

META MULTIPAL Battery Storage Racks



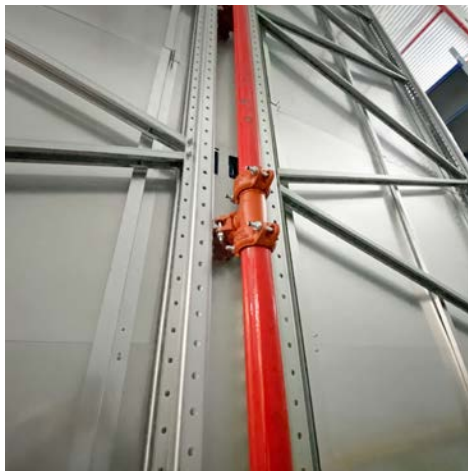
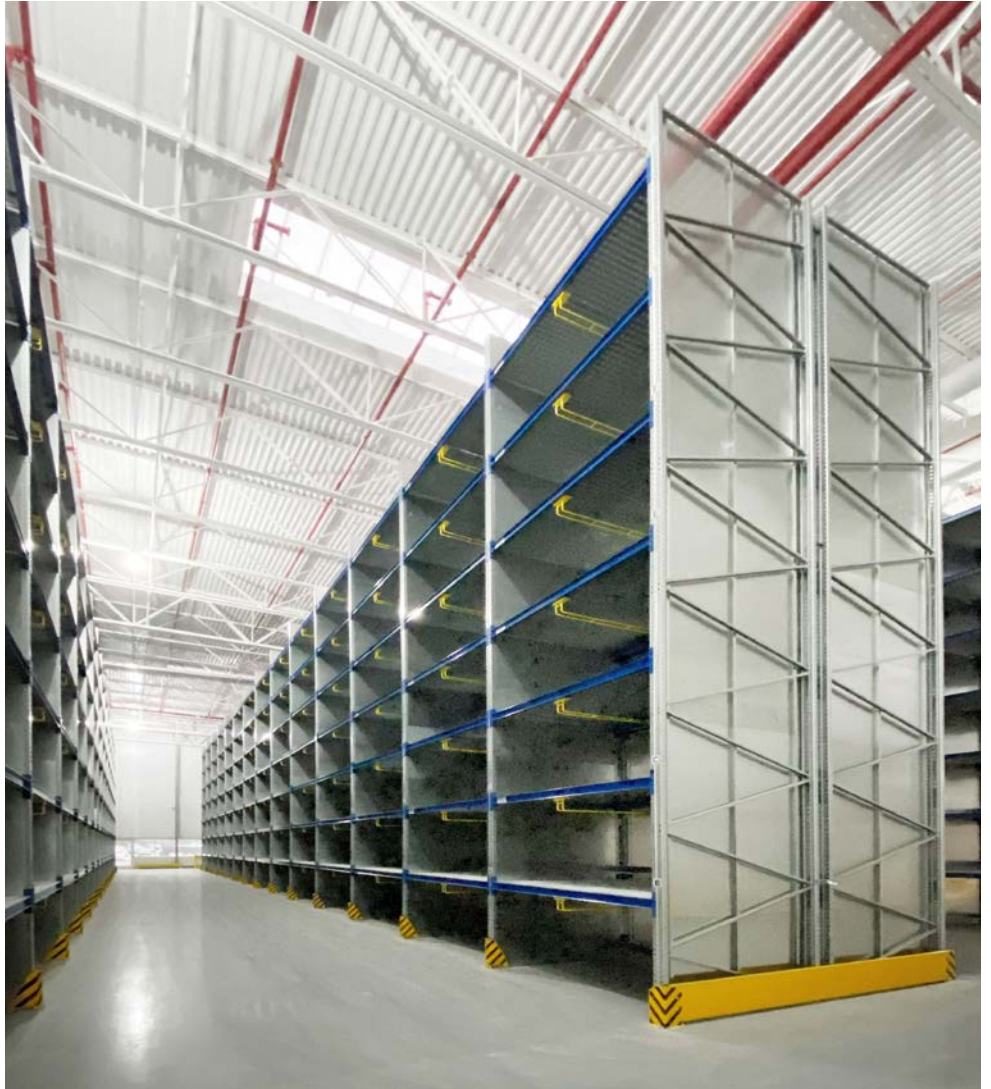
Battery Storage Racks – META MULTIPAL

META Storage Solutions Inc. has developed a new battery storage system based on our META MULTIPAL pallet rack. The new system, specifically designed for storage of lithium-ion batteries used in the automotive industry, features vertical and horizontal fire baffles as well as in-rack sprinkler systems with sprinkler guards for maximum security.



Our dedicated team of engineers and project managers will assist you throughout the project lifecycle from design throughout installation and permitting.

The system was created to meet stringent code requirements for battery storage and fire safety requirements in the United States and has already been implemented by major fortune 100 manufacturers in the local automotive industry. Its modular nature and the newly developed decking solution with integrated fire baffle allow for an easy and quick adjustment of the system that local code requirements may call for.



Picture Caption: sprinkler risers run along the outside of the racking frame, feeding the horizontal main-lines running along every level.



Picture caption: a sprinkler head is featured on every level and protected by a customized sprinkler guard. The sprinkler head is centered in every storage compartment for maximum efficiency.

Heavy Duty Grating With Integrated Fire Baffle

Loading requirements will be met by a specifically designed presslocked grating. The code requirements will be followed by combining the fire baffle and the grating. The innovative assembly process of grating and fire baffle ensures a high quality product keeping the installation in the storage system quick and easy. This system can be used for structural I-beams as well as box beams.



integrated steel lip allows recessed integration with racking beam and can be customized to guarantee a smooth surface



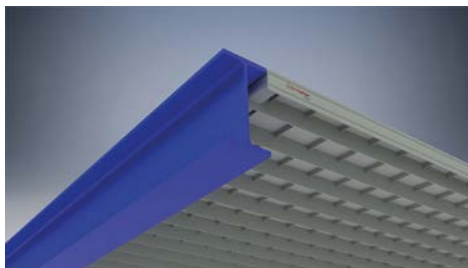
Fire baffle is made of high quality galvanized steel and customizable in thickness to meet any local requirements



Grating specifications can be customized to meet specific load and point load requirements



Our decking solution is compatible with different beam types including box beams, I-beams and structural beams





Benefits of META MULTIPAL pallet racking systems

- META MULTIPAL pallet racks – quality MADE IN GERMANY
- Decades of experience in the development and production of pallet racking systems
- META, your contact partner – from the technical advice stage, through project planning, up to and including assembly
- META pallet racking systems meet the requirements of modern flows of goods and materials. Their adaptability to particular goods volumes and the weight requirements of load carriers make them the optimal storage system.
- They provide the perfect storage locations for all commonly used loading devices such as Europallets and mesh box pallets. Other types of loading devices can be accommodated using combinations of system accessories taken from our META range.
- META warehouse furnishings are rigorously tested and meet the relevant regulations and quality standards. Our pallet racking systems carry the RAL-RG 614/2 quality mark.

META is a member of the association for warehousing technology and facilities, and the RAL-RG 614 in quality association in the Hague. META MULTIPAL® is accredited with the recognised RAL 614/2 quality mark for warehousing and operating facilities. META also carries the RAL quality mark for shelving and mobile racking systems and for multi-tier systems.



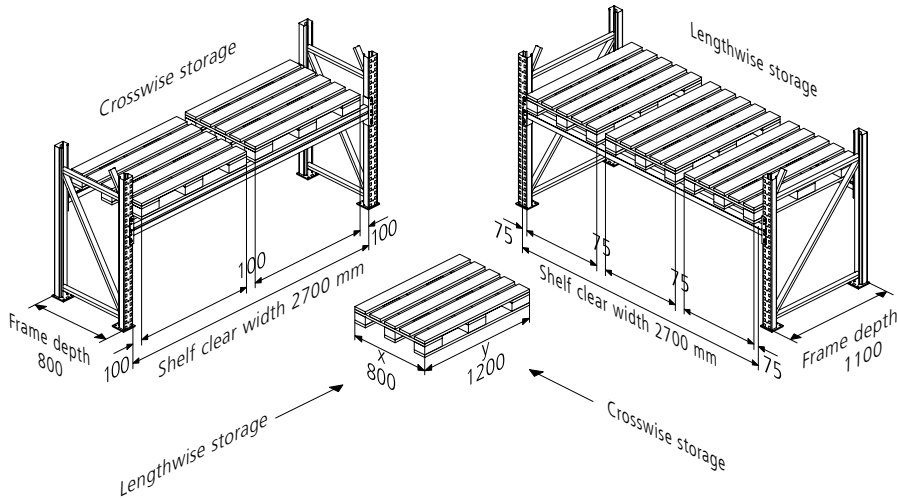
For convenience of transport, the frames are supplied unassembled. On request, we can carry out the assembly for you at an extra charge.



The geometric design of the beam agrafe ensures an optimal fit with the perforations in the post. The result is a form-locked and friction-locked joint

Planning & measurement aids

Multi-location storage



META MULTIPAL is the perfect solution for rationalised, well-arranged and adaptable pallet storage. These sturdy pallet racking systems meet all the practical requirements for the flows of goods and materials in the modern warehouse.

- Individual shelf loads up to 5.5 t
- Bay loads up to 20.0 t; higher shelf loads up to 25.0 t on request
- Beams attachable in 50 mm steps
- META MULTIPAL products are RAL-RG 614/2 quality-assured
- META MULTIPAL carries the GS mark
- Static verification is based on the DIN EN 15512 standard
- The load data for uprights and beams must take account of the number of bays, height of racks and beam arrangement (beam levels and shelf heights). If these differ from the pre-defined values, the load data change and must be planned individually by META.

META MULTIPAL

Standard height of uprights:

Galvanised version:
from 2,200 mm to 12,000 mm

Plastic coated version:
from 2,200 mm to 6,000 mm
continuous uprights above
6,000 mm as extension frame

Standard beam length:

1,800, 2,200, 2,700, 3,300,
3,600 mm
other sizes on request

Standard rack depth:

800, 1,100 mm

Surface:

- Frames galvanised, alternatively frames in RAL 5010 gentian blue (plastic-coated) for an additional charge
- Galvanised cross-bracing
- Beams RAL 2001 red-orange (plastic-coated)



Planning & measurement aids

To select the uprights & beams:

1. Determine the beam load
2. Calculate the bay load as the sum of the beam loads
3. Select the beams according to shelf load
4. Select the upright according to bay load and shelf height

■ Note on safety:

- Load dimensions may exceed nominal dimensions!
- Lift height of operating truck: Top edge of highest beam plus 200 mm
- The bay load data apply to units consisting of one basic bay and at least three add-on bays, with at least three beam pairs per bay.

Horizontale en verticale vrije ruimte voor de heftruck in een sectie

Hoogte van de drager van de vloer tot in een dragerhoogte van mm	X mm	Y mm
3000	75	75
6000	75	100
9000	75	125
13000	100	150

Note on planning:

Starter bay:

Uprights 85/17 and 85/20:
Nominal width + 170 mm

Uprights 100/20 and 100/21:
Nominal width + 200 mm

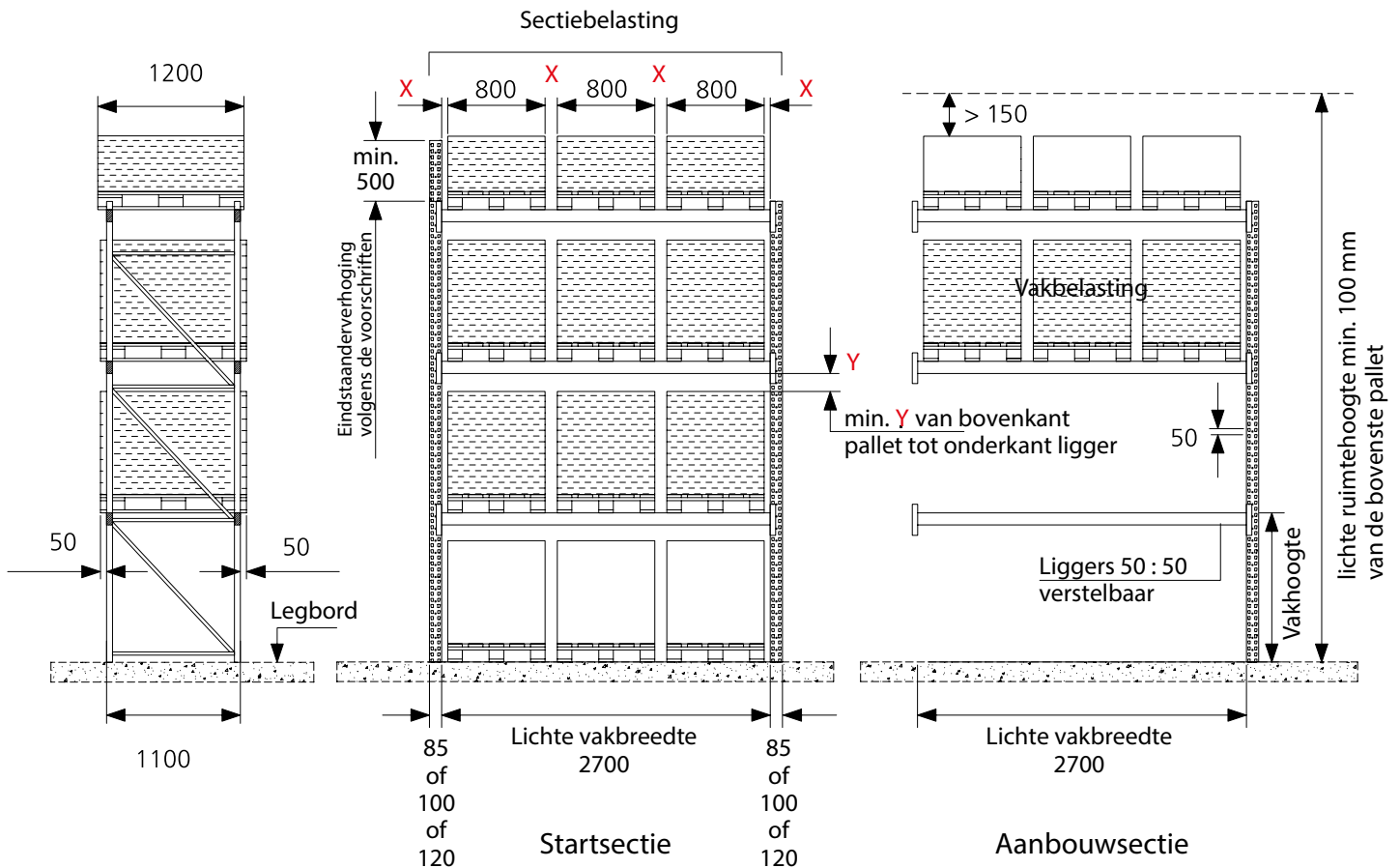
Uprights 120/20 and 120/25:
Nominal width + 240 mm

Add-on bay:

Uprights 85/17 and 85/20:
Nominal width + 85 mm

Uprights 100/20 and 100/21:
Nominal width + 100 mm

Uprights 120/20 and 120/25:
Nominal width + 120 mm



Load data for uprights & beams

Which beam & which upright can bear which load?

META MULTIPAL bay loads: The frame load data refer to racks with a maximum height of 8 metres (highest beam), up to 12 m on request.

The loads refer to racks with:

- at least 4 bays
- at least 3 beam levels
- load evenly spread
- one shelf width ≤ 2700 mm or > 2700 mm and ≤ 3600 mm

If shelf widths are greater than 2700, the beams should be at least HN 120-20. If the beam cross-sections are smaller for these shelf widths, then bay loads must be reduced. In this case, please contact us for advice. Bay loads depend on the upright/beam combination. If planning a project, please contact us for greater details.

Higher bay loads up to 25 t with frame type 120/25 available on request!

■ Frame performance data:

Bay loads

Beam sections up to shelf width ≤ 2700 mm

Beam sections up to shelf width $> 2700 \leq 3600$ mm

Upright type	Shelf height mm	Beam sections up to shelf width ≤ 2700 mm							Beam sections up to shelf width $> 2700 \leq 3600$ mm			
		HN 85/15	HN 85/20	HN 100/20	HN 120/20	HN 140/20	HS 140/15	HS 155/17	HN 120/20	HN 140/20	HS 140/15	HS 155/17
SR 85/17	1000	7300	7300	7300	7350	—	—	—	7250	—	—	—
	1500	6750	6750	6800	6800	—	—	—	6750	—	—	—
	2000	6300	6300	6400	6450	—	—	—	6300	—	—	—
SR 85/20	1000	9600	9700	9700	10000	10000	10000	10000	9100	9200	9300	9900
	1500	8650	8900	8950	9200	9200	9200	9250	8300	8650	8800	9150
	2000	7800	7950	8250	8600	8650	8700	8750	7800	8250	8500	8650
SR 100/20	1000	13100	13600	13300	13650	13800	14000	14000	12600	12700	12800	13000
	1500	9900	12100	12450	12800	13000	13200	13200	11900	12100	12250	12500
	2000	8000	10400	11250	12000	12100	12200	12200	10850	11350	11600	11950
SR 100/21	1000	13200	15500	16100	16450	16600	17400	17600	15200	15600	16000	16600
	1500	9950	13400	14350	15050	15550	15900	16200	13800	14400	15000	15200
	2000	8000	11150	12400	13500	14150	14300	14700	11100	12000	12600	14000
SR 120/20	1000	13350	18500	19200	19400	19500	19800	20000	18150	18200	18400	18900
	1500	8400	15300	17450	18500	18900	19200	19300	15150	15450	15800	16450
	2000	6650	12150	14400	16200	16900	17500	17850	11900	12300	13600	15700



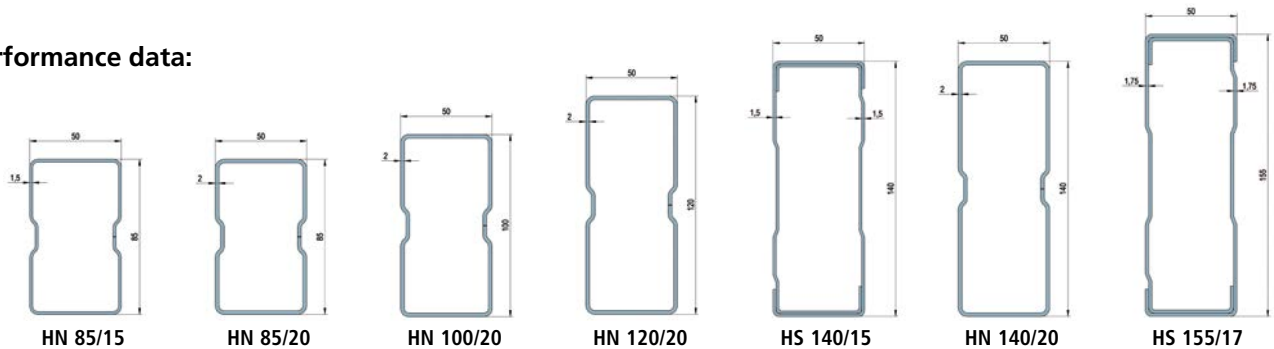
Frames are supplied disassembled!

Note: load data are given for guidance only and cannot be used as a substitute for static load calculations in the individual case. Load data do not include special loads, such as during seismic events etc. Follow the guidelines given in the LBR. A building permit is often necessary if the top edge of the stored goods are above 7.5 m. The local building authorities should be consulted about such projects.

*LBR = Local Building Regulations

■ Beam performance data:

Beam type:



Beam length mm	HN 85/15 Shelf load in kg	HN 85/20 Shelf load in kg	HN 100/20 Shelf load in kg	HN 120/20 Shelf load in kg	HS 140/15 Shelf load in kg	HN 140/20 Shelf load in kg	HS 155/17 Shelf load in kg
1800	2200 – 2400	2650 – 2900	3300 – 3400	4000 – 4200	—	4800 – 5000	—
2200	1900 – 2050	2250 – 2450	2400 – 2450	3400 – 3600	—	4000 – 4300	—
2700	1500 – 1650	1700 – 1850	—	2900 – 3000	3700 – 4500	3400 – 3600	5250 – 5500
3300	—	—	—	2450 – 2600	3000 – 3800	2800 – 3100	4350 – 4750
3600	—	—	—	2100 – 2250	2750 – 3550	2600 – 2900	4000 – 4400

Shelf loads depend on the **type of upright** used.



META Racking systems for the automotive industry ...

