



PRODUCT DATA

DIMENSIONS, TECHNICAL INFORMATION AND PERFORMANCE SPECIFICATION

spacevario CP210



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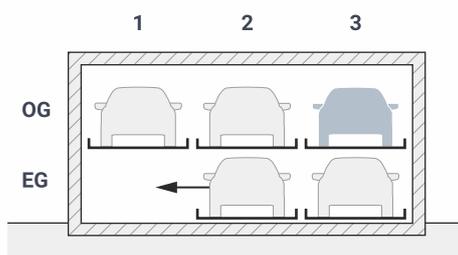
Explanation of symbols

-  Platforms accessible horizontally.
-  max. load per parking space in kg.
Upweighting over 2000 kg possible with surcharge (see "Vehicle data", page 3).
-  Parking space load can be subsequently upweighted (see "Vehicle data", page 3).
-  The systems provided are consistent with DIN EN 14010, the VDMA 15423 specification and the EC Machinery Directive 2006/42/EC.

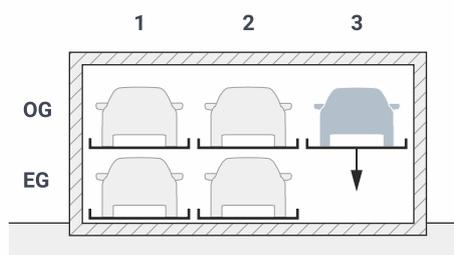
Function diagram with standard designation



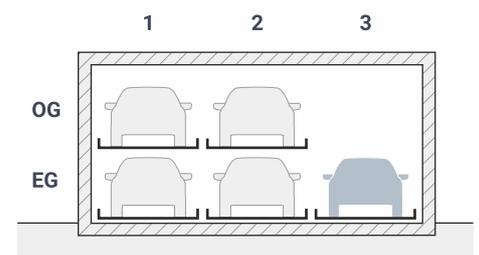
Example for vehicle on upper floor (OG) of grid 3:
Selection via the control panel; all doors must be closed.
Representation of parking spaces in a row.



To remove the vehicle from the space in **grid 3/OG**, the EG platforms are moved to the left.



The empty space is now located under the vehicle being removed. The parking space in **grid 3/OG** is lowered.



The vehicle in the space in **grid 3/OG** can now be removed.

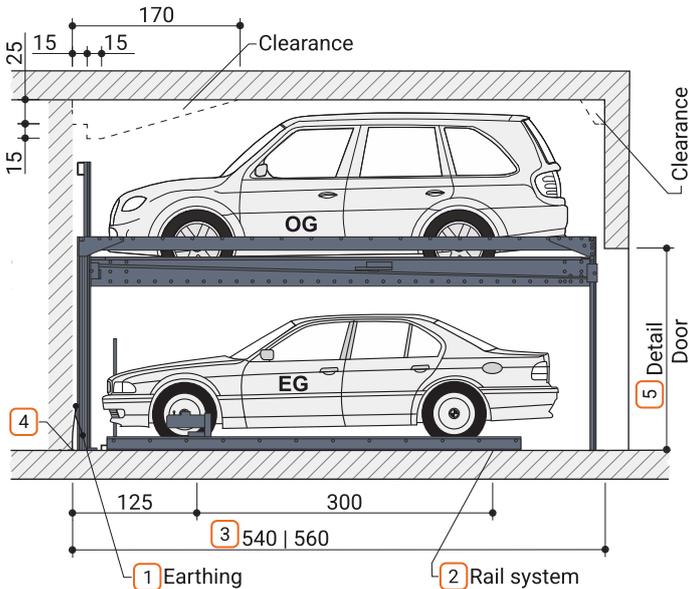
Dimensions and tolerances



All dimensions and minimum final dimensions.
Tolerance for dimensions +3/-0. Dimensions in cm.
In order to adhere to the minimum final dimensions, the tolerances in accordance with the German Construction Tendering and Contract Regulations [VOB], Part C (DIN 18330 and 18331) and DIN 18202 must also be taken into account.

Overview of building configuration

Configuration with standard sliding door 5



- 1 Equipotential bonding from the foundation earth connection to the system (on site) (to be provided by customer).
- 2 The tolerances for evenness of the roadway (floor) must be adhered to in accordance with DIN 18202, Table 3, row 3. (see "Detail of building configuration - rail system", page 7).
- 3
 - 540 cm for vehicles up to 5.0 m long
 - 560 cm for vehicles up to 5.2 m long
 - Shorter versions are possible on request - observe local regulations on parking space lengths. We recommend a minimum length of 540 cm for comfortable use of your parking space and increasingly longer vehicles.
- 4 No fillets/haunches are permitted at the transition from the pit floor to the walls. If fillets/haunches are required, the systems must be narrower or the pits wider.
- 5 Door detail and other door variants (see "Configuration with standard sliding door", page 5).



If fire-extinguishing systems are required, the customer must ensure that sufficient clearance is provided.

Vehicle data

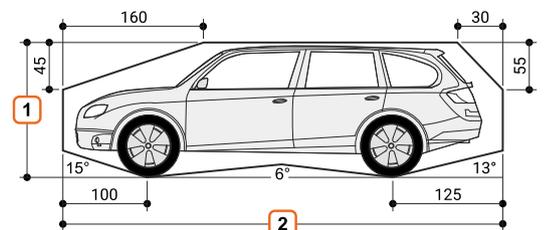
Parking options

Series vehicles:
saloon, estate, SUV, van in accordance with clearance gauge and maximum parking space load.

	OG EG 3	
Weight 4	2000 kg	2600 kg
Wheel load	500 kg	650 kg

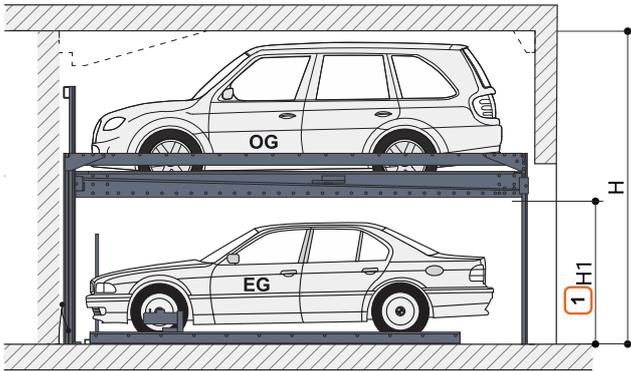
- 1 Vehicle height (see "Overview of system types and ceiling heights", page 4)
- 2 Vehicle length (see "Overview of building configuration", page 3)
- 3 OG = upper floor | EG = ground floor

Clearance gauge



Vehicle width 190 cm with platform width 230 cm. Correspondingly wider vehicles can be parked with wider platforms.

Overview of system types and ceiling heights



Type	H1	Vehicle height EG	Vehicle height OG											H - Ceiling height	
			150	155	160	165	170	175	180	185	190	195	200		
CP210-325	160	150	330	NA	NA										
CP210-345	175	165	345	350	355	360	NA	NA							
CP210-405	210	200	380	385	390	395	400	405	410	415	420	425	430	NA	NA

1 Maximum vehicle height for the passage = H1 - 5 cm

Example configuration



Example: Vehicle height, EG 165 cm and vehicle height, OG 165 cm.
Type: CP210 345
Ceiling height: 360 cm

Type	H1	Vehicle height EG	Vehicle height OG											H	
			150	155	160	165	170	175	180	185	190	195	200		
CP210-325	160	150	330	NA	NA	NA									
CP210-345	175	165	345	350	355	360	NA	NA	NA						

Width dimension and door height

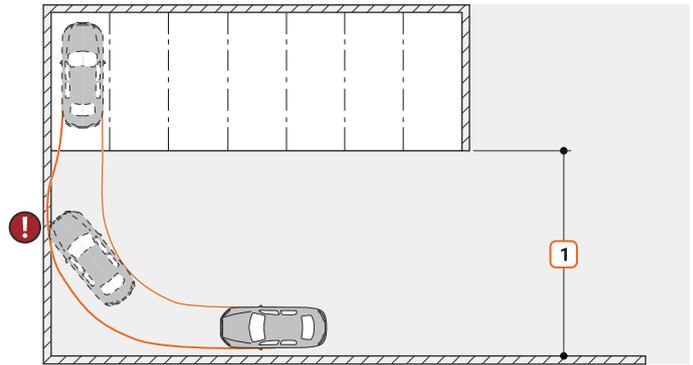


We recommend platform widths of minimum 250 cm and driving lane widths of 650 cm in order that vehicles can comfortably access the Multiparking system and enter and leave without difficulty.

Narrower platforms may impede parking according to the following criteria.

- Driving lane width
- Entrance conditions
- Vehicle dimensions

1 Observe minimum driving lane width in accordance with local regulations.



Configuration with standard sliding door

Standard sliding door	Door versions		Supports per grid		Supports per second grid	
	OG	EG	B1	B2	B3	B4
	230	220	250	230	500	480
	240	230	260	240	520	500
	250	240	270	250	540	520
	260	250	280	260	560	540
	270	260	290	270	580	560

1 Observe minimum clear height H2 in accordance with local regulations.

2 GL = building length (see "Overview of building configuration", page 3).

3 RB = grid width. These dimensions **must** be adhered to.

Type	H	H1
CP210-325	325	1700
CP210-345	345	1850
CP210-405	405	2200

Width dimension and door height

	Door versions			Supports per grid		Supports per second grid																																														
Plus sliding door behind the supports																																																				
				Not possible!																																																
Plus sliding door in front of the supports																																																				
	<table border="1"> <thead> <tr> <th rowspan="2">Clear platform width</th> <th colspan="2">RB³</th> </tr> <tr> <th>OG</th> <th>EG</th> </tr> </thead> <tbody> <tr> <td>230</td> <td>220</td> <td>250</td> </tr> <tr> <td>240</td> <td>230</td> <td>260</td> </tr> <tr> <td>250</td> <td>240</td> <td>270</td> </tr> <tr> <td>260</td> <td>250</td> <td>280</td> </tr> <tr> <td>270</td> <td>260</td> <td>290</td> </tr> </tbody> </table>			Clear platform width	RB ³		OG	EG	230	220	250	240	230	260	250	240	270	260	250	280	270	260	290	<table border="1"> <thead> <tr> <th colspan="2">Supports per grid</th> <th colspan="2">Supports per second grid</th> </tr> <tr> <th>B1</th> <th>B2</th> <th>B3</th> <th>B4</th> </tr> </thead> <tbody> <tr> <td>250</td> <td>230</td> <td>500</td> <td>480</td> </tr> <tr> <td>260</td> <td>240</td> <td>520</td> <td>500</td> </tr> <tr> <td>270</td> <td>250</td> <td>540</td> <td>520</td> </tr> <tr> <td>280</td> <td>260</td> <td>560</td> <td>540</td> </tr> <tr> <td>290</td> <td>270</td> <td>580</td> <td>560</td> </tr> </tbody> </table>		Supports per grid		Supports per second grid		B1	B2	B3	B4	250	230	500	480	260	240	520	500	270	250	540	520	280	260	560	540	290	270	580
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¹ Observe minimum clear height H3/H4 in accordance with local regulations.

² GL = building length (see "Overview of building configuration", page 3).

³ RB = grid width. These dimensions **must** be adhered to.

Detail of building configuration - rail system

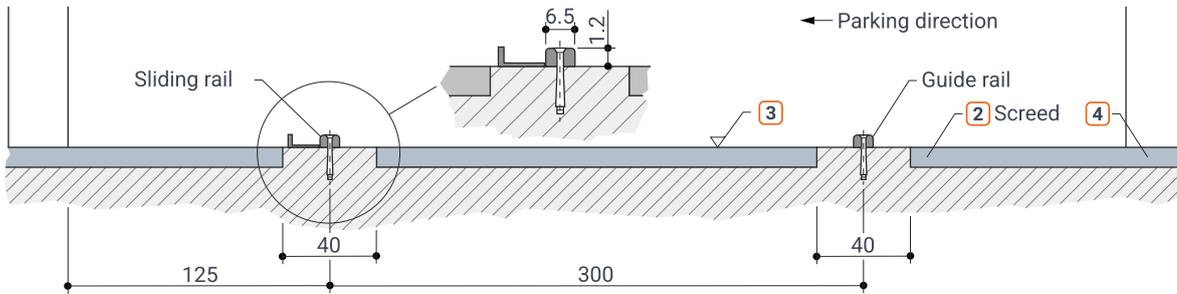


Various options are available for rail installation depending on the structural conditions.

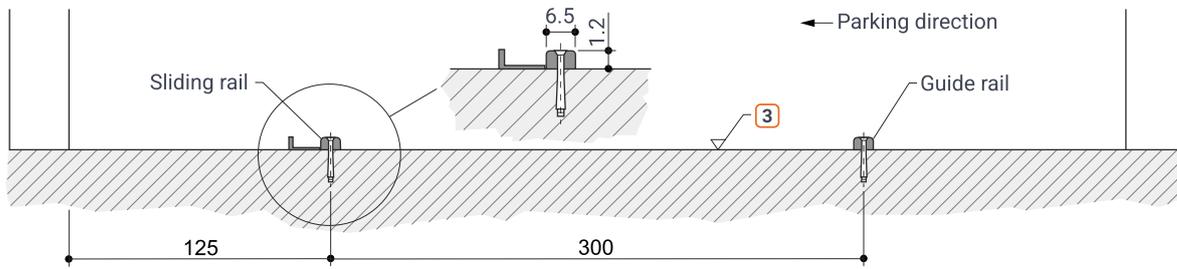
Rail load due to a moving traffic load:

- With parking space load 2000 kg: 6.5 kN per wheel
- With parking space load 2600 kg: 8.0 kN per wheel

Laying on strip foundation ①



Laying on finished floor ①



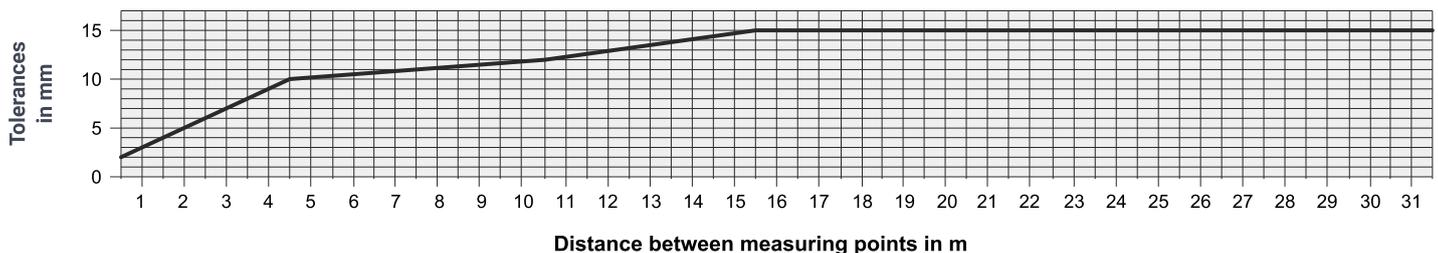
- ① The tolerances for evenness of the roadway (floor) must be adhered to in accordance with DIN 18202, Table 3, row 3. There must be no building joints or expansion joints in the area around the rail system.
- ② We do not recommend using poured asphalt.
- ③ Upper edge finished floor
- ④ Plugging of the sliding door rails

Evenness tolerance – extract from DIN 18202, Table 3



The safety clearance between the outer lower edges of the ParkBoard and the floor must not exceed 2 cm. To comply with the requirement in DIN EN 14010 and to reach the requisite floor evenness, the evenness of the finished floor in accordance with DIN 18202, Table 3, row 3 must not be exceeded. The customer does not, therefore, need to level the floor.

Row	Reference	Inside micrometer as limit values in mm with measuring point distances in m to				
		0.1	1	4	10	15
3	Finished floors, e.g. screeds as floor screeds, screeds for floor coverings, floor coverings, tile coverings, levelled and glued coverings	2	4	10	12	15



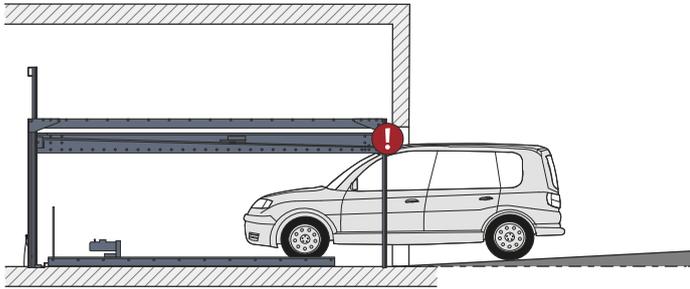
- ① Intermediate values can be found in the diagram and should be rounded up.

Loading plan

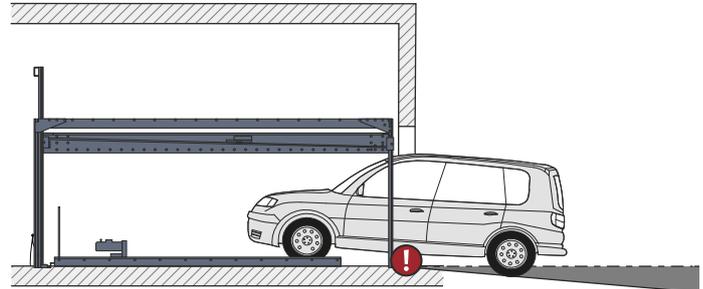
Access incline



The maximum access inclines specified in the symbol sketch must not be exceeded. Improper configuration can lead to extreme difficulty accessing the system, for which KLAUS Multiparking India cannot be held liable. Where above-ground garages are on a slope, provision of a drainage gutter in the access is recommended.

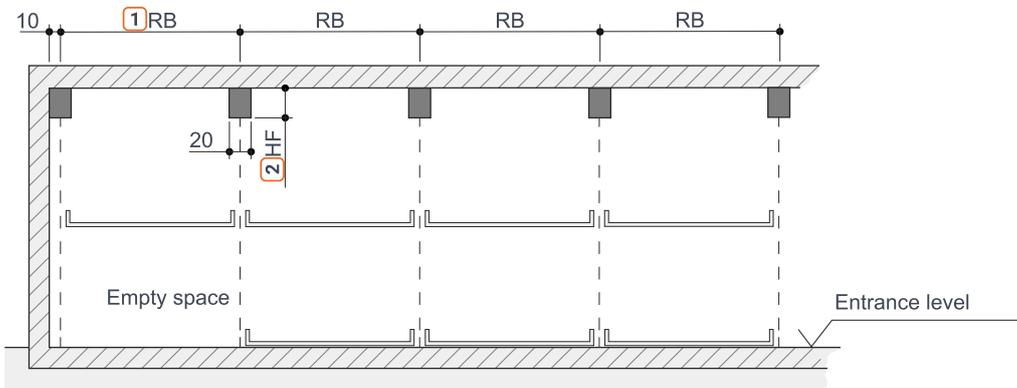


max. 3% slope



max. 5% gradient

Clearance for installations



- 1 RB = grid width. These dimensions **must** be adhered to.
 - 2 HF: Clearance height = building height (H) - 305 cm | where CH max. = 45 cm (see "Overview of system types and ceiling heights", page 4).
- Clearance for lengthways cable routing

Electrical installation

Switch cabinet and master switch

Access to the switch cabinet (about 76 x 76 x 21 cm) must be possible without danger. The lockable master switch must be positioned so that the entire entry area of the facility can be surveyed.

With wall opening from switch cabinet to system (consultation with KLAUS Multiparking required).

Hydraulic unit

- 3.0 kW, three-phase current 230/400 V AC / 50 Hz / 8 A

Supply cable to master switch

Standard manual sliding doors:

Customer-provided supply cable min. 5 x 2.5 mm² (3 PH+N+PE) to master switch with pre-fuse 3 x 25 A (slow T) or circuit breaker 3 x 25 A (trip characteristic K).

Control panel with emergency-stop

- Attachment at a clear point (e.g. pillar).
- Secured against external operation.

Technical information

Usage area

The system is suitable for a fixed group of users as standard.

Where users change (e.g. short-term parking in office buildings or hotels), structural modifications to the Multiparking system are required. Please request a consultation if required.

Units

Low-noise, bearing-mounted hydraulic units are installed on rubber-metal blocks. Consequently, we recommend separating the garage body from the residential building.

Parking space designation

Please consult the function diagram for the standard designation of the parking spaces (see "Function diagram with standard designation", page 2).

Alternative designations are possible with a surcharge.

Please note the following specifications:

- The empty space is situated on the left as standard.
- Any alternative designations must be notified 8 to 10 weeks before delivery.

Ambient conditions

Ambient conditions for the areas around Multiparking systems:

Temperature range -10 to +40° C. Relative humidity 50 % to a maximum external temperature of +40° C.

If ascent/descent times are specified, these relate to an ambient temperature of +10° C and with the system positioned immediately adjacent to the hydraulic unit. These times are increased at lower temperatures or with longer hydraulic lines.

Care

To prevent corrosion damage, please observe our special cleaning and care instructions and ensure that your garage is well ventilated.

CE conformity

The systems provided are consistent with DIN EN 14010, the VDMA 15423 specification and the EC Machinery Directive 2006/42/EC. This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

Noise protection

Standard noise protection:

In accordance with DIN 4109-1 Noise protection in high-rise - Section 9:

Maximum sound pressure level in living and sleeping areas 30 dB (A).

User noise is not subject to the requirements.

The following dimensions are required for adherence to this value

- :Sound insulation dimension of the building structure of min. R'_w = 57 dB (service to be provided by the customer)

Increased sound protection (special agreement):

In accordance with DIN 4109-5 Increased noise protection in high-rise - Section 8:

Maximum sound pressure level in living and sleeping areas 25 dB (A).

User noise is not subject to the requirements.

The following dimensions are required for adherence to this value:

- Sound insulation dimension of the building structure of min. R'_w = 62 dB (service to be provided by the customer)

Note:

User noise is noise that can be influenced individually by the user of our Multiparking systems. This includes, e.g., accessing the platform, the slamming of vehicle doors, engine and brake noise.

Performance specification

Description

Multiparking system for independent parking of vehicles one on top of and next to one another.

Access to the parking spaces horizontally (installation tolerance $\pm 1\%$). An access must be provided over the entire width of the system (minimum driving lane width in accordance with local regulations).

The parking spaces are arranged on 2 levels one on top of the other. Vehicles park on stable steel platforms.

The platforms on the upper floor (OG) move vertically, the platforms on the ground floor (EG) move horizontally. At entrance level (EG), there is always 1 parking space less. This empty space is used for sideways movement of the EG parking spaces to allow a parking space on the OG above to lower to entrance level. Consequently, 3 parking spaces (1 on EG, 2 on OG) is the smallest unit for this parking system.

Vehicle positioning in any parking space by positioning aid mounted on one side (to be adjusted in accordance with the operating instructions).

All requisite safety equipment is integrated into the system. This essentially comprises a chain monitoring system, locking levers for the upper platforms and locked doors. The doors can only be opened when the selected parking space has reached its parking position.

Steel frame (secured to the floor) comprising:

- Supports (arranged in rows)
- Crossbeams and lengthways beams
- Sliding rails for the sideways moving EG platforms

Platform comprising:

- Platform profiles
- Adjustable positioning aid
- Chamfered ramp
- Side beams
- Crossbeams
- Screws, nuts, washers, spacers, etc.

Lifting equipment for platforms on the UF comprising:

- Hydraulic cylinders with solenoid valves
- Chain wheelsChains
- Limit switches
- The platforms are each suspended at 4 points and are guided at the supports by means of plastic plain bearings

Drive unit for sideways moving platforms on EG:

- Gear motor with chain wheel
- Chains
- Sliding and guide rollers (low-noise)
- Power supply via moving wire

Description

- Hydraulic unit (low-noise, fitted to bracket and bearing mounted on rubber-metal block)
- Hydraulic oil tank
- Oil filling
- Internal gear pump
- Pump holderCoupling
- Three-phase motor
- Noise protection, motor protection switch and control fuse
- Test pressure gauge
- Pressure relief valve
- Hydraulic hoses (to attenuate noise transmission to the hydraulic pipes)

Control:

- Central control point (control panel with emergency-stop) for selecting the desired parking space
- The electrical wiring from the system cabinet is provided by the supplier

Sliding doors - standard:

Size

- Dimensions adjusted to the underlying widths and height dimensions.
- The door comprises two door leaves

Frame

- Frame structure with two vertical centre rungs from extruded aluminium profiles (anodised, coating thickness approx. 20 μm)

Door filling

- Aluminium perforated plate
- Ventilation cross-section of the filling approx. 30%

Plain aluminium sheet

- Thickness 2 mm, E6/EV1, anodised, coating thickness approx. 20 μm

Sliding rails

- The ceiling and floor sliding rails of the doors are attached to the steel frame of the system/ civil beam.

Door actuation

- Standard. Manually, i.e. the door is opened & closed by hand

Please note:

- Door apertures (at the side, covers over the sliding rails, etc.) and door suspensions are not included with the standard configuration but can be supplied as special equipment with a surcharge.

Services to be provided by the customer

Barriers

Barriers that may be required in accordance with DIN EN ISO 13857 where there are roadways immediately in front of, adjacent to or behind the systems. This also applies during the construction stage.

Parking space numbering

Parking space numbering, if required.

Building services systems

Any lighting, ventilation, fire-extinguishing and fire-alarm systems that may be required, plus clarification and compliance with corresponding official documentation.

Lighting

The customer must observe local regulations pertaining to the illumination of parking spaces and roadways. In accordance with DIN EN 12464-1 'Light and lighting - Lighting of work places', an illumination level of min. 200 lx is recommended for the parking spaces and operating area of the system.

A floating contact can be provided for actuation of parking space lighting provided by the customer.

Floor structure – rails

Floor structure in accordance with the details on the product data sheet (see "Detail of building configuration - rail system", page 7).

Recesses, tolerances for evenness of the roadway must be adhered to in accordance with DIN 18202, Table 3, row 3.

Lining for the rail system by means of cement screed over the entire length. Laying the screed.

Wall openings

Wall openings, if required.

Supply cable to master switch - foundation earth

The customer must lay the supply cable to the master switch during assembly. Functional capability can be checked by our engineers on site, in conjunction with the electronics engineer. If this is not possible during assembly for reasons attributable to the customer, the customer must commission an electronics engineer.

The customer must earth the steel structure with a foundation earth connection (earthing distance max. 10 m) and equipotential bonding in accordance with DIN EN 60204.

Door suspensions

Please note that if the specified clear heights (see "Width dimension and door height", page 5) are not adhered to, additional measures for door attachment (door suspensions) will be required for a surcharge.

Door apertures

Door apertures, if required. This may be requested from KLAUS Multiparking India for a surcharge.

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