TECHNICAL DESCRIPTION
„CONTAINEX BASIC Line“

Content

1. General info

The following description refers to the design and configuration of the new portable cabins in the "CONTAINEX BASIC Line series“.

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

1.1. Dimensions (mm)

Type	External			Internal			Weight (approx. specifications)
	Length	Width	Height	Length	Width	Height	
20’	6.055	2.435	2.591	5.915	2.295	2.340	1.600 kg

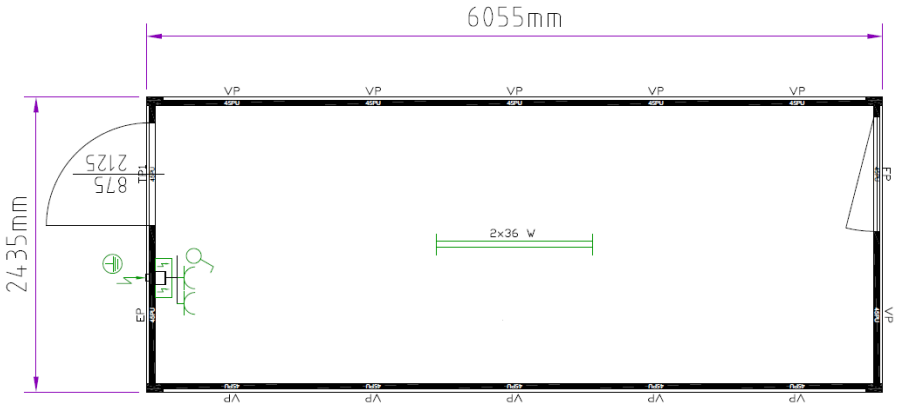
1.2. Abbreviations

The following abbreviations are used in the document:

Mineral wool	MW
Polyurethane foam	PU
Polystyrene	PS
Internal height	RIH
External cabin height	CAH
Transpack (flat-pack cabins)	TP

1.3. Standard configuration

Portable cabin 20‘



1.4. Load bearing capacity

Floor load:

Ground floor: max. load capacity 2,0 kN/m² (200 kg/m²)

Top floors: max. load capacity 1,5 kN/m² (150 kg/m²)

Characteristic snow load on the floor

with max. 2-storey installation s_k= 1,50 kN/m² (150 kg/m²)

shape parameters $\mu = 0{,}8$ ($s = \mu_1 * s_k = 1{,}2$ *kN/m²(120 kg/m²))*

with 3-storey installation s_k = 1,25 kN/m² (125 kg/m²)

shape parameters $\mu = 0{,}8$ ($s = \mu_1 * s_k = 1{,}0$ *kN/m²(100 kg/m²))*

Wind load v_b: with max. 2-storey installation

v_b = 27 m/s, [97,2 km/h] terrain category III

with 3-storey installation

v_b = 25 m/s, [90 km/h] terrain category III

For wind speeds of more than 27 m/s [97.2km/h], additional safeguards must be put in place for the cabins (bracing, screwing, etc.). Such measurements are to be calculated by approved specialists taking into consideration local standards and conditions.

1.5. Basic principles of the static calculations

Exposed side:

EN 1990 (Eurocode 0; basic principles)
EN 1991-1-3 (Eurocode 1; snow)
EN 1991-1-4 (Eurocode 1; wind)

Non-exposed side:

EN 1993-1-1 (Eurocode 3; Steel)
EN 1995-1-1 (Eurocode 5; wood)

National application documents and other special load cases (as e.g. seismic safety) are not considered explicitly and must be requested separately!

2. Container design

2.1. Frame construction

	Container
Floor frame	from cold rolled, welded steel profiles, four container corners welded
Circumferential floor beam	3 mm
Floor cross beam	made of Omega profiles, s = 2,5 mm
Fork lift pockets	two fork lift pockets on the long side
	inside clearance of fork lift pockets: 352 x 85 mm
	fork lift pocket distance in centre: 2.050 mm / optional 950 mm
Corner posts	made from cold-rolled, welded steel profiles bolted to a floor and roof frame
	4 mm
Roof frame	from cold rolled, welded steel profiles, four container corners welded
Longitudinal roof frame	3 mm
Short end roof frame	2,5 mm
Roof cross members made of wood	---
Cover	galvanised steel plate with double rabbet, thickness 0.6 mm

2.2. Floor

Insulation:

Insulating material: **PU** or **PU/PS**
Fire behaviour E in accordance with EN 13501-1

or

MW
Fire behaviour A1 (not flammable) according to EN 13501-1

Insulation thickness: 60 mm

Subfloor: Laminated steel sheet, thickness 0.60 mm

Floor:

Floor plates: **Chipboard** - thickness 22 mm
E1 in accordance with EN 312:2003,
Fire behaviour D-s2, d0 or D_{fl}-s1 according to EN 13501-1

Floor cover: **Vinyl floor cover, welded in sheets** – thickness 1.5 mm
Imperial Classic, classification usage class 23/31
Fire behaviour B_{fl}-s1 according to EN 13501-1
Slip resistance R9

2.3. Roof

Insulation:

Insulating material: **MW**
Fire behaviour A1 (not flammable) according to EN 13501-1

Insulation thickness: 100 mm

Ceiling sheeting: **Coated chipboard**
10 mm thick, decor: white
E1 in accordance with EN 312:2003
Fire behaviour D-s2, d0 according to EN 13501-1

2.4. Wall panels

Wall thickness 45 mm
Exterior colour: light grey, similar to RAL 7035
Interior colour: white (similar to RAL 9010)

Available items: Full, door, window, electrical panel

External cladding: corrugated, galvanised and coated steel sheet (thickness 0.4 mm)

Insulating material: **PU**

Insulation thickness: 45 mm

Internal cladding: galvanised and pre-coated steel sheet (thickness 0.5 mm)

2.5. Doors

- hinged on the right
- outward opening
- steel frame with triangular wrap-around sealing
- door leaf made of galvanised and laminated steel sheet on both sides
- with styrofoam filling; 40 mm thick

Dimensions:

Standard dimension:	*Clear opening:*
875 x 2,125 mm	811 x 2,065 mm

2.6. Window

Design office window:
- plastic frame with glazing white colour
- one hand tilt & turn mechanism

Standard window:	*Window options:*	*External dimension*
	office window	945 x 1,200 mm 4 / 16 / 4 mm insulated glazing

Window parapet (vertical distance between floor level and the upper edge of the lower profile of the window frame): office window (CAH 2,591mm) 870 mm

3. Electrical panel

Version: Surface-mounted IP20
Plug insert according to country standards (VDE, IT, FR, CH)

Technical data

	VDE / IT		FR	CH
Connection:	External via a distribution box (to be installed separately during commissioning), cable H07RN-F (3x6mm²) preinstalled			
Voltage:	230V / 3-pin			
Frequency:	50 Hz			
Protection:	RCD 63 A/ 0.03 A, 2-pin (230 V) Type A			
Distribution box:	Distribution box, surface-mounted, single-row (mounted on the wall)			
Cable:	HO5VV - F		RO2V	HO5VV - F
Electrical circuits:	Light:	Circuit breaker *, 10 A, 2-pin , 3x1.5 mm² Ik<10 kA		
	Sockets	Circuit breaker *, 13 A, 2-pin 3x2.5 mm² Ik<10 kA		MCB 10 A, 2-pin 3x2.5mm² Ik<10 kA
Socket:	2 pcs. single sockets			
Lighting:	Light switch			
	1 pc. double light bar with cover and fluorescent tubes 2 x 36 W			

* LC-release switch characteristic C

Earthing

- After installation of the electrical panel, the PE rail of the distribution box must be properly connected on site by a qualified electrician using the supplied PE cable 1 x 6 mm² with the closest earthing bolts inside the roof frame (torque 10-15 Nm).
- Universally usable grounding terminal:
- 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 grounding terminal.
- The earth terminal is mounted using a self-tapping screw M10 (DIN 7500) with self-tapping thread (torque 40 Nm). The screw can be re-screwed up to 40x. The positioning of the screw is carried out in the factory at an appropriate spot on the cabin.
- An earthing terminal is delivered with the cabin and must be installed on site by the customer.
- The protective earthing of the container must be carried out by the customer at the installation site.
- The effectiveness of the container's earthing connection, the use of the screws and the torques, 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.

Lightning and overvoltage protection:

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

Wiring:

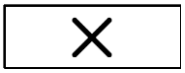
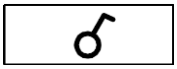
- Fixed-wiring electrical panel

Safety advice: The instructions for the assembly, commissioning, utilisation and maintenance of the electrical installations is delivered in the distribution box and must be observed!

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 checked on potential equity and low Ohm level).
Attention: The supply lines are designed for a rated current of max. 32 amperes. These are not secured with an overcurrent protection device. The connection of the cabins to the external electrical power supply may be only undertaken by a certified specialist company.
Before using the cabin (modular building) for the first time the efectiveness of the protection measures for the fault protection need to be checked by an authorised specialist company.
Attention:
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 containers are delivered into areas with increased lightning activity further measurements have to be taken under account to prevent overvoltage depending on the country specific rules.
- 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 cabins have to be secured against thermal overload with a type gL fuse or gG with max. IN = 32A.

3.1. Labelling of the electric (symbols)

	general light		single light switch
	single socket		

4. Miscellaneous

4.1. Transport

Containers must be transported on suitable trucks. The local laws for load securing must be adhered to. The containers are not suitable for rail transport. The containers must be transported empty.

The portable cabins are delivered flatpacked (Transpack). Standard package height 460 mm.

4.2. Handling

The following handling instructions must be observed for 20' cabins (assembled or flatpacked):

The 20' cabins or packages can be lifted with a forklift (min. fork length 2,450 mm, min. fork width 200 mm) or by crane. The ropes 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 length for a 20' container is at least 6.5 m.

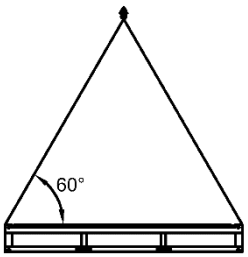
Due to the construction and design, handling with a spreader is not possible! The cabins may not be handled when loaded.

Only single packets of the Transpack cabins are allowed to be lifted.

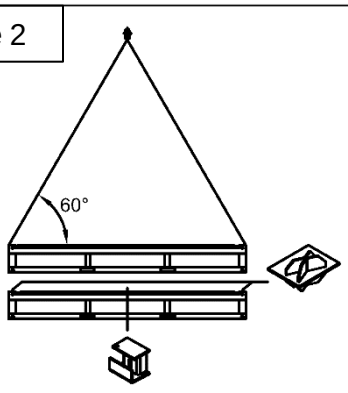
4 pieces of stacking cones (in the corner casts) and 2 pieces of clamping wedges (1 piece on each of the longside roof sections) must be put between the individual packets (picture 2).
Do not place any extra weight on the top packet!

A maximum of 6 packages can be stacked on top of each other.

Picture 1



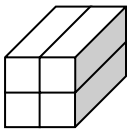
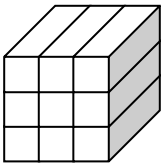
Picture 2



4.3. Installation / Assembly / Statics / Maintenance

In General:
Each individual cabin must be placed on foundations provided on site with at least 6 support points (Appendix 1). The dimensions of the foundation has 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 pre-requisite for trouble-free assembly and the correct positioning of the cabin or construction. If the support points are not level, the full width of the frame profile must be supported
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. After removing the transport covers, the holes in the floor frame must be sealed with silicone. Packaging and transport covers must be disposed of by the customer.

Possible combinations of several cabins:
Individual cabins with 14 panels can be selectively configured next to, behind, or on top of each other, while bearing in mind the structural limitations and the max. permitted loads.
With stackings, the following minimum configuration sizes must be observed.:

2-storey arrangement	3-storey arrangement
 2x1x2	 3x1x3

The container 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.
The instructions are in the cabin and must be adhered to.

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.

Further technical information upon request.

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

The suitability of the cabin and any supplied accessories (e.g. electrical panels) for the intended use must be checked by the customer.
Subject to technical alterations!

4.4. Paint

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

Wall panels: 25 µm coating thickness, similar to RAL 7035

Frame: 75-120 µm coating thickness, similar to RAL 9002

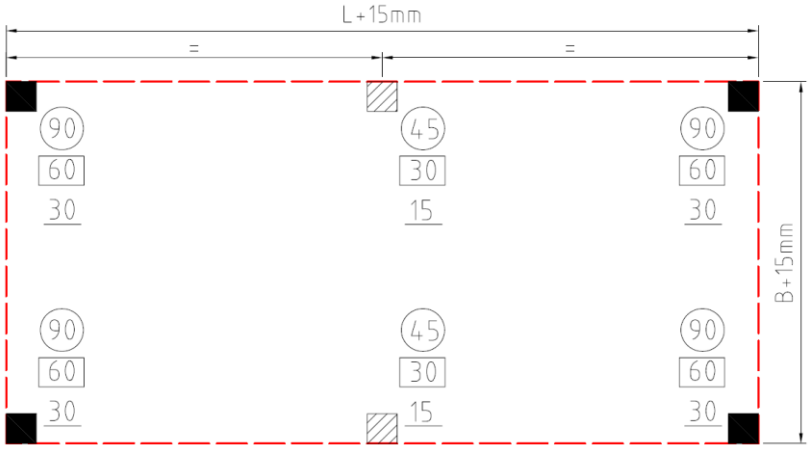
The above-mentioned parts are painted in different types of production. Thus, shades similar to RAL are achieved. We accept no liability for colour variations in comparison with RAL tones.

4.5. General foundation plan

Each individual container must be placed on foundations provided on site with at least 6 support points. The smallest foundation size is 20 x 20 cm, but 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 customer must carry out the relevant measures.

Cabin length (l); cabin width (b)

Example: single cabin



Foundation loads for 3-storey modular buildings:
Foundation loads for 2-storey modular buildings:
Foundation loads for single-storey modular buildings:

All foundation loads in kN

Example: Modular building consisting of 4 cabins

When combining several cabins higher loads at the inner foundation points have to be considered - as illustrated..