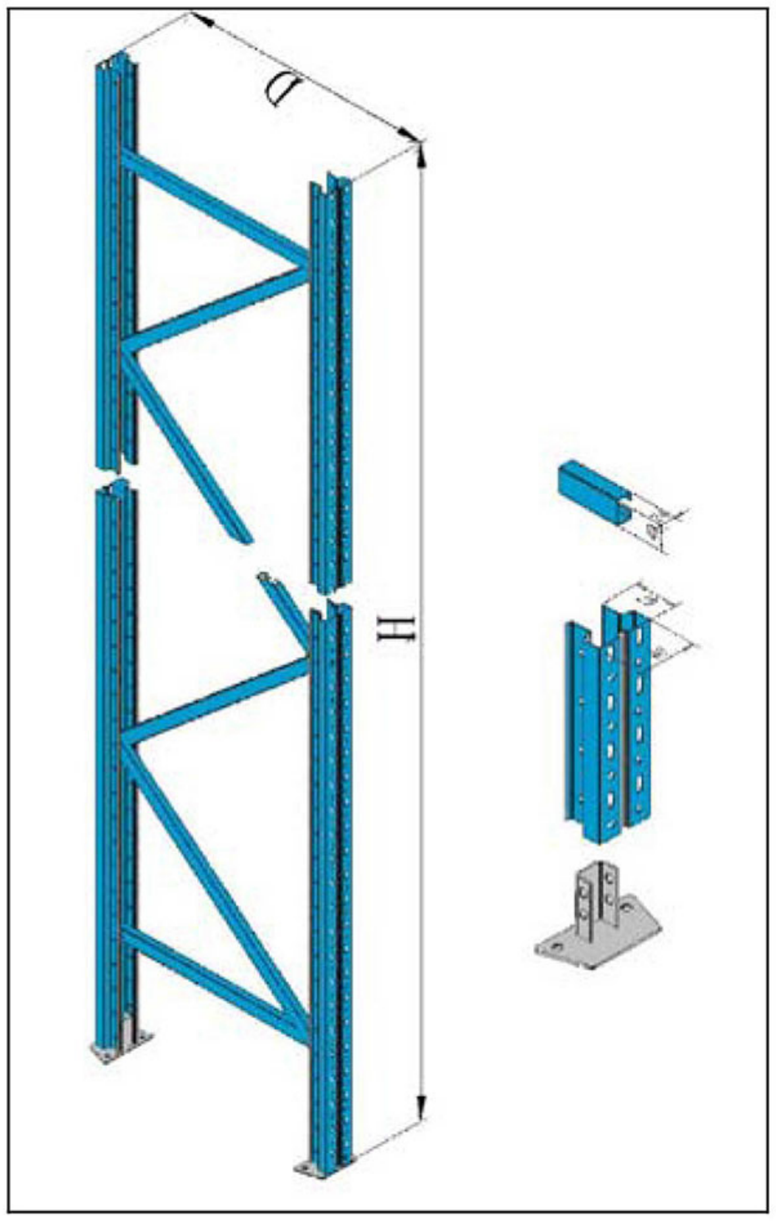
1) H----height of frame

2) Example calculation: If H=6000mm

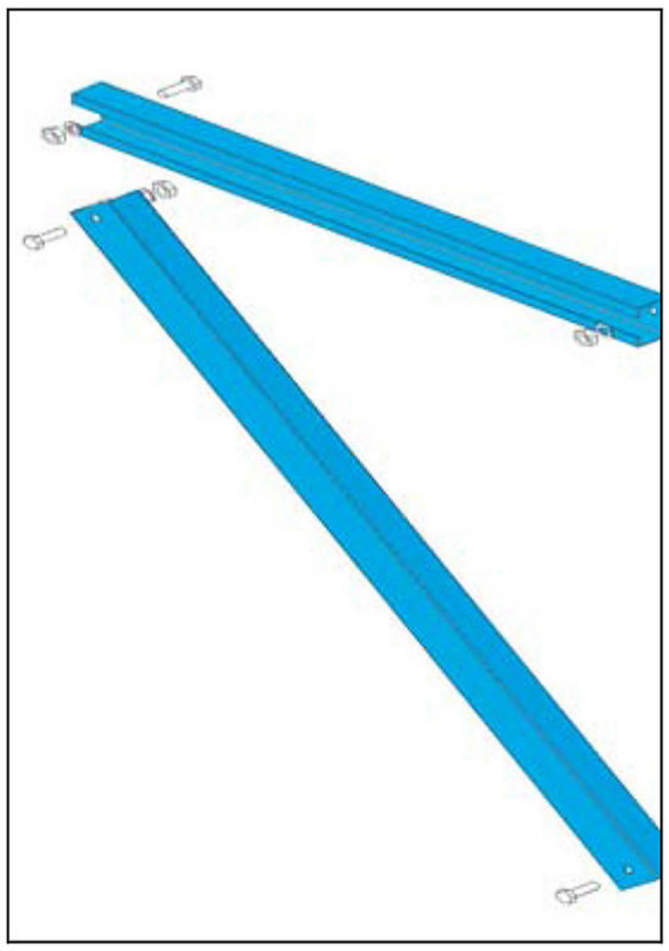
Brace qty = Floor ( (6000-150)/600)+2 = Floor(9.75) +2 = 9 +2 = 11

3) Brace section size: For U1285 upright : 55×37.5×1.5

For all other upright: 40×24×1. 2

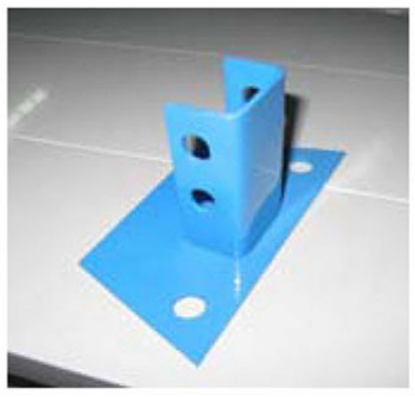



**Frame**



**brace**

**bolts & nuts**



**Base plate**

**shim**

**anchor**

**sleeve**

## 1.5 Frame Load Capacity table

**KG/Frame**

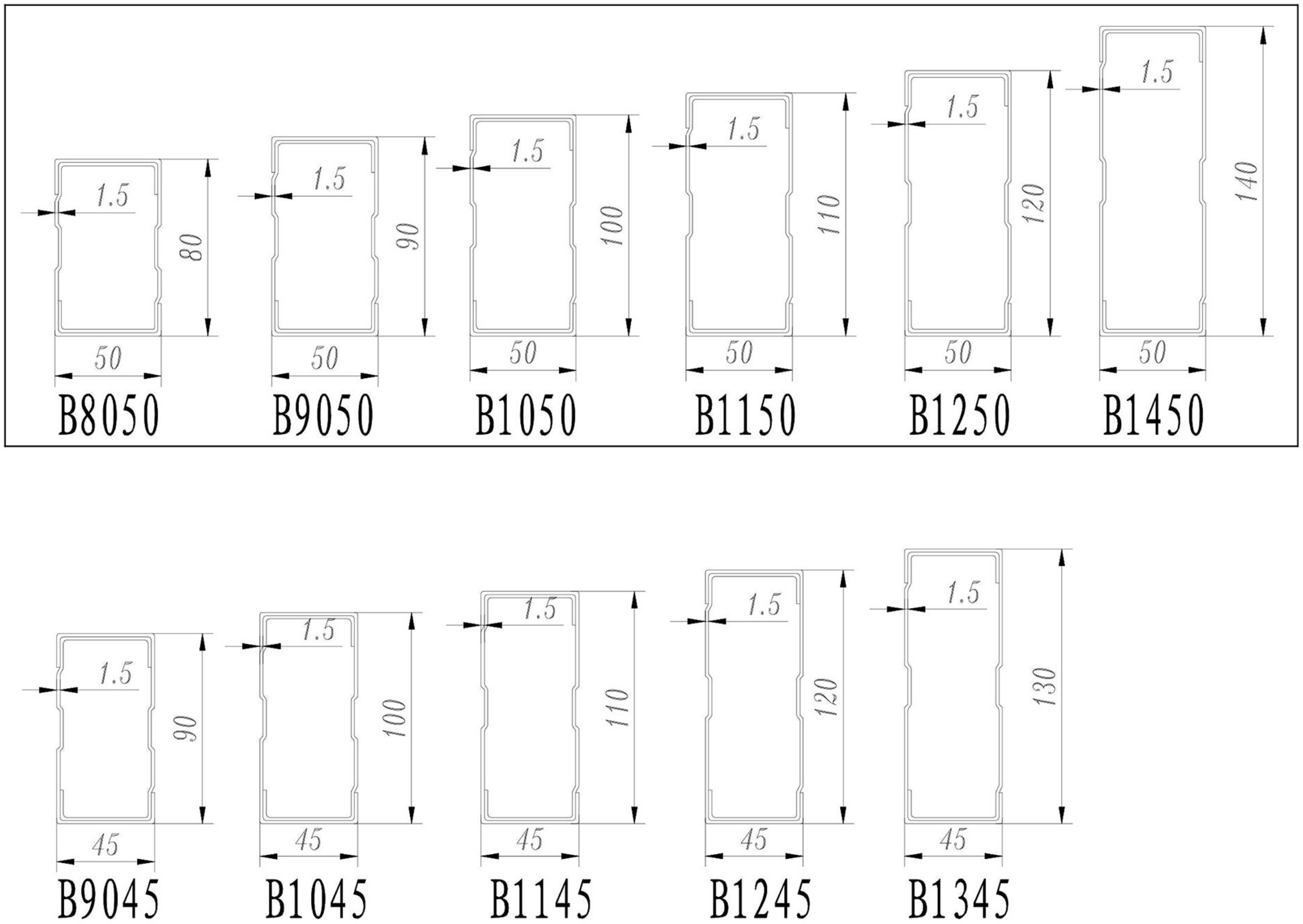
| Fist Beam Level(mm) | U9060*1.8 | U9060*2.0 | U9067*2.0 | U9078*2.0 | U9078*2.5 | U9078*3.0 | U12085*2.0 | U12085*2.5 | U12085*3.0 |
|---|---|---|---|---|---|---|---|---|---|
| **1200** | 7719 | 9500 | 11875 | 14250 | 17813 | 20781 | 17813 | 22563 | 26125 |
| **1500** | 6500 | 8000 | 10000 | 12000 | 15000 | 17500 | 15000 | 19000 | 22000 |
| **1800** | 5265 | 6480 | 8100 | 9720 | 12150 | 14175 | 12150 | 15390 | 17820 |
| **2000** | 4184 | 5150 | 6437 | 7725 | 9656 | 11266 | 9656 | 12231 | 14162 |
| **2200** | 3269 | 4023 | 5029 | 6035 | 7544 | 8801 | 7544 | 9556 | 11064 |
| **2500** | 2515 | 3095 | 3869 | 4642 | 5803 | 6770 | 5803 | 7351 | 8511 |
| **2800** | 1905 | 2345 | 2931 | 3517 | 4396 | 5129 | 4396 | 5569 | 6448 |
| **3000** | 1422 | 1750 | 2187 | 2625 | 3281 | 3828 | 3281 | 4156 | 4812 |

Note:

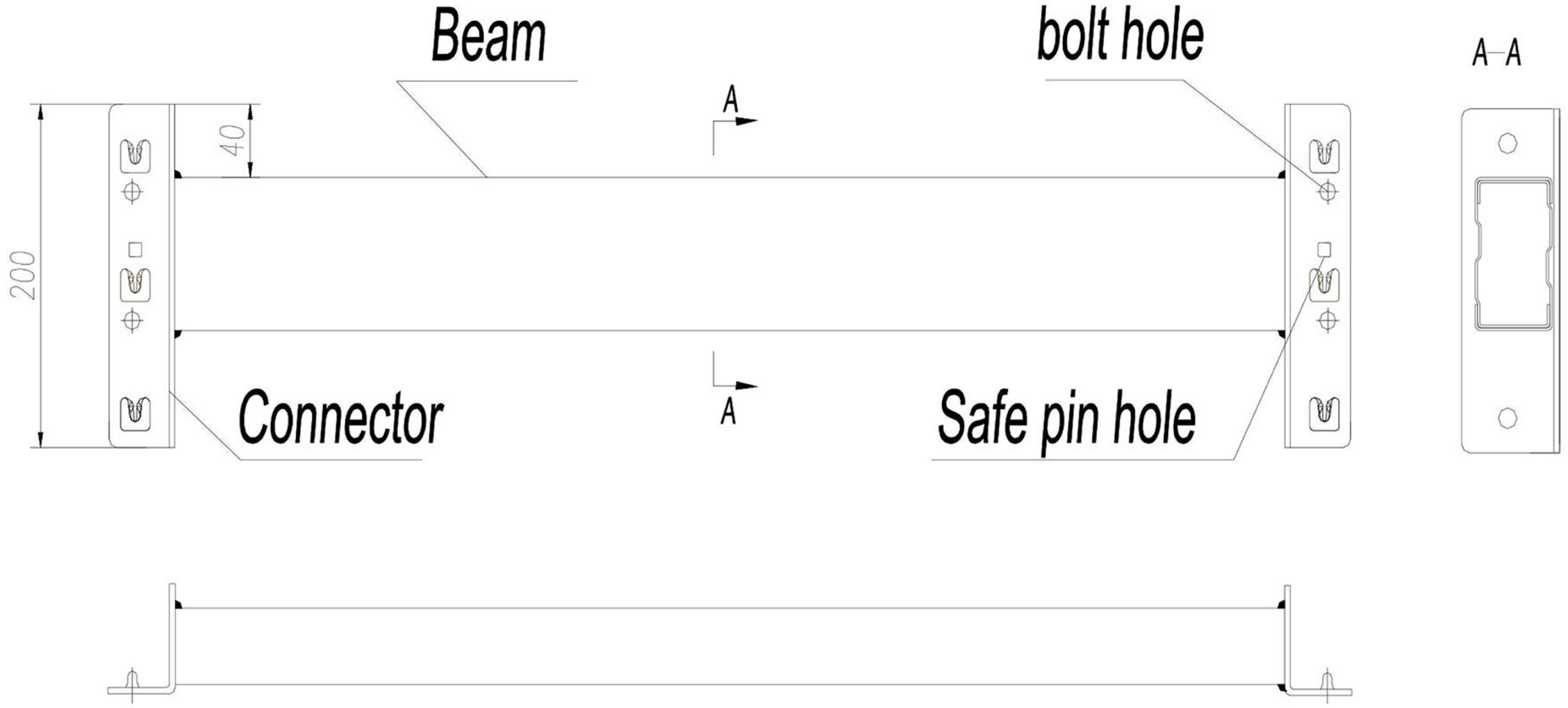
1. Frame Load capacity is based on Max. distance between beam levels in any bay.
2. IF the first beam level is smaller than distance between first beam and second beam, we also need to consider this situation.
3. All rack must be anchored at least one anchor/foot.

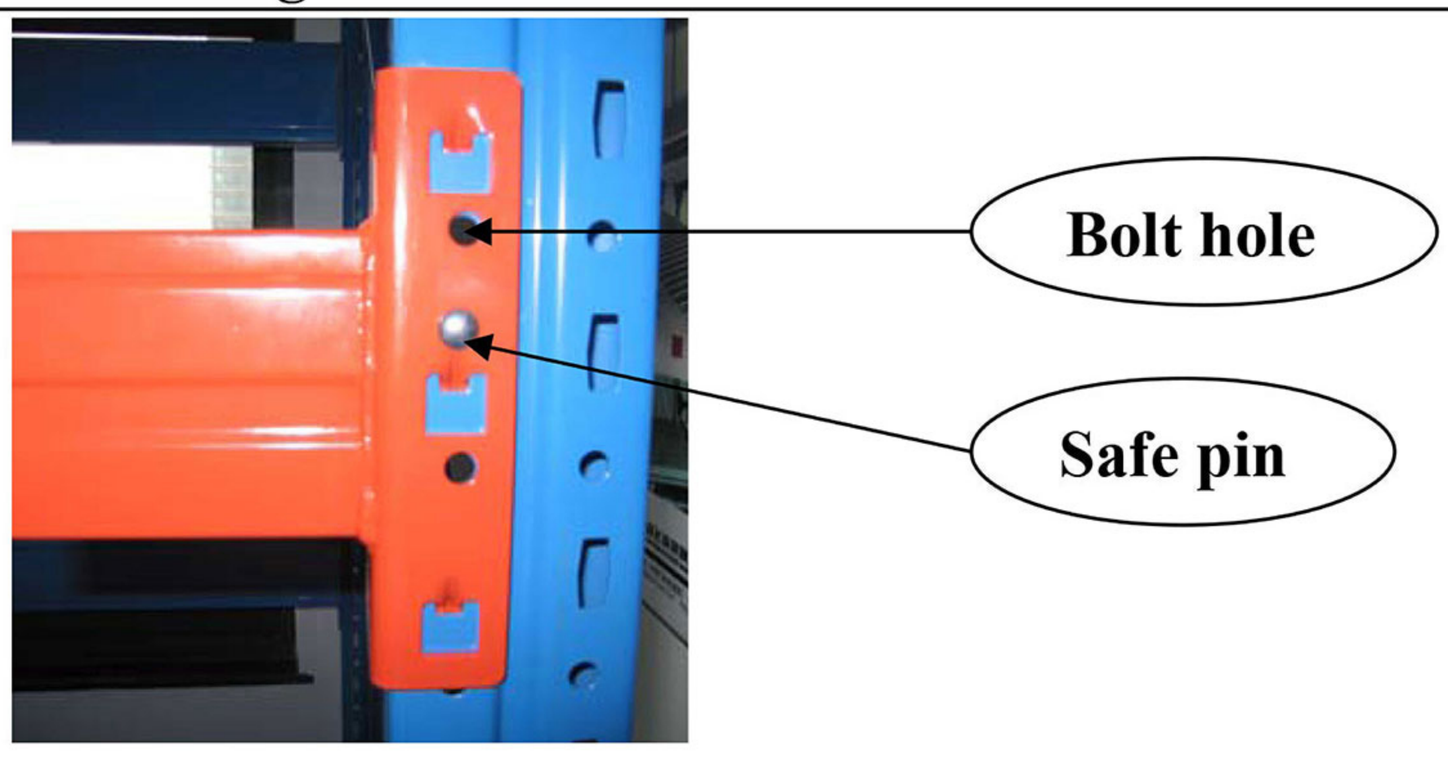
# 2. Beam

## 2.1 Box beam Section Series




## 2.2 Box beam Drawing






2.3 Box beam Load Capacity Table.

Kg/pair

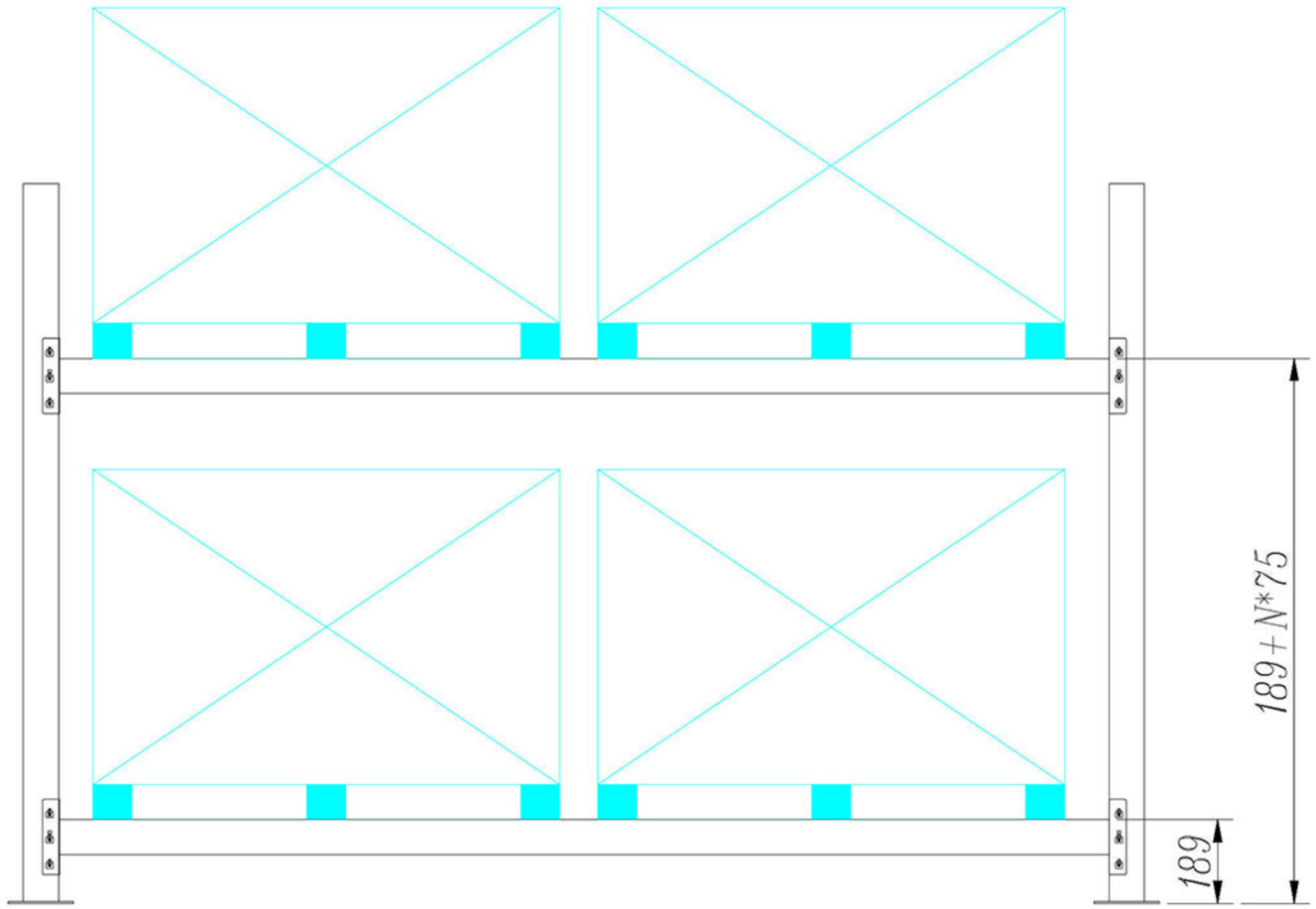
| Size(mm) | 1500 | 1800 | 2000 | 2300 | 2500 | 2700 | 3000 | 3300 | 3600 |
|---|---|---|---|---|---|---|---|---|---|
| **B8050** | 2600 | 2333 | 1890 | **1429** | **1210** | **1037** | 840 | 694 | 583 |
| **B9050** | 3000 | 3072 | 2489 | **1882** | **1593** | **1365** | 1106 | 914 | 768 |
| **B1050** | | 3500 | 3182 | **2406** | **2036** | **1746** | 1414 | 1169 | 982 |
| **B1150** | | | 3780 | **2858** | **2419** | **2074** | 1680 | 1388 | 1167 |
| **B1250** | | | 4000 | **3692** | **3125** | **2679** | 2170 | 1793 | 1507 |
| **B1450** | | | | | **4000** | **3854** | 3122 | 2580 | 2168 |

Kg/pair

| Size(mm) | 1500 | 1800 | 2000 | 2300 | 2500 | 2700 | 3000 | 3300 | 3600 |
|---|---|---|---|---|---|---|---|---|---|
| **B9045** | 3000 | 2858 | 2315 | 1751 | 1482 | 1270 | 1029 | 850 | 715 |
| **B1045** | | 3500 | 2961 | 2239 | 1895 | 1625 | 1316 | 1088 | 914 |
| **B1145** | | | 3515 | 2658 | 2250 | 1929 | 1562 | 1291 | 1085 |
| **B1245** | | | 4000 | 3430 | 2903 | 2489 | 2016 | 1666 | 1400 |
| **B1345** | | | | | 4000 | 3123 | 2530 | 2091 | 1757 |

Note:

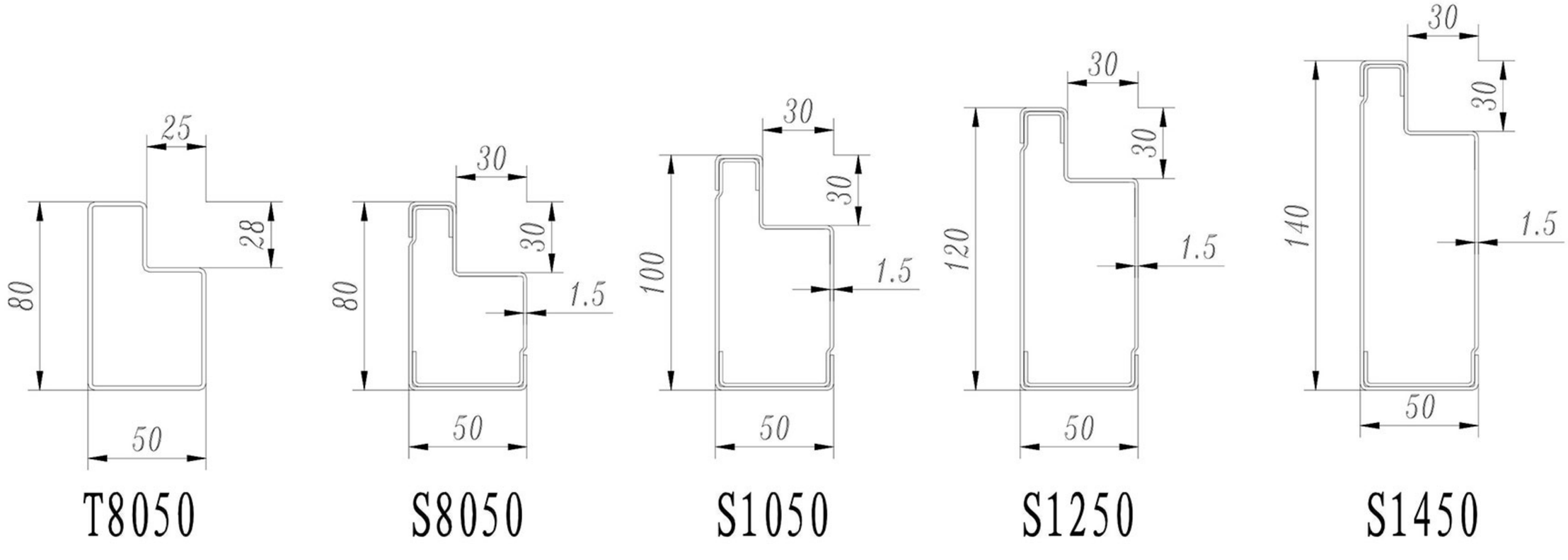
1) **B9045~B1345 are not popular section, need at least 1000 pcs to manufacture**.
2) According to FEM10.2.02, Beam deflection ≤L/200 (L---beam length) (uniform distributed load)
3) Min. height of first beam is 189mm(beam top surface---ground)
   Beam level = 189 mm +N×75mm (**N=1,2,3,…….**) (see below drawings)




4) We need to bolted the connector to upright to make it much safe When load requirements >**3000kg/level.**

5) The sizes in yellow color are popular size.

## 2.4 Step beam




## 2.5 Step beam load capacity table

Kg/pair

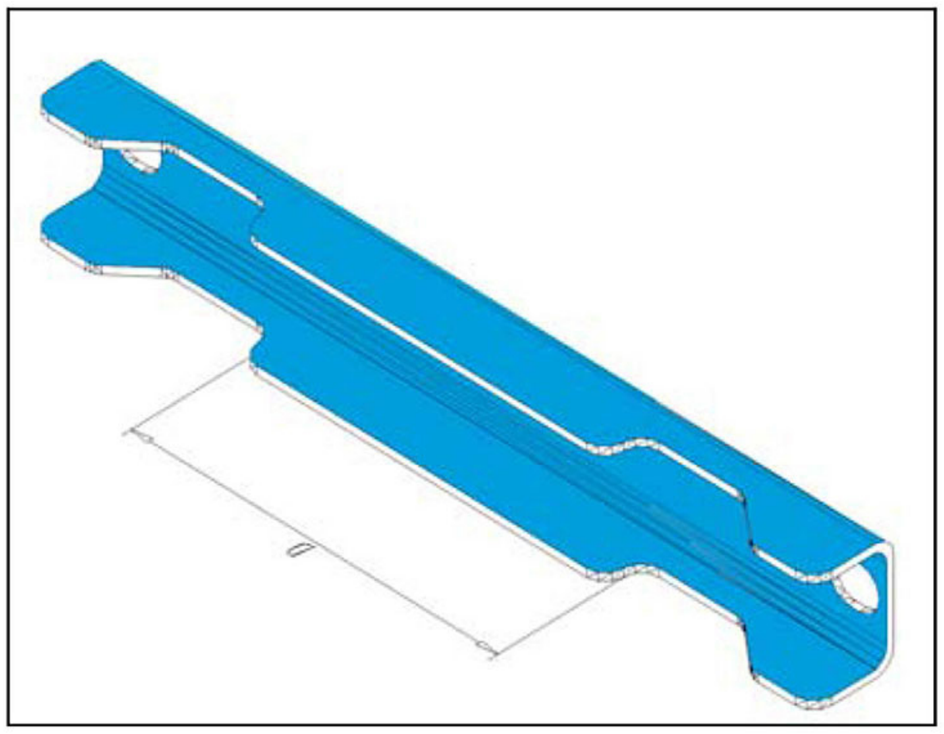
| Size | 1500 | 1800 | 2000 | 2300 | 2500 | 2700 | 3000 | 3300 | 3600 |
|---|---|---|---|---|---|---|---|---|---|
| **T8050** | 1736 | 1206 | 977 | 738 | 625 | 536 | 434 | 359 | 301 |
| **S8050** | 2500 | 1944 | 1575 | 1191 | 1008 | 864 | 700 | 579 | 486 |
| **S1050** | | 3267 | 2646 | 2001 | 1693 | 1452 | 1176 | 972 | 817 |
| **S1250** | | | 4000 | 3216 | 2722 | 2333 | 1890 | 1562 | 1313 |
| **S1450** | | | | 4000 | 3830 | 3284 | 2660 | 2198 | 1847 |

Note:

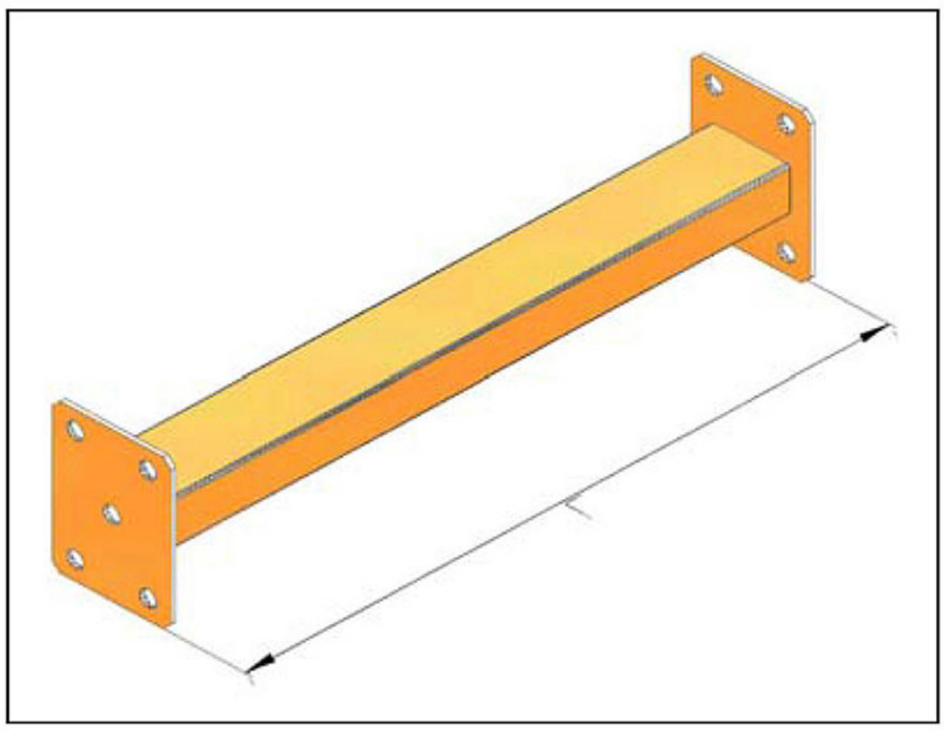
1) According to FEM10.2.02, Beam deflection ≤L/200 (L---beam length) (uniform distributed load)
2) Min. height of first beam is 189mm(beam top surface---ground)
   Beam level = 189 mm +N×75mm (**N=1,2,3,……**) (same with above )

# 3. Accessories

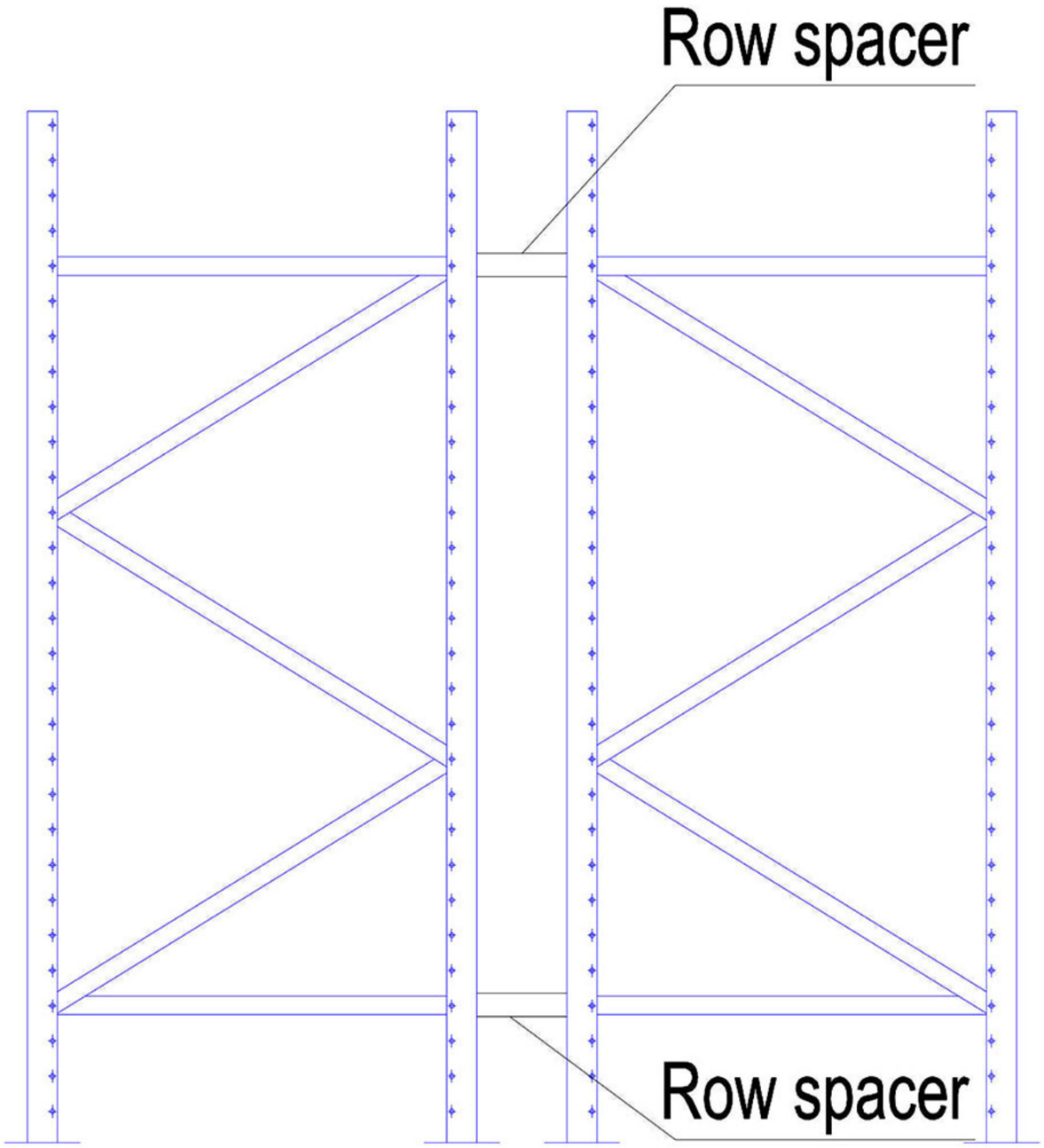
## 3.1 Row spacer



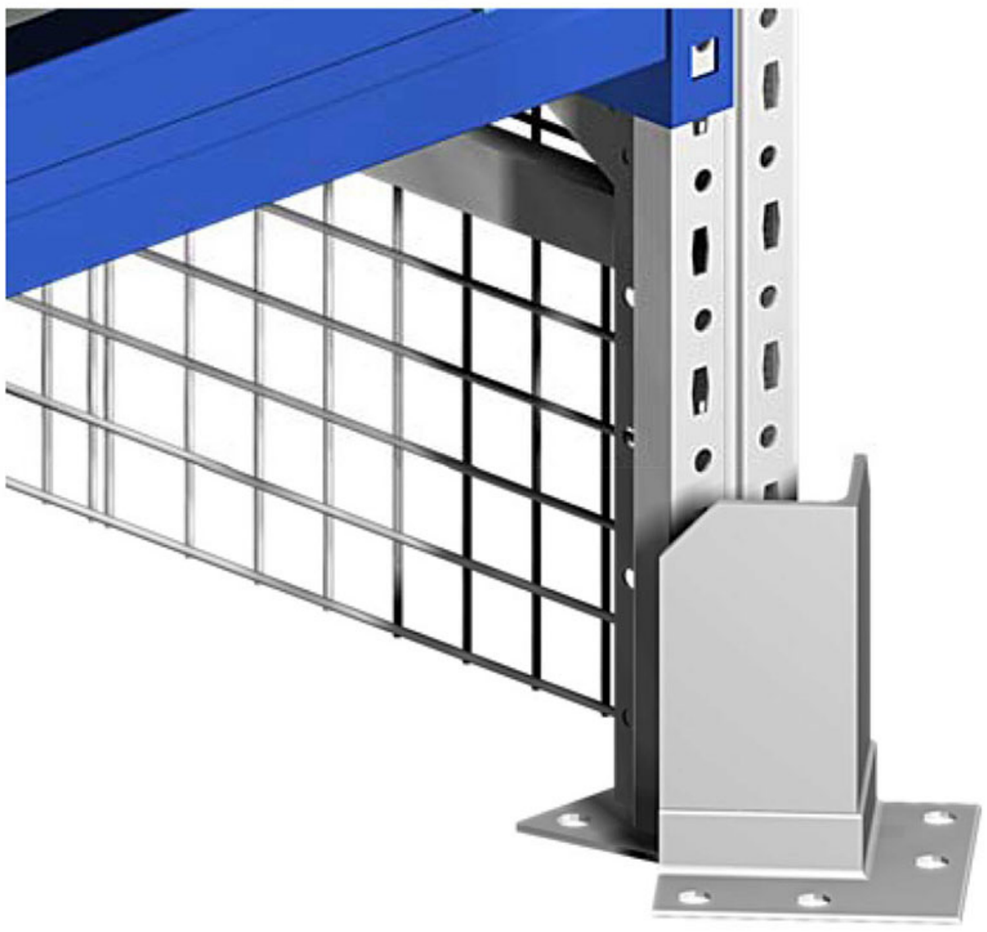
1. Use: connect two frame to make the whole structure stable;
2. Only for upright U9060 and U9067;
3. Popular size: 200mm, 250mm,300mm, 400mm, 500mm,600mm
4. Popular design: 2 pcs / back to back frame See below drawing
5. Section size: 30×30
6. Bolts & nuts : 2—M10*65 / pc



1. Use: connect two frame to make the whole structure stable;
2. For upright U9078 and U1285;
3. Popular size: L200mm, L250mm,L300mm, L400mm, L500mm,L600mm
4. Popular design: 2 pcs / back to back frame See below drawing
5. Section size: 50×30 tube
6. Bolts & nuts : 8—M10*30 / pc

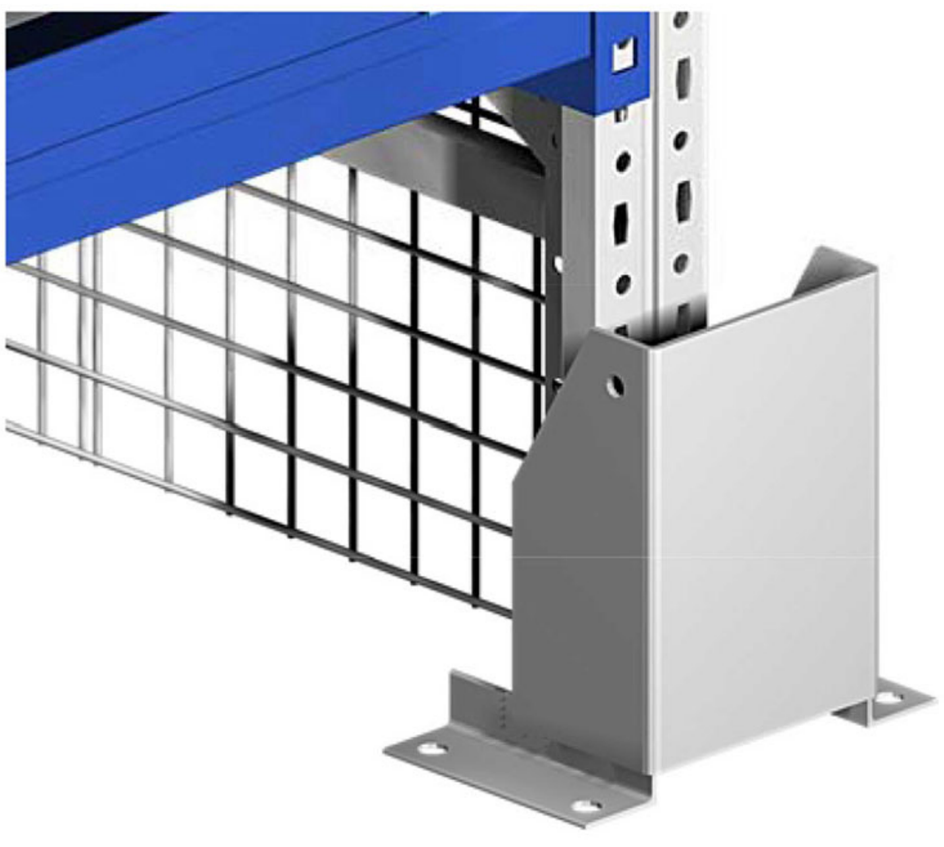


## 3.1 Column guard(angle steel)



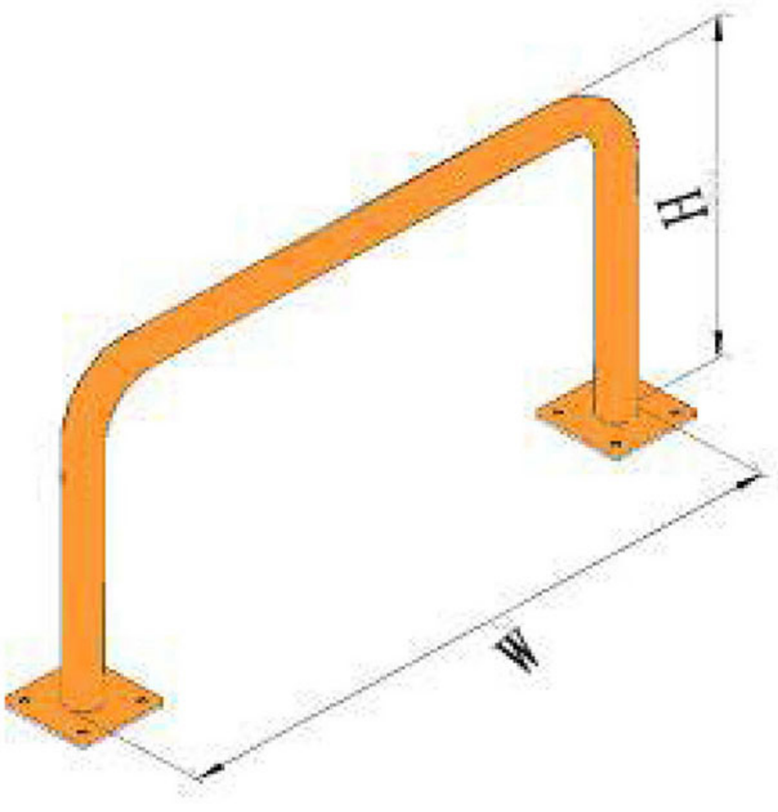
1. Use: Protect upright from collision.
2. Popular size: H300mm
3. Popular design: Upright at the corner position
   Or beside aisle.
4. Section size: 100mm×100mm×10mm
5. Anchor : 4—M12*110 / pc

## 3.2 Column guard (U shape)



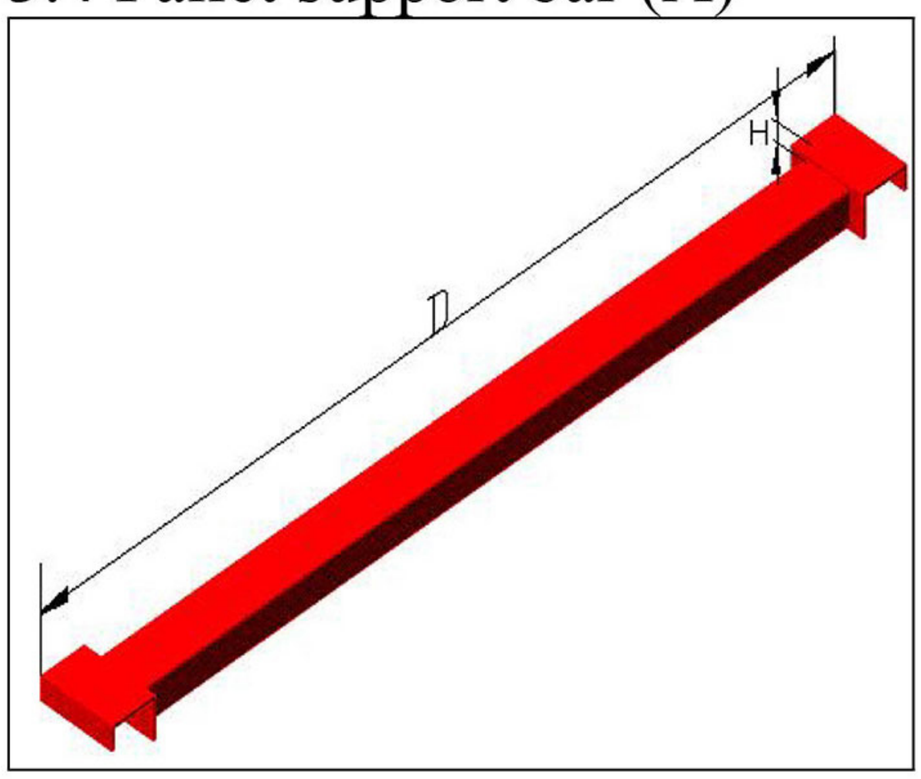
1. Use: Protect upright from collision.
2. Popular size: H300mm
3. Popular design: Upright at the corner position
   Or beside aisle.
4. Section size: 205mm×165mm×4mm
5. Anchor : 4—M12*110 / pc

## 3.3 End barrier/ Frame Protector



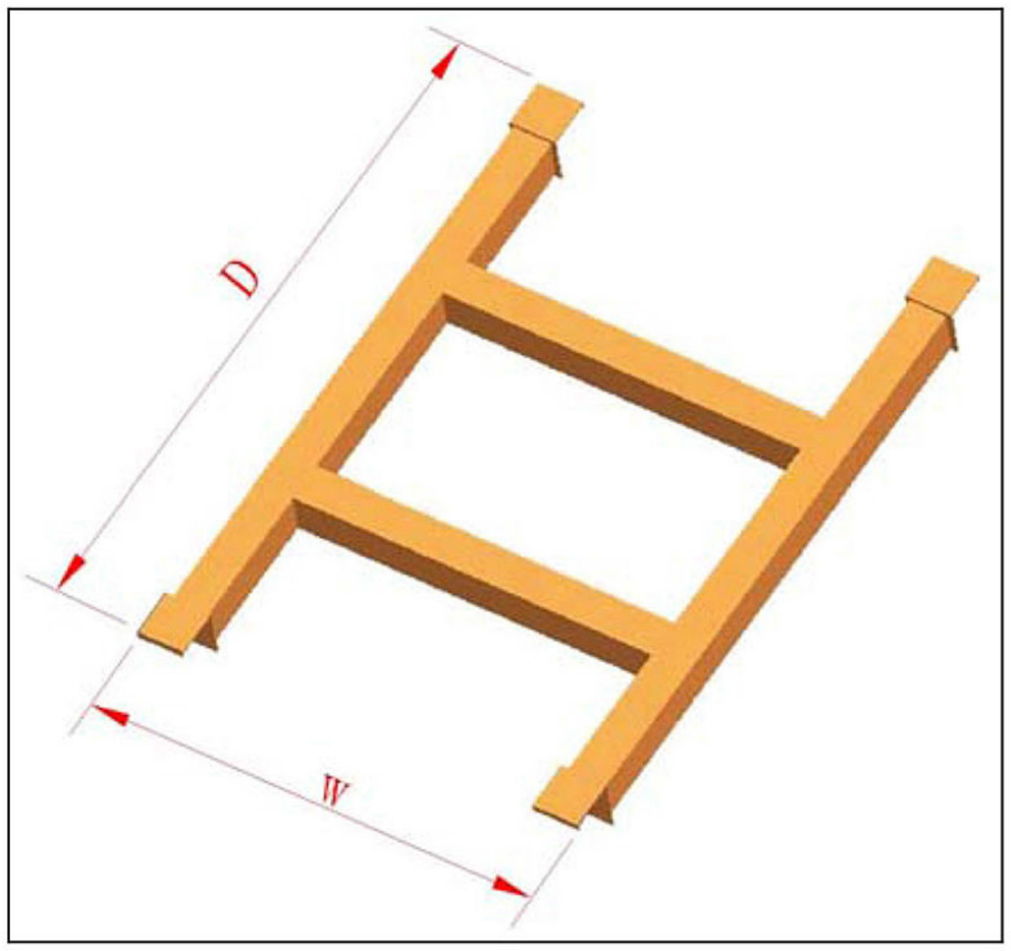

1. Use: Protect frame from collision.
2. Popular size: H300mm
   W800, W900, W1000, W1100
3. Popular design: Frame near main aisle.
4. Section size: ¢75mm round tube
5. Anchor : 8—M12*110 / pc

## 3.4 Pallet support bar (A)



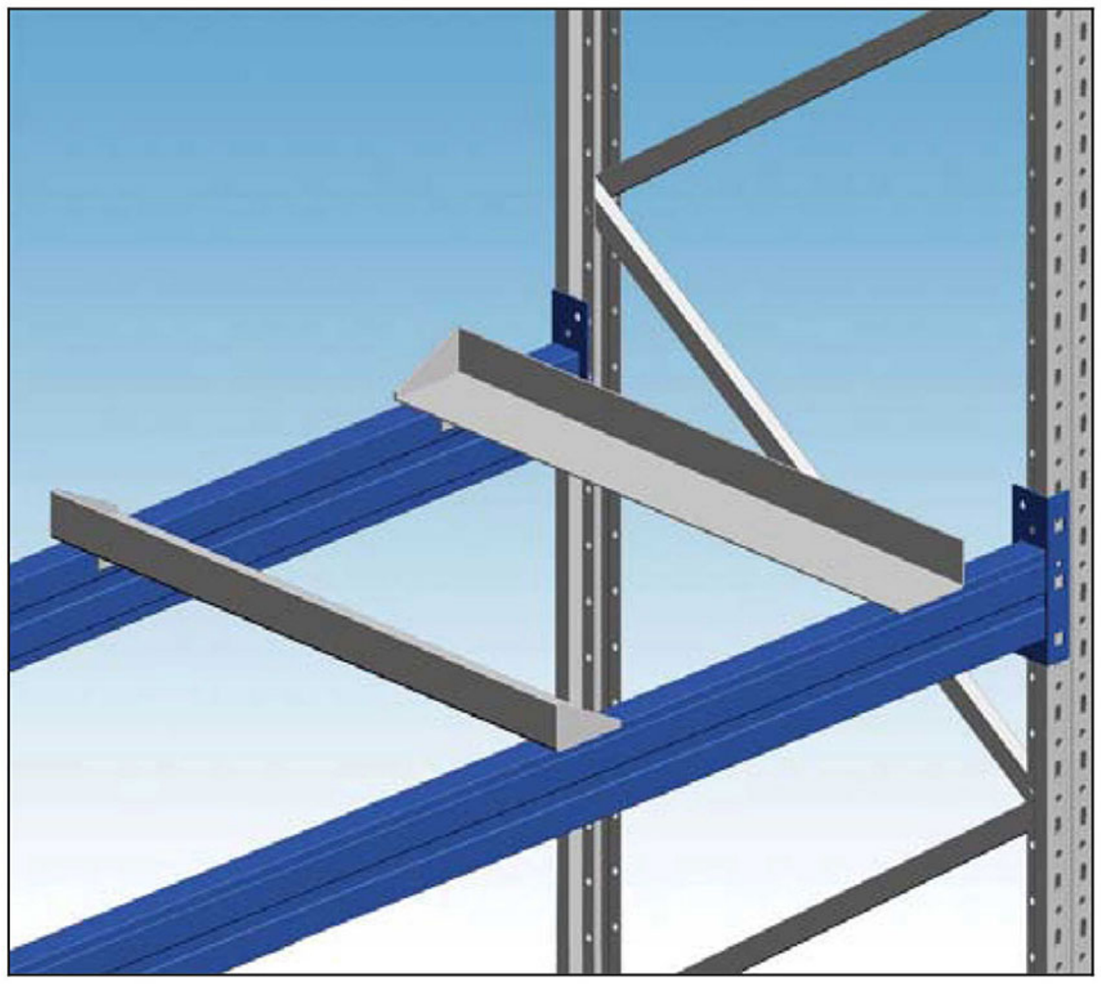

1. Use: To support different size pallet;
2. Popular Size: D800~D1200;
3. Section Size: 50×30mm;
4. Load Capacity: 1000~1500kg/pair;
5. Popular Design: 2pcs/pallet;
6. Assembly: Just put on the beams;

## Pallet support bar (B)



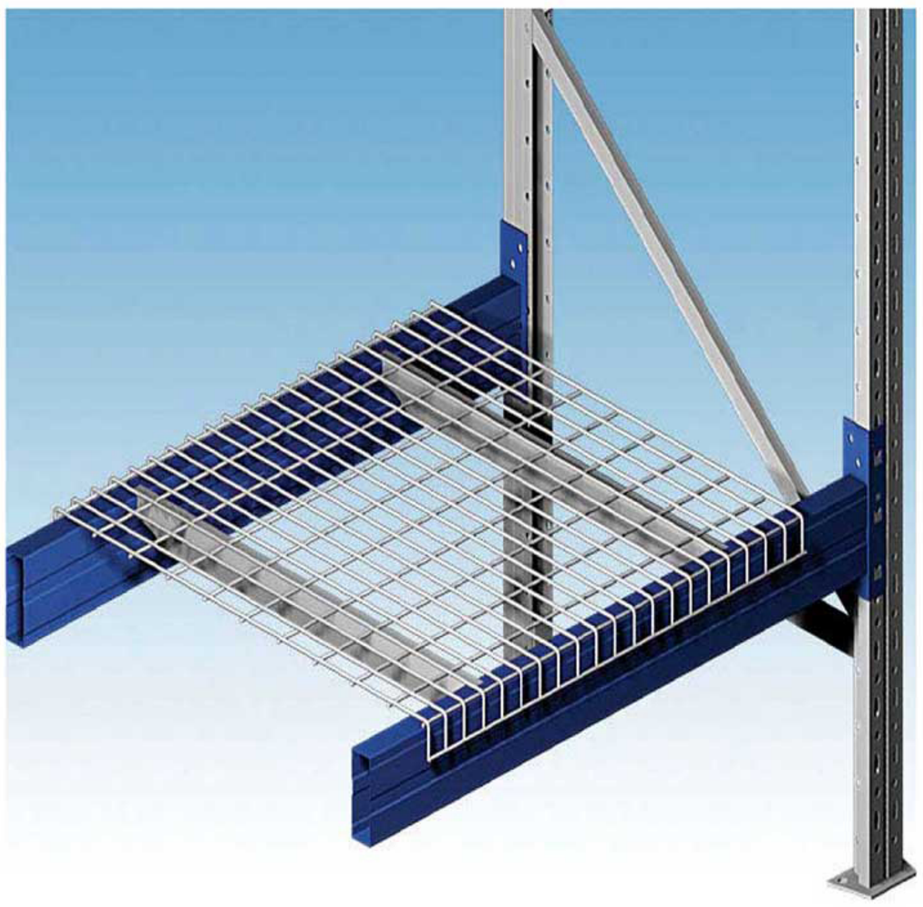

1. Use: To support different size pallet;
2. Popular Size: D800~D1200
3. Section Size: 50×30mm
4. Load Capacity: 1000~1500kg/pc
5. Popular Design: 1pcs/pallet
6. Assembly: Just put on the beams

## Pallet support bar (C)



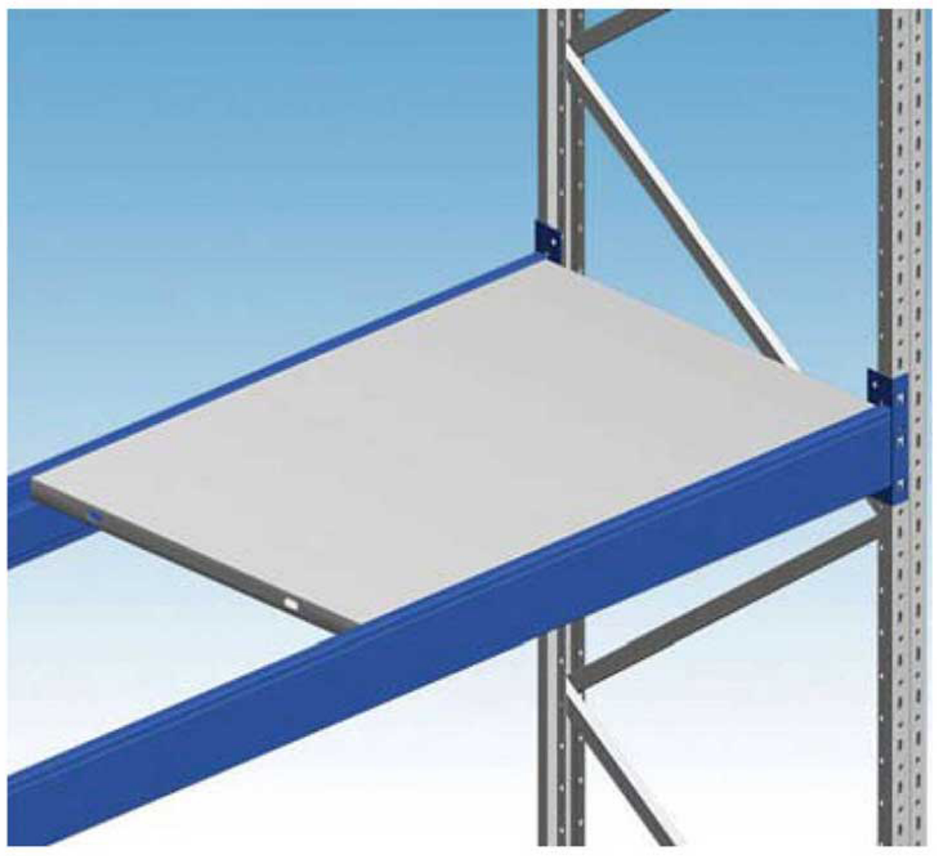
1. Use: To support special containers which only have 4 feet (no long legs)
2. Popular Size: D800~D1200
3. Section Size: 100×50mm angle steel with Pallet stopper
4. Load Capacity: 1000~1500kg/pair
5. Popular Design: 2pcs/container
6. Assembly: need to be screwed in the beam by bolt at two ends

## 3.4 Wire deck



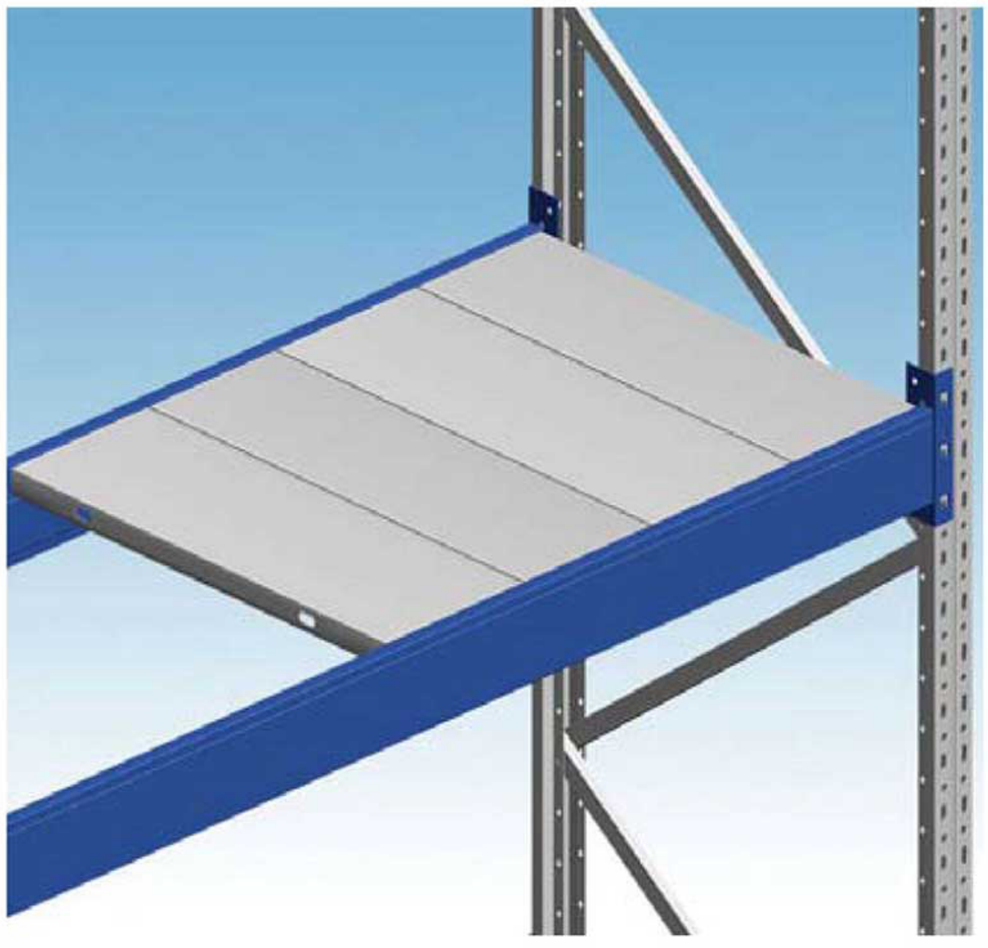
1. Use: To support different size pallet;
   Storage bigger size box;
   Anti-falling down from top level
2. Popular Size: D800~D1200
3. Wire Size: 100×50×6mm wire with 2 ribs
4. Load Capacity: 1000~1500kg/pc
5. Popular Design: 1 pc/pallet
6. Assembly: just put on beams
7. Note: how many ribs depend on load
   Requirement
8. Galvanized.

## 3.5 Steel shelf (powder coated)



1.Use: To support different size pallet;
Storage box or small components;
2. Standard Size: D800~D1200mm
W500, W600mm
Thickness: 0.8mm
Welding ribs underneath.
3. Load Capacity: depend on depth and how many ribs.
4. Popular Design: combine with step beam
5. Assembly: just put on beams

## 3.6 Steel shelf (pre-galvanized)



1. Use: Storage box or small components;
2. Standard Size: D800~D1200mm
W149mm
Thickness: 0.8mm
4. Load Capacity: depend on depth.
5. Popular Design: combine with step beam
6. Assembly: just put on beams