

Technical description

CONTAINEX PLUS LINE

Portable, sanitary and corridor cabins

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Author:
CONTAINEX Container Handelsgesellschaft m.b.H.

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1 General

The following description refers to the specification and design of new portable, sanitary and corridor cabins.

The external dimensions of our cabins are adapted to the ISO-standard and therefore have many advantages of that system. They consist of a robust frame construction and have interchangeable wall elements.

1.1 Dimensions and weights

Dimensions and weights								
	Type	External dimensions [mm]			Internal dimensions [mm]			Weight [kg]
		Length	Width	Height	Length	Width	Height	BM
CAH 3100	10'	2,989	2,435	3,100	2,749	2,195	2,550	1,500
	16'	4,885	2,435	3,100	4,645	2,195	2,550	2,400
	20'	6,055	2,435	3,100	5,815	2,195	2,550	2,900
	24'	7,335	2,435	3,100	7,095	2,195	2,550	3,500
	20' x 10'	6,055	2,989	3,100	5,815	2,749	2,550	3,500

NOTE: The dimensions and weights listed (approx. details) may vary depending on the version and equipment.

1.2 Abbreviations

The following abbreviations are used in the document:

Portable cabin PLUS Line	BP
Sanitary cabin PLUS Line	SP
Corridor cabin PLUS Line	GP
Portable cabin PLUS Line 20'x10'*	3P20
Sanitary cabin PLUS Line 20'x10'*	4P20
Internal staircase cabin PLUS Line 20'x10'	TP20

* only available in a modular building in combination with an internal staircase cabin TP20

Polyisocyanurate	PIR
Polyurethane	PU
Internal height	RIH
External cabin height	CAH
Toughened safety glass	ESG
Laminated safety glass	VSG

1.3 Load assumptions

1.3.1 Snow loads

Characteristic snow load on the floor

$s_k = 2.5 \text{ kN/m}^2$ (250 kg/m²)

Shape parameters $\mu=0.8$ ($s = \mu_1 * s_k = 2.0 \text{ (kN/m}^2 \text{ (200 kg/m}^2\text{))}$)

1.3.2 Wind loads

Wind load

$v_{b,0} = 27.5 \text{ m/s}$ (100 km/h)

Terrain category: mixed profile II / III (landlocked)

At wind speeds of more than 27.5 m/s (100 km/h) additional securing of the cabins must be carried out (anchoring, screwing, etc.). Such measurements are to be calculated by approved specialists taking into consideration local standards and conditions.

1.3.3 Floor payloads

1.3.3.1 Payloads for BP / SP 10', 16' and 20'

Ground floor: Max. load capacity $q_k = 4.0 \text{ kN/m}^2$ (400 kg/m²)

Top floors: Max. load capacity $q_k = 3.0 \text{ kN/m}^2$ (300 kg/m²)

1.3.3.2 Payloads for BP / SP 24'

Ground floor: Max. load capacity $q_k = 4.0 \text{ kN/m}^2$ (400 kg/m²)

First floor: Max. load capacity $q_k = 3.0 \text{ kN/m}^2$ (300 kg/m²)

Second floor: Upon request
(intermediate supports required)

1.3.3.3 Payloads for corridor cabin GP16' and GP24'

Ground floor: Max. load capacity $q_k = 5.0 \text{ kN/m}^2$ (500 kg/m²)

Top floors: Max. load capacity $q_k = 5.0 \text{ kN/m}^2$ (500 kg/m²)

1.3.3.4 Payloads for internal staircase cabin TP20'

Ground floor: Max. load capacity $q_k = 5.0 \text{ kN/m}^2$ (500 kg/m²)

Top floors: Max. load capacity $q_k = 5.0 \text{ kN/m}^2$ (500 kg/m²)

1.3.3.5 Payloads for 3P20' und 4P20'

Ground floor:	Max. load capacity	$q_k = 3.0 \text{ kN/m}^2$ (300 kg/m ²)
Top floors:	Max. load capacity	$q_k = 3.0 \text{ kN/m}^2$ (300 kg/m ²)

1.3.4 Basic principles of the structural calculations

Exposed side

DIN EN 1990 /NA (Eurocode 0; basics of structural engineering)

DIN EN 1991-1-1 /NA (Eurocode 1; tare weights and payloads)

DIN EN 1991-1-3 /NA (Eurocode 1; snow loads)

DIN EN 1991-1-4 /NA (Eurocode 1; wind loads)

Non-exposed side

DIN EN 1993-1-1 /NA (Eurocode 3; steel construction – general rules for building construction)

DIN EN 1995-1-1 /NA (Eurocode 5; timber construction – general rules for building construction)

The calculations were carried out according to European standards of the EN series. The associated German national application documents were taken into account.

Other special load events (e.g. earthquake effects, impact loads) were not taken into account!

1.4 Insulation

Roof			
Insulation material	Thickness [mm]	U_{\max} value [W/m ² K] in the infill	U_{\max} value [W/m ² K] according to EN10211
PU + MW	80 + 120	0.16	0.18
PU + MW	100 + 100	0.15	0.17

Wall element			
Insulation material	Thickness [mm]	U_{\max} value [W/m ² K] in the infill	U_{\max} value [W/m ² K] according to EN10211
Full blank panel PIR	110	0.20	0.20
Extra stud wall PIR + MW	110 + 80	0.13	0.14

Floor			
Insulation material	Thickness [mm]	U_{\max} value [W/m ² K] in the infill	U_{\max} value [W/m ² K] according to EN10211
PIR + MW	110 + 50	0.14	0.20
PIR + PU	110 + 50	0.13	0.17

Doors				
Dimensions [mm]	Thickness [mm]	Type	Insulation	U _d value [W/m ² K] *
1150 x 2100	65	External door "Thermo65" **	PU ¹	0.87
1000 x 2125	40	Steel door	polystyrene	1.70
875 x 2125	40	Steel door	polystyrene	1.80

* The U-values relate to the U_d-value (U-value of the doors) of the specified construction width.

** Thermally separated door

Window		
Description	Construction [mm]	U _g value [W/m ² K] *
Triple glazing insulation with gas filling	4/12/4/12/4	0.7

* The U-values relate to the U_g value (U-value of the glass) of the specified glazing.

2 Cabin design

2.1 Frame construction

2.1.1 Floor frame:

Welded steel frame construction made of edged and rolled sections, 4 welded frame corners, edged and welded cross beams, profile height of floor frame: 180 mm, no forklift pockets available.

2.1.2 Roof frame:

Welded steel frame construction made of edged and rolled sections, 4 welded frame corners, edged and welded roof cross beams, profile height of roof frame: 250 mm.

2.1.3 Corner column:

Made of edged and welded steel profiles, edge length 170 mm, screwed tightly to the floor and roof frame

2.1.4 Rainwater drainage:

Insulated rainwater drainage pipes DN 75 inside the corner columns, unrestricted drainage of the rainwater each on the front facing inwards at the lower frame corners.

2.2 Floor

2.2.1 Insulation

Insulation material

- **110mm PIR + 50mm MW**
Fire behaviour PIR B-s2, d0 according to EN 13501-1
Fire behaviour MW: fire behaviour A1 (not flammable) according to EN 13501-1
- **110mm PIR + 50mm PU**
Fire behavior PIR B-s2, d0 according to EN 13501-1
Fire behaviour PU: D-s2, d0 according to EN 13501-1

2.2.2 Floor cover

Floor board

- **Plywood panel - thickness 21 mm**
E1 in accordance with EN 636:2012
Fire behaviour D-s2, d0 or Dfl-s1 according to EN 13501-1

Floor cover

- Vinyl floor cover, welded in sheets

Vinyl floor covers			
	Eternal	Safestep	Norm
Total thickness	2.0 mm	2.0 mm	EN ISO 24346
Wear layer	0.7 mm	0.7 mm	EN ISO 24340
Fire behaviour	B _{fl} -s1	B _{fl} -s1	EN 13501-1
Slip resistance	R 10	R 11	DIN 51130
	---	B	DIN 51097
Classification usage class	34 / 43	34 / 43	EN ISO 10874
Electrostatic behaviour	≤ 2 kV	≤ 2 kV	EN 1815

2.3 Roof structure

2.3.1 Insulation

Insulation material

- **80mm PU + 120mm MW**
Fire behaviour PU: E according to EN 13501-1
Fire behaviour MW: A1 (non flammable) according to EN 13501-1
- **100mm PU + 100mm MW**
Fire behaviour PU: E according to EN 13501-1
Fire behaviour MW: A1 (non flammable) according to EN 13501-1

2.3.2 Ceiling boards

- **15mm plasterboard**
Fire behaviour A2-s1, d0 according to EN 13501-1
- **Internal ceiling**
Internal ceiling as acoustic ceiling, consisting of suspended, micro-perforated or smooth sheet steel profiles 600 x 600 mm, similar to RAL 9010, individual elements removable with restraint, including acoustic tiles

2.3.3 CEE connectors:

- Externally sunk into short sided cabin frame

2.4 Wall panels

2.4.1 Panels

Wall thickness

- 110mm

Available items

- Blank full panel *
- Double panel
- Window panel
- Blank half panel
- Double panel (only for windows or doors)
- Blank infill panel

* Doors and windows only possible in full panel or double panel

External cladding

- Corrugated, galvanised and coated steel sheet, thickness 0.60 mm

Insulation material

- **PIR**
Fire behaviour B-s2, d0 according to EN 13501-1

Insulation thickness

- 110mm

Internal cladding

- **Galvanised steel sheet**
Thickness 0.50 mm, colour: RAL 9010
Fire behaviour A1 (non flammable) according to EN 13501-1

2.4.2 Extra stud wall**Available items**

- On the short side
- On the longitudinal side

Wall thickness

- 90 mm

Frame construction

- **Wooden frame**
Thickness 75 mm
Fire behaviour D-s2, d0 according to EN 13501-1

Insulation material

- **MW**
Fire behaviour MW: (non flammable) according to EN 13501-1

Insulation thickness

- 80 mm

Internal cladding

- **Galvanised steel sheet**
9.5 mm plasterboard, fire behaviour A2-s1, d0 according to EN 13501-1
Internal colour: RAL 9010

2.5 Partition walls**Available items**

- Full panels on the short and longitudinal side
- Door elements (see steel doors 2.6.2) on the short and longitudinal side
- Fixed glazing

Total thickness

- 80 mm
- 120 mm

Frame construction

- **Wooden frame**
Thickness 58.5 mm (total thickness 80 mm)
Thickness 100 mm (total thickness 120 mm)
Fire behaviour D-s2, d0 according to EN 13501-1

Insulation material

- **MW**

Fire behaviour MW: A1 (non flammable) according to EN 13501-1

Insulation thickness

- 60 mm
(for total thickness 80 mm)
- 100 mm
(for total thickness 120 mm)

Internal cladding

- **Double-sided plasterboard – steel sheet**

9.5 mm plasterboard, fire behaviour A2-s1, d0 according to EN 13501-1

Sheet metal decor: similar to RAL 9010

2.6 Doors

2.6.1 External door "Thermo65"

General

- Right or left hand hinged
- Outward opening
- Including door closer

Door leaf

- Completely foam filled, thermally separated
- 4-sided double seal level

Frame

- Thermally separated aluminium frame
- 3-sided seal level

Hinges

- two-part roller hinges, 3-dimensionally adjustable, with protective caps, pin-secured

Dimensions

- Nominal dimension 1,150 x 2,100 mm
- Clear opening 1,000 x 2,005 mm

Optional

- Emergency exit according to EN 179
- Emergency lock according to EN 1125
- 3-pane insulation glazing: W x H = 150 x 1,603 mm
(external VSG clear / middle Float sandblasted / internal ESG clear)

2.6.2 Steel doors

General

- Right or left hand hinged

Door leaf

- Door leaf made of galvanised and coated sheet metal on both sides

Frame

- Steel frame with triangular wrap-around seal

Hinges

- Two-part door hinges

Dimensions

- Nominal dimension
875 x 2,125 mm
1,000 x 2,125 mm
2,000 x 2,125 mm
- Clear opening
811 x 2065 mm
936 x 2,065 mm
1,936 x 2,065 mm

Optional

- Emergency exit according to EN 179
- panic bolt according to EN 1125
- Door closer
- Insulated glazing:

Border frame	Plastic white
Width x height	238 x 1,108 mm (ESG)
	550 x 1,108 mm (ESG)
	550 x 450 mm (ESG)

2.7 Windows

Specification

- Frame with 3-pane insulated glazing (ESG) including gas filling and fitted roller shutters
- Externally with aluminium clips in cabin colour
- Internal colour: RAL 9010
- Insulated roller shutter box with blind fastener
- Aluminium slats, foamed
- Colour similar to RAL 9006
- One hand tilt & turn mechanism

ATTENTION: The built-in insulation glass is only suitable for use at altitudes up to 1,100 m above sea level. Above 1,100 m sea level windows with a pressure compensating valve need to be used.

Window options	Parapet height	External dimension	Clear opening
Office window ¹ (float)	1,030 mm	945 x 1,200 mm	820 x 1,080 mm
Sanitary window ² (privacy glass), float)	1,525 mm	644 x 706 mm	520 x 580 mm
Double window with floating mullion (without centre bar)	1,030 mm	1,745 x 1,200 mm	1,560 x 1,015 mm

Optional

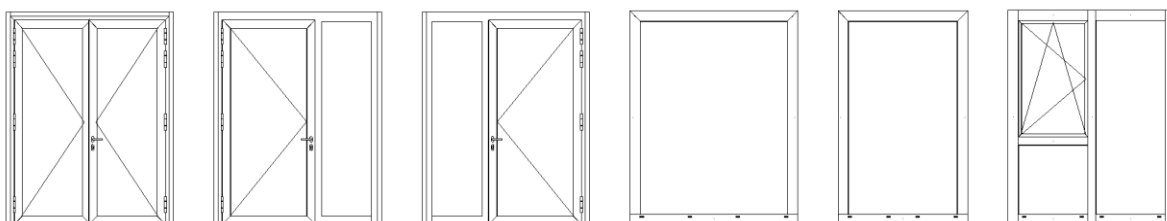
- VSG glazing
- Venetian blinds (for office windows and double windows) with remote control

2.8 Glazing

Specification

- Thermally separated aluminium frame with 3-pane insulated glazing (ESG) including gas filling
- External paint: cabin colour
- Internal colour: RAL 9010

ATTENTION: The built-in insulation glass is only suitable for use at altitudes up to 1,100 m above sea level. Above 1,100 m sea level windows with a pressure compensating valve need to be used.



Optional

- VSG glazing
- Emergency exit according to EN 179
- Emergency lock according to EN 1125
- Venetian blinds with remote control

3 Electrical installations

- Specification Concealed cabling
- Protection class IP20
- Plug insert according to country standards
 - VDE
 - CH
 - GB
 - IE
 - FR
 - DK
- Country specific design / variations possible

3.1 Technical data

	Basis VDE (= ÖVE, CH, DK, SKAN, N), GB, FR, IE****		NL
Connection:	Recessed CEE external plug and socket connections		
Voltage:	230 V / 3-poles / 32 A (3x6 mm²)		
	400 V / 5-poles / 32 A (5x6 mm²)		
Frequency:	50 Hz		
Protection:	Residual current operated device 40 A / 0.03 A, 2-poles (230V) type A X** Country-specific with 63A / 0.03 A 2-pin (230 V) type A		
	Residual current operated device 40 A / 0.03 A, 4-poles (400V) type A X**		
Distribution box *:	Cavity distribution box, twin row, triple row		
Cable:	Type: H07ZZ-F & H07Z1-K (1x6 mm²) Halogen-free mix, fire behaviour C _{CA} – s1b, d1, a1		
Electrical circuits:	Light:	MCB 10 A, 2-poles, 3x1.5 mm² ***	RCBO B10A
	Heating:	MCB 13 A, 2-poles, 3x2.5 mm² ***	RCBO B16A
	Socket	MCB 13 A, 2-poles, 3x2.5 mm² *** Device- and country-specific with 10A and 16A	RCBO B16A
		3x2.5 mm²	
Socket:	Single socket and double socket		

* Fitted to ceiling (fitting height = RIH)

** Thermally protected with fuse at the same rated current

*** MCB characteristic C

**** IE - distribution box surface mounted on the panel

Compliance with the following CENELEC regulations regarding protection against electric shock and protection against overload and short circuit

- HD 60364-1:2008
- HD 60364-4-41:2017
- HD 60364-7-717:2010
- HD 60364-7-701:2007
- HD 384.4.482 S1:1997
- HD 384.7.711 S1:2003

3.2 Earthing

Universally usable earthing clamp. On both short sides in the floor frame of each corner a drill hole with a diameter of 9.4 mm is prepared for the fixture of the earthing clamp.

The earthing clamp is fixed by using an M10 screw with self-tapping thread (torque 25-30 Nm). The position of the screw is determined in the factory at a designated point on the cabin.

An earthing clamp is delivered with the cabin and must be installed on site by the customer.

- The protective earthing of the cabin must be carried out by the customer at the installation site.
- The effectiveness of the cabin's earthing connection and the measurement of the earthing resistance or the loop resistance must be verified by a qualified electrician on site, during the course of the electrical inspection, prior to commissioning.

3.3 Lightning and overvoltage protection

The required measures for the outer and inner lightning protection (earthing measures, overvoltage protection devices) for the devices operated in the cabin for the installation site and their sensitivity must be observed and be established if necessary.

3.4 Wiring

Flexible cable system with plug contact and cables in full length.

3.5 Safety advice

The PE rail of the distribution box and the metal ceiling structure are electrically connected to a PE cable 1x6mm² within the roof frame with an earthing bolt and must not be removed (torque 10-15 Nm).

The cabins can be linked electrically at the external CEE plugs and sockets. For the decision how many units to connect electrically the expected constant current in the link circuits has to be considered. The commissioning has to be carried out by an approved electrician. The CEE sockets in the roof frame are used exclusively to supply and discharge the power feed of the individual modules. Use as a freely available socket is strictly prohibited by us.

The manual for the assembly, start up, utilisation and maintenance of the electrical installations is delivered in the fuse box and needs to be followed!

Before connecting the cabin to the supplying low voltage grid all appliances (consumer loads) need to be switched off and earthing needs to be ensured (earthing feed cable and earthing connecting lines between the cabins need to be checked on potential equity and low Ohm level).

Attention: The supply- and connection cables are made for an operating voltage of max. 32 Ampere. These are not protected by an overcurrent protection device. The connection of the cabins to the external electrical power supply may only be undertaken by a certified specialist company.

Before using the cabin (modular building) for the first time the effectiveness of the protection measures for the fault protection need to be checked by an authorised specialist company.

Attention: The commissioning of boilers and/or under sink units is only permitted if they are filled!

Cleaning with a high-pressure cleaner is FORBIDDEN.

The electrical equipment of the cabin may not be cleaned by a direct water jet under any circumstances.

If the cabins are delivered into areas with increased lightning activity further measures have to be taken into account to prevent overvoltage depending on the country specific rules.

When cabins are placed near the ocean it is necessary to consider the special atmospheric conditions (salt content and humidity of the air) when the intervals for the periodic inspections by the operator are defined.

In case machines or appliances with high starting current peaks are used (according to the manual of the respective appliances) adequate RCD/MCB must be used.

The electrical fittings in the cabin are designed for minimal vibration exposure. If the exposure is higher, appropriate measures (and plug/screw contact checks) must be taken depending on the national technical regulations.

If the cabins are used in areas with earthquake risks, the national regulations must be applied and the equipment must be adapted accordingly.

The choice of the external linking cables of the cabins has to suit the country's national technical regulations.

The cabins have to be secured against thermal overload with a type gL fuse or gG with max. $I_N = 32A$.

3.6 Heating and air conditioning

Individual heating and/or air conditioning possible using equipment according to the table. Mechanical ventilation options available with electrical ventilators. Regular ventilation of rooms must be provided. A relative humidity of 60% should not be exceeded in order to avoid condensation!

Design options

- Hygrostatic extractor fan
- Convactor heater
- Monoblock air conditioner heat/cool
- Fan heater

All safety distances and instructions issued by the supplier for the equipment must be adhered to! The appropriate manuals and instructions are sent with the cabins.

4 Water installations

Supply

- Supply using 1/2", 3/4" or 1" pipe, sideways through cabin wall
- Concealed pipework
- Distribution without circulation line

Pipework internal

- PP-R pipework (according to EN ISO 15874)

Operating pressure

- Max. permitted operating / connection pressure 4 bar

Warm water preparation

- By using electrical boilers, depending on the cabin type (15, 80, 150 liters)

Waste pipework

- Waste water is collected via plastic pipes DN 50, DN 110 and DN 125 (external diameter 50, 110 and 125mm) inside the cabin, and passes through the cabin wall sideways. Optionally, it is possible to connect them within a modular building between floors.

NOTE: For the connection and use of water installations, the customer must observe and comply with the local regulations and special requirements of the local water network operator.

NOTE: Should the cabin not be used at temperatures below +3°C, the entire pipework system must be emptied including the boiler (risk of frost!).

If residual water is left over (eg. drainage water, etc.) an anti-freeze agent must be used to prevent damage from water freezing. The shut-off valve at the water inlet point must always stay open.

5 Design options

General equipment

- Openings for cables in panel
- Telephone duct in panel
- Opening for cables in panel fixings

- Motion and occupancy detector
- Cable trunking on panel
- Ventilation unit VL-100
- Fascia
- External stairs
- Internal stairs
- Data socket

Sanitary fixtures

- Sanitary fixtures accessible to disabled persons
- Sanitary connection sunk into the panel
- Shower
- Privacy screen
- Boiler: 50 l / 80 l / 150 l
- Soap dispenser
- Pressure reduction valve
- Stop & Go fitting for wash hand basin
- Wet room electrics (optional)
- Instant water heater (for pressureless fittings)
- Ceramic hand wash basin
- Urinal
- electrical hand dryer
- Water installations (water inlet and outlet)
- Mirror
- WC cabin
- Paper towel dispenser

6 Paint

Paint system with high weather and aging durability, suitable for city and industry atmosphere.

Wall element

25 µm coating thickness

Frame

75-120 µm coating thickness

The painting of above mentioned parts is carried out with different types of production.. These achieve shades similar to RAL. We do not accept liability for colour variations in comparison with the RAL tones.

7 Certifications

CE marking in accordance with EN 1090 EXC 2

8 Fire resistance

- Standard equipment: fire resistance class of components in accordance with EN 13501-2
- Supporting structure: R30
- Roof construction REI30
- Wall panels: EI30
- Verification: Classification report according to EN13501-2, accredited institute IBS Linz

9 Miscellaneous

9.1 Transport

Cabins must be transported on suitable trucks. The local laws for load securing must be adhered to.

Cabins are not suitable for rail transport. Cabins must be transported empty. Open sides must be closed with appropriate covers before transport.

9.2 Handling

The following handling regulations for the cabins must be observed:

- The 10', 16', 20' and 20'x10' cabins can be lifted by crane. The ropes/chains need to be fastened to the upper cabin corners. The angle between the rope/chain and the horizontal line must be a minimum of 60° (picture 1). The necessary rope/chain length for a 20' cabin is at least 6.055 m.
- The 24' cabins can also be lifted by crane. The ropes/chains must be attached to the eyebolts/crane eyes screwed on at the top (not the cabin corners!). The angle between the lifting rope/chain and the horizontal line must be a minimum of 60°.
- Due to the construction and design, handling with a spreader is not possible!
- The cabins may not be handled when loaded.

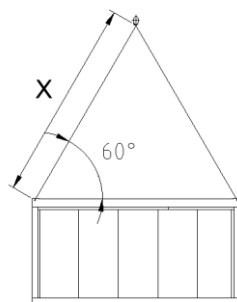


Figure 1

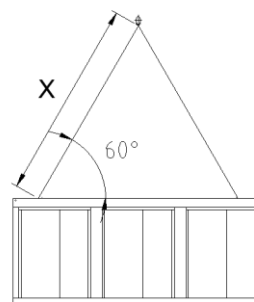


Figure 2

The minimum required rope/chain lengths are the following for each module size.

- 10' 2,989mm
- 16' 4,885mm
- 20' 6,055mm
- 24' 6,055mm

9.3 Installation / Assembly / Structure / Maintenance

General

Each individual cabin must be placed onto foundations provided by the customer with the respective number of support points (see CTX foundation plan). The dimensions of the foundation have to be adapted to local circumstances, norms and frost line, under consideration of the local soil condition and the maximum possible loads. The levelness of the foundation is a precondition for a smooth assembly and the failure-free standing of the entire construction. Should the load points not be horizontally aligned, these must be highlighted in the width of the profile.

The design of the foundations must ensure a free flow of rain water.

During set up or placement of the cabin (constructions), maximum permitted loads and regional conditions (e.g. snow loads) must be taken into account. Packaging and transport covers must be disposed of or stored by the customer.

Possible combinations of several cabins

Individual cabins can be placed side by side, one behind the other or one on top of the other, taking into account the configuration options (see item 10.1) and the max. payloads.

The cabins must be stacked exactly on top of each other. The special CTX stacking cones must be used. The cabin roof is not suitable for storage of goods and materials.

The CONTAINEX assembly instructions and the service notes must be adhered to and can be sent upon request.

Handling and installation instructions are enclosed in the cabin and must be observed.

Before starting the work, a risk analysis must be carried out in accordance with the local requirements and the applicable provisions on site. Necessary measures must be implemented by the assembly personnel. Particularly when working on the cabin roof, safeguards must be put in place to stop anyone from falling.

Sanitary fittings

After connecting the water supply the entire water pipework should be checked once more for water tightness (possible loosening during transport).

Containex denies any warranty for damages, which may result from placement contrary to the principles. Liability for consequential damages is excluded on principle.

Other

Regulatory and legal requirements regarding storage, installation and use of cabins must be observed by the customer.

The suitability of the cabin (modular system) and any supplied accessories (e.g. stairs, air conditioning etc.) for the planned application must be checked by the customer.

Technical changes, printing errors, typographical errors, and mistakes reserved.

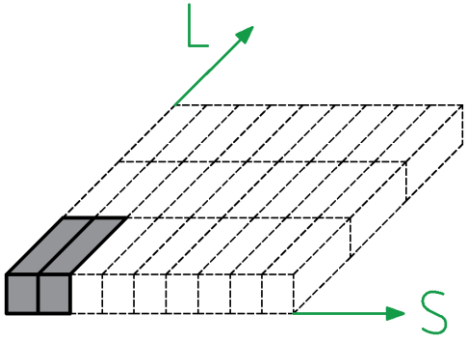
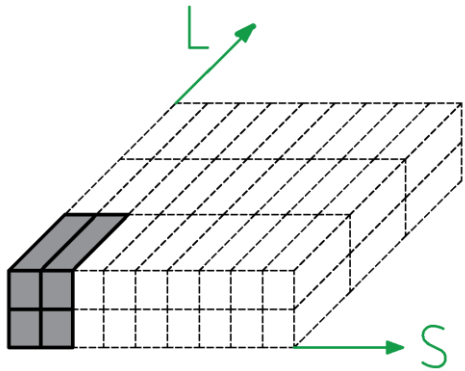
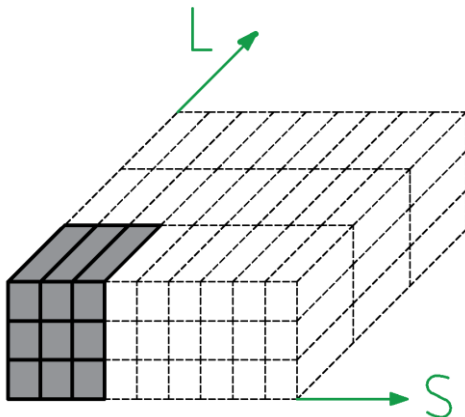
This document is a translation of the German version and is subject to translation and spelling errors. If in doubt, the German version must be consulted.

10 Appendix

The following illustrations and explanations of the possible combinations show the minimum required installation sizes for PLUS LINE modular buildings. All modular buildings that deviate from this or are smaller represent structurally critical installations.

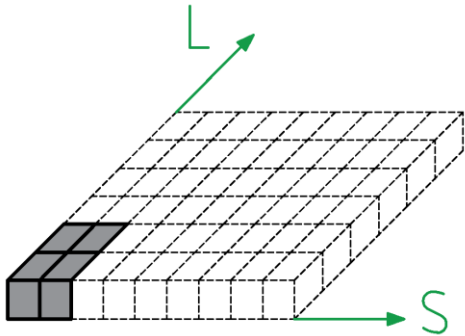
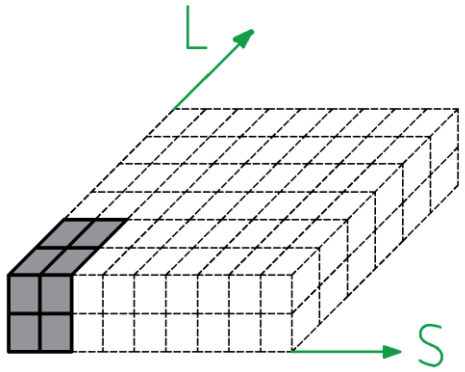
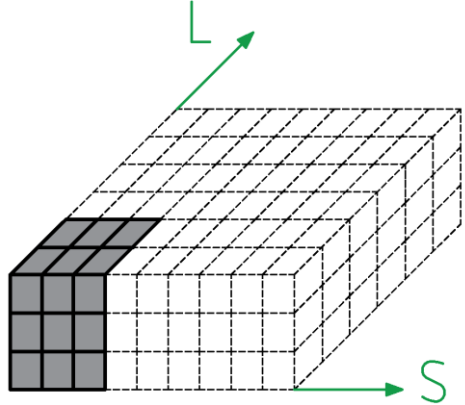
10.1 Possible combinations BP/SP (16', 20', 24') as well as 3P20 and 4P20

Number of cabins (SxLxH); Short side (S) x Long side (L) x Height (H)

1-storey	 <p>From a minimum size of 2x1x1 cabins an extension of the building in all directions is possible. Rooms of any sizes can be created</p>
2-storey	 <p>From a minimum size of 2x1x2 cabins an extension of the building in all directions is possible. Rooms of any sizes can be created</p>
3-storey	 <p>From a minimum size of 3x1x3 cabins an extension of the building in all directions is possible. Rooms of any sizes can be created NOTE: For 3-storey BP/SP24', two intermediate supports ("C-pillars") are provided on the ground floor on each long side.</p>

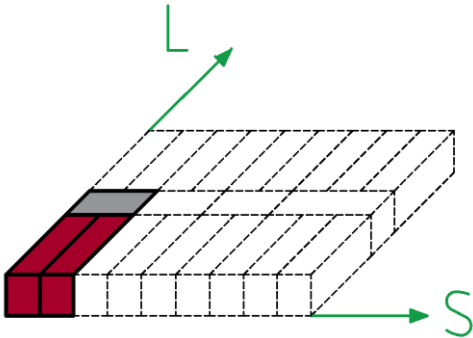
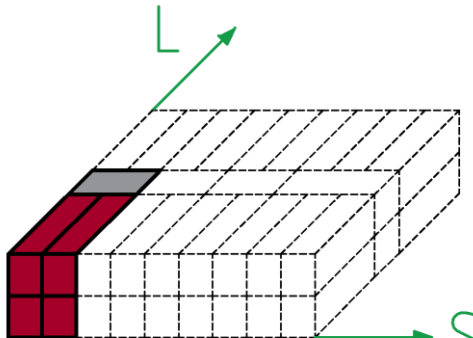
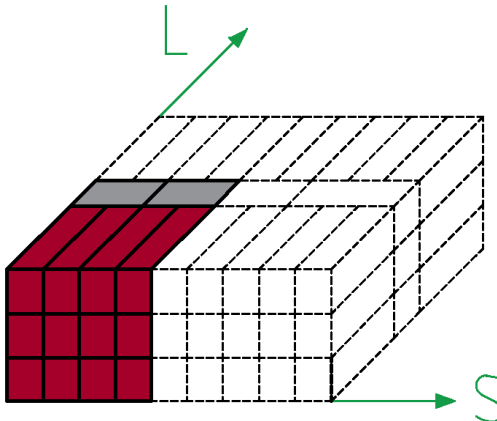
10.2 Possible combinations BP/SP 10'

Number of cabins (SxLxH); Short side (S) x Long side (L) x Height (H)

1-storey	 <p>From a minimum size of 2x2x1 cabins an extension of the building in all directions is possible. Rooms of any sizes can be created</p>
2-storey	 <p>From a minimum size of 2x2x2 cabins an extension of the building in all directions is possible. Rooms of any sizes can be created</p>
3-storey	 <p>From a minimum size of 3x2x3 cabins an extension of the building in all directions is possible. Rooms of any sizes can be created</p>

10.3 Possible combinations GP 16'

Number of cabins (SxLxH); Short side (S) x Long side (L) x Height (H)

1-storey	 <p>The illustration shows the smallest possible minimum installation size. The red cabins are BP/SP (10', 16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>
2-storey	 <p>The illustration shows the smallest possible minimum installation size. The red cabins are BP/SP (16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>
3-storey	 <p>The illustration shows the smallest possible minimum installation size. The red cabins are BP/SP (16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>

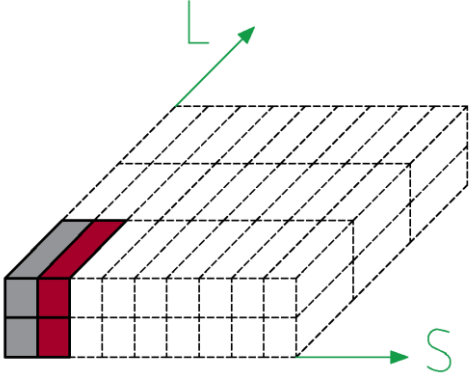
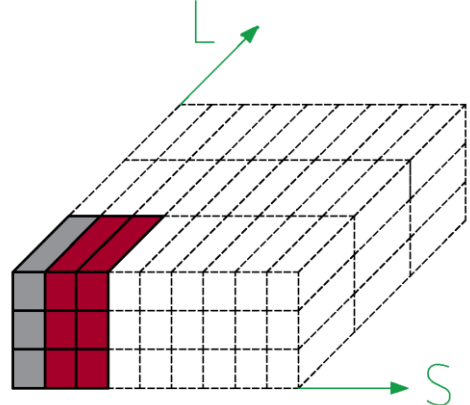
10.4 Possible combinations GP 24'

Number of cabins (SxLxH); Short side (S) x Long side (L) x Height (H)

1-storey	<p>The illustration shows the smallest possible minimum installation size. The red cabins are BP/SP (10', 16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>
2-storey	<p>The illustration shows the smallest possible minimum installation size. The red cabins are BP/SP (16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>
3-storey	<p>The illustration shows the smallest possible minimum installation size. The red cabins are BP/SP (16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>

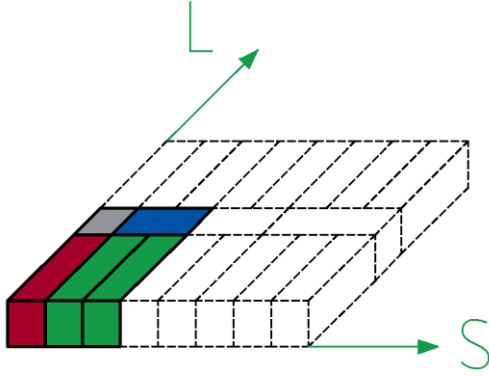
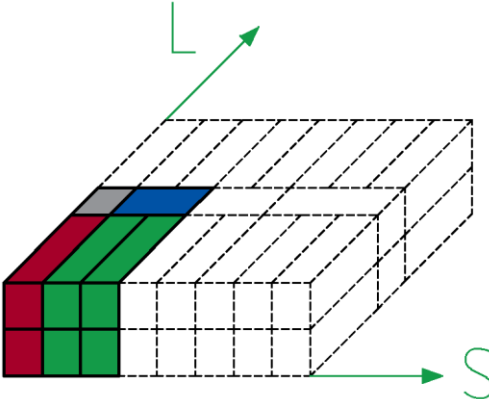
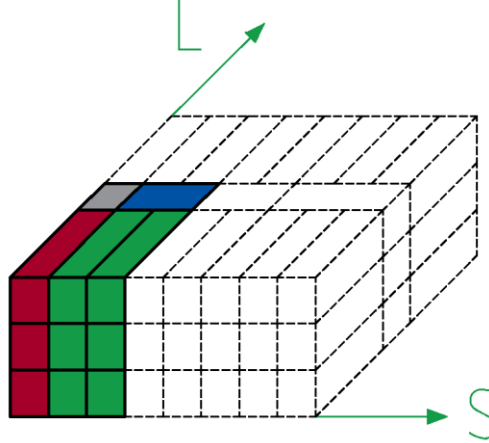
10.5 Possible combinations TP20

Number of cabins (SxLxH); Short side (S) x Long side (L) x Height (H)

2-storey	 <p>The illustration shows the smallest possible minimum installation size. The red cabins are BP/SP 20' or 3P20 / 4P20 cabins. Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>
3-storey	 <p>The illustration shows the smallest possible minimum installation size. The red cabins are BP/SP 20' or 3P20 / 4P20 cabins. Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>

10.6 Possible combinations with BP10' rotated positioned as an intermediate unit (corridor) between TP20 and/or 3P20/4P20 cabins.

Number of cabins (SxLxH); Short side (S) x Long side (L) x Height (H)

1-storey	 <p>The illustration shows the smallest possible minimum installation size. The red cabins are TP20 or 3P20/4P20 cabins. The blue cabins are GP16' or GP24' cabins. The green cabins are BP/SP (16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>
2-storey	 <p>The illustration shows the smallest possible minimum installation size. The red cabins are TP20 or 3P20/4P20 cabins. The blue cabins are GP16' or GP24' cabins. The green cabins are BP/SP (16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>
3-storey	 <p>The illustration shows the smallest possible minimum installation size. The red cabins are TP20 or 3P20/4P20 cabins. The blue cabins are GP16' or GP24' cabins. The green cabins are BP/SP (16', 20', 24'). Larger modular buildings are possible in both directions. Rooms of any sizes can be created</p>

10.7 Foundation plans

If a modular building is planned according to the arrangement options shown in the previous sections, CONTAINEX will provide the foundation plans including foundation loads on request.