

Technical description for Single (5') and Double (8') offices and toilets

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1. In General

The following description refers to the configuration and equipment of newly produced 5' and 8' office and toilets.

1.1. Dimensions (mm) and weights (kg)

Type	External			Inward			Weight (approx. specifications)	
	Length	Width	Height	Length	Width	Height	BM	SA
5'	1,200	1,400	2,540*	1,055	1,255	2,200	420	430
8'	2,400	1,400	2,540*	2,255	1,255	2,200	580	710

The listed dimensions and weights refer to the designs according to 1.3 and can vary depending on configuration and equipment.

* including lifting eyes: 2,545 mm

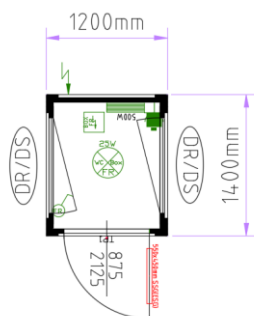
1.2. Abbreviations

The following abbreviations are used in the document:

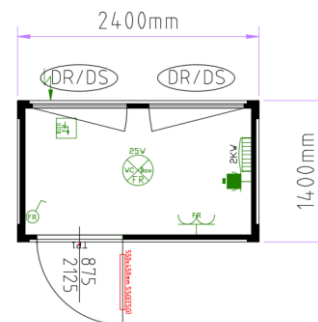
Office unit	BM
Sanitary unit	SA
Mineral wool	MW
Polyurethane	PU
Internal height	RIH
External height	CAH
Toughened safety glass	ESG

1.3. Design options

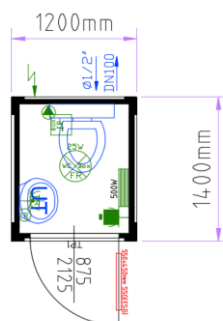
Office unit 5'



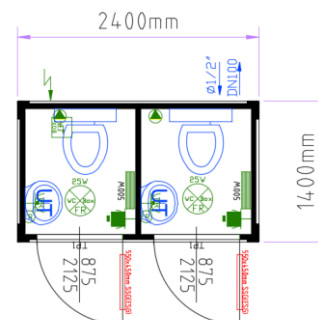
Office unit 8'



Sanitary unit 5'



Sanitary unit 8'



1.4. Insulation

Component	Insulating material	Thickness [mm]	U-value [W/m ² K]
Roof	MW	120	0.30
Wall panels	PU	45	0.51
Floor	MW	60	0.55

The U-values refer to the specified insulation thicknesses in the space

Window	Insulating material	Thickness [mm]	U-value [W/m ² K]
	Standard insulation glazing with gas filling	4/16/4	1.10

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

External door	Insulating material	Thickness [mm]	U-value [W/m ² K]
875	Polystyrene	40	1.90

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

1.5. Load bearing capacity

Floor load: maximum permissible area load $q_k = 2,0 \text{ kN/m}^2$ (200 kg/m²)

Snow load: characteristic snow load on the floor $s_k = 1,25 \text{ kN/m}^2$ (125 kg/m²)

*Form coefficient $\mu = (0,8; (s = \mu_1 * s_k = 1,0 \text{ kN/m}^2 (100 \text{ kg/m}^2))$*

Wind load: $v_b = 25 \text{ m/s}$, (90 km/h) terrain category II *
 $v_b = 13.9 \text{ m/s}$, (50 km/h) terrain category II-III
 $v_b = 15.3 \text{ m/s}$, (55 km/h) terrain category IV

* protection against tipping required

At base wind speeds of over 13.9 m/s or 15.3 m/s (see above), safeguards (bracing, bolting, supports, etc.) against tipping of the unit must be put in place in consultation with authorised experts in accordance with local regulations

1.6. Basic principles of the static calculations

Exposed side: EN 1990 (Eurocode 0; basics of structural engineering)
EN 1991-1-1 (Eurocode 1; tare weights and payloads)
EN 1991-1-3 (Eurocode 1; snow load)
EN 1991-1-4 (Eurocode 1; wind load)

Non-exposed side: EN 1993-1-1 (Eurocode 3; steel construction – general rules for building construction)
EN 1993-1-3 (Eurocode 3; steel construction – cold-formed thin-walled components and sheets)
EN 1995-1-1 (Eurocode 5; timber construction – general rules for building construction)

National application documents and other special load cases (e.g. earthquake safety) are not explicitly taken into account!

2. Construction

2.1. Frame construction

	BM/SA-Box 5'	BM/SA-Box 8'
Floor frame	made of cold rolled, welded steel profiles, 4 feet, welded	
Floor beam	60x60mm steel profile, thickness 2,0 mm	
Floor cross beam	made of Omega profiles, thickness 2,5 mm	
Fork lift pockets	two fork lift pockets on the long side	2 forklift pockets on the front
	fork lift pocket distance in centre: 780 mm	fork lift pocket distance in centre: 930 mm
	inside clearance of fork lift pockets: 250 x 75 mm	
Corner column	made of cold rolled, welded steel profiles, thickness 2,0 mm bolted with floor and roof frame	
Roof frame	made of cold rolled, welded steel profiles, 4 corners, welded	
Roof beam	thickness 2 mm	
Lifting eyes	1 piece per short end	2 pieces per short end
Roof cross members made of wood	---	
Cover	galvanised steel sheet riveted to the roof beam, thickness 0.6 mm	

2.2. Floor

Insulation:

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

Insulation thickness: 60 mm

Subfloor: galvanised steel sheets, thickness 0,6 mm

Floor:

Floor panel: chipboard, thickness 22 mm
E1 in accordance with EN 312
fire behaviour D-s2, d0 or D_{fl}-s1 according to EN 13501-1

Floor cover: aluminium chequered plate, thickness 2 + 0.5 mm

2.3. Roof

Insulation:

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

Insulation thickness: 120 mm

Ceiling sheeting:

chipboard, thickness 10 mm
white
E1 in accordance with EN 312
fire behaviour D-s2, d0 or D_{fl}-s1 according to EN 13501-1

CEE connectors: externally sunk into the long side of the roof frame

2.4. Wall panels

Available items:

- full
- door
- window
- sanitary window

External cladding: corrugated, galvanised and coated steel sheet, thickness 0.6 mm

Insulation:

Insulating material: PU
fire behaviour F in accordance with EN 13501-1

Insulation thickness: 45 mm

Internal cladding: corrugated, galvanised and coated steel sheet, thickness 0.5 mm, white

Rain drip: all around over lower panel edging

2.5. Partition walls

Available items: - full, exclusively for BM/SA unit 8'

Cladding on both sides: corrugated, galvanised and coated steel sheet, thickness 0.5 mm, white

Insulation:

Insulating material: PU
fire behaviour F in accordance with EN 13501-1

Insulation thickness: 45 mm

2.6. Doors

Specification:

- according to DIN regulations
- right or left hand hinged
- outward opening
- steel frame with triangular wrap-around sealing
- door leaf made of galvanised and laminated steel sheet on both sides
- profile knob cylinder: exterior profile cylinder / interior rotary knob

Dimensions:

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

Optional:

- insulated glazing clear glass: B x H 550 x 450 mm (ESG)
550 x 1108 mm (ESG)
238 x 1108 mm (ESG)
- insulated glazing privacy glass: B x H 550 x 450 mm (ESG)

2.7. Window

Specification:

- plastic frame with insulated glazing, white colour
- one hand tilt & turn mechanism
- incl. gas filling

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.

Dimensions:

Window variants:	Outer frame dimensions:
office window	945 x 1,200 mm
windows with pass-through / speak-through	945 x 1,200 mm
sanitary window (privacy glass)	652 x 714 mm

Window parapet:

Vertical distance between floor level and the upper edge of the lower profile of the window frame

Window variants:	Floor to window frame height:
office window	870 mm
windows with pass-through / speak-through	870 mm
sanitary window (privacy glass)	1,525 mm

Optional:

- window grille (sanitary window)

3. Electrical installations

- Specification:**
- concealed cabling– wet room– IP44 ¹
 - plug insert according to country standards
 - country specific design / variations possible

	Basis VDE (ÖVE, SKAN, NO, CZ/SK, IT)	FR	GB	CH, DK
Connection	recessed CEE external plug connection			
Voltage	230 V / 3- poles / 4- poles ² / 32 A (3x6 mm ² – cable H07 RN-F)			
	400 V / 5-poles / 32 A (5x6 mm ² - cable H07 RN-F)			
Frequency	50 Hz			
Protection	residual current operated device 63 A / 0,03 A, 2- poles (230 V)			
	residual current operated device 40 A / 0,03 A, 4- poles (400 V)			
Distribution box	surface mounted distribution box, single row, wet room ³			
Cable ⁴	H05 VV-F	RO2V	H05 VV-F	
Electrical circuits	light	circuit breaker ⁵ 10 A , 2- poles, 3x1,5 mm ²		
	heating	circuit breaker ⁵ 13 A , 2- poles		
		3x1,5 mm ² bzw. 3x 2,5mm ² (cable- and country-specific)		
	socket	circuit breaker ⁵ 13 A , 2- poles		circuit breaker ⁵ 10 A , 2- poles
3x1,5mm ² bzw. 3x2,5 mm ² (cable- and country-specific)		3x1,5 mm ²		
Plug connector socket	single socket / double socket / spur			
Lighting	light switch			
	light with bulb LED 8 W / single light fitting 1 x 36 W			

¹ excluding GB electrics

² only with NO electrics

³ mounting on ceiling

⁴ Fire behaviour E_{ca} in accordance with EN 13501-6

⁵ LC-release switch characteristic C

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

- HD 60364-1:2008
- HD 60364-4-441:2007
- HD 60364-7-717:2004
- HD 60364-7-701:2007
- HD 384.4.482 S1:1997
- HD 384.7.711 S1:2003

Earthing:

Earthing lug made of galvanised flat iron and cross clamp.
The protective earthing of the unit must be carried out by the customer at the installation site.

The effectiveness of the units 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.

Lightning and overvoltage protection:

The measures for the outer and inner lightning protection (earthing measures, overvoltage protection devices) required for the installation site and for the sensitivity of the devices operated in the unit must be observed and manufactured by the customer if necessary.

Wiring:

Fixed cabling depending on the panel configuration and the user.

Safety advice:

PE rail of the distribution box must be electro-technically connected with a 1x6mm² PE cable on the inside of the roof frame with a grounding pin and may not be removed (torque 10-15 Nm).

The commissioning of the unit must be carried out by an electrician. 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 unit to the supplying low voltage grid, all consumers (devices) must be switched off and earthing established (earthing feed cable and earthing connecting lines between the units must be checked for quality of potential and low impedance).

Attention: The supply- and connection cables are made for an operating voltage of max. 32 Ampere. These aren't secured with a overcurrent protection device. The connection of the unit to the external power supply may only be undertaken by a certified specialist company. Before the unit (unit system) is used for the first time, the effectiveness of the protection measures for the fault protection must be checked by an authorised specialist company.

Attention: The commissioning of boilers and/or under table units is only permitted if they are filled! Cleaning with a high-pressure cleaner is FORBIDDEN. The electrical equipment of the unit must never be cleaned by a direct water jet.

If the units are delivered into areas with increased lightning activity, further measures must be taken to prevent overvoltages depending on the country-specific rules.

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




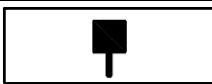

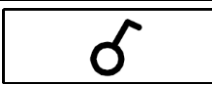


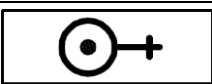
If the units are used in areas at risk of earthquakes, the national regulations must be applied and the equipment must be adapted accordingly.

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 of the unit are designed for minimal vibration. When higher loads are given, appropriate measures must be taken according to the national technical regulations (and/or checks of the plug or screw contacts).

The choice of the external linking cables of the unit must be adapted to the national technical regulations. The units must be secured against thermal overload with a type gL fuse or gG with max. $I_n = 32A$.

3.1. Labelling of the electric (symbols)

	general light		ventilator
	single socket		spur
	double socket		single light switch
	heater, general		series switch
	boiler, general		

3.2. Heating

Individual heating by means of electric convectors or fan heaters with thermostat control and safety switch for overheating. Mechanical ventilation options available with electrical ventilators. Regular ventilation of the rooms must be provided. A relative humidity of 60% should not be exceeded in order to avoid condensation!

All safety distances and instructions issued by the supplier for the equipment must be adhered to!

The appropriate manuals and instructions are supplied with the units.

Safety distance for heaters:

	Convector heater	Fan heater
top	150 mm	100 mm
below	100 mm	100 mm
right	100 mm	100 mm
left	100 mm	100 mm
in front	500 mm	500 mm
behind	22 mm	10 mm

Further information regarding the instructions are available from the supplier!

3.3. Electrical options

Electrical fixtures	Power input	Capacity
Ventilator	15 W	170 m ³ /h
Hygrostatic controlled ventilator	15 W	170 m ³ /h
Convactor heater	0,5 kW	
Convactor heater	1,0 kW	
Fan heater	2 kW	
Undersink water heater 5 l	2 kW	
Boiler: 15 l	2 kW	
Boiler: 50 l (GB only)	2 kW	
Boiler: 80 l	2 kW	

4. Water installations

Supply: Supply via ½", ¾" or 1" pipe sideways through the exterior wall

Internal: PP-R piping (in accordance with EN ISO 15874)

Operating pressure: Max. permitted operating / connection pressure 4 bar

Warm water preparation: By means of electric boiler, size dependent on unit type

Attention: The boilers with 80 litres capacity are suitable for a max. operating pressure of 6 bar. A higher water pressure is reduced with an appropriate pressure reducing valve!

Discharge: The waste water is combined via plastic pipes DN 50 and DN 110 (external diameter 50 and 110 mm) in the unit, and passes sideways through the exterior wall.
The customer must drain any sewage into an approved sewage network in accordance with local regulations for water and faecal drains.

Note: Should the unit not be used at temperatures below +3°C, the entire piping 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 on the water conduit must always stay open.

5. Design options

General equipment

- insect screen for office/sanitary window	- telephone duct in the panel
- cable bushing in the roof frame	

Sanitary fixtures

- boiler: 15 l / 80 l	- sanitary connection sunk into the panel
- pressure reduction valve	- soap dispenser
- shower cubicle with curtain	- Stop & Go fitting for shower
- wet room electrics	- Stop & Go fitting for wash hand basin
- ceramic hand wash basin	- undersink water heater 5 l
- electrical hand dryer	- urinal
- metal mirror	- water installations (water inlet and outlet)
- paper towel dispenser	

6. Paint

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

Wall panels: 25 µm coating thickness

Frame: 75 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. Miscellaneous

7.1. Transport

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

The units are not suitable for rail transport. The units must be transported empty. Pre-installed built-in components are excluded.

7.2. Handling

The following handling instructions must be observed:

1. The units can be lifted with a forklift (length of fork minimum 1400 mm, width a minimum of 200 mm) or by crane. The ropes/chains must be fastened to the lifting eyes. The angle between the rope/chain and the horizontal line must be a minimum of 60°.
2. Due to the construction and design, handling with a spreader is not possible. The units must not be loaded during handling.
3. Stacking on top of each other is not possible!

7.3. Construction / assembly / servicing

Each individual unit must be placed on foundations provided on site with at least 4 points of support. 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 unit. 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 unit, payloads 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.

The service notes from CONTAINEX must be observed and will be transmitted on request. The instructions for use are in the unit 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.

Sanitary fittings:

After connecting to the water supply the entire water circulation 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.

Further technical information upon request.

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

The suitability of the unit and any supplied accessories for the intended use must be checked by the customer.

Subject to technical alterations.

8. General foundation plan

Each individual unit must be placed on foundations provided on site with at least 4 points of support. 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.

