INSTALLATION MANUAL

FLAME AVIATION

Safety cautions

- ⚠ The fire trainer may never be lifted by a forklift.
- ⚠ The fire trainer may never be lifted with a spreader.
- ⚠ During the installation of the fire trainer, maximum permitted loads and local conditions (e.g. wind, snow loads) must be taken into account.
- ⚠ The fire trainer may only be maintained by a qualified engineer which is aware of the safety procedures for the fire trainer.
- ⚠ Before connecting the fire trainer to power, water and gas supplies, the fire trainer shall be visually checked for damages to the exterior and the technical installation.
- ⚠ The fire trainer should be connected to power by Flame Aviation or as indicated in the electrical drawings of the fire trainer.
- ⚠ Operating the fire trainer may only be performed by individuals who are aware of the safety procedures of the fire trainer as described in the Instructor Manual.
- ⚠ The fire trainer shall be powered on at all times to ensure the gas detection system and defrost heating is active.
- ⚠ In case an aural alarm sounds, an emergency situation has occurred. All persons shall exit the fire trainer immediately.
- ⚠ The proximity of the fire places may be hot after training and shall not be touched.
- ⚠ Maintenance and installation may only be performed by trained personnel.

Weight & dimensions

	V7000 Brigade™		V9000 Commander™	
	Metric	Imperial	Metric	Imperial
Length	912 cm	30 ft	912 cm	30 ft
With	243 cm	8 ft	488 cm	16 ft
Height	259 cm	8,5 ft	259 cm	8,5 ft
Weight fire trainer	5,700 KG	12,600 lbs	5,700 KG	12,600 lbs
Weight obs cabin	n.a.	n.a.	2,800 KG	6,200 lbs

Utilities

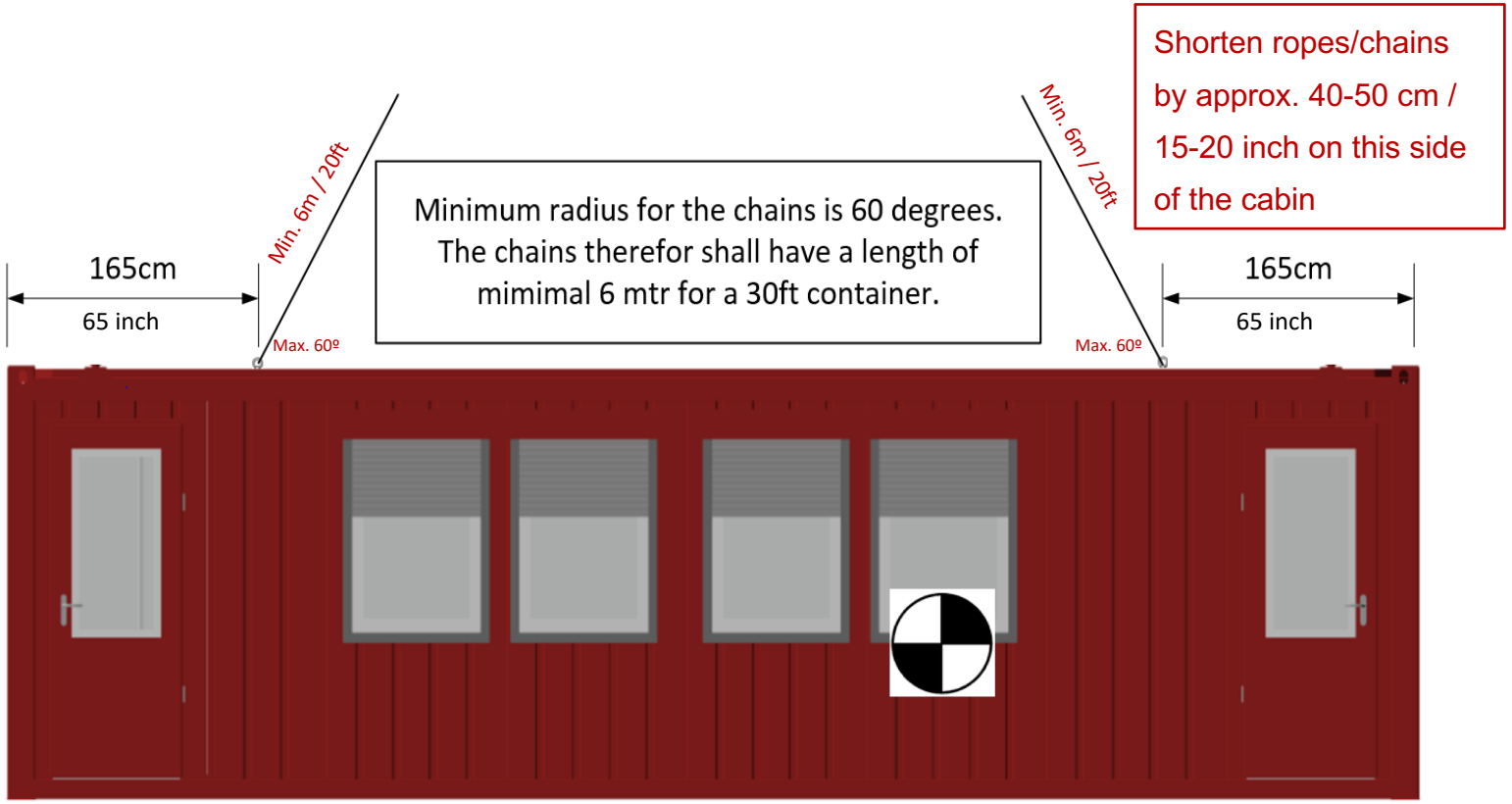
	V7000 Brigade / V9000 Commander	
	Metric	Imperial
Electrical power	400V / 32A (380V / 32A)	400V / 32A (380V / 32A)
Power consumption	3 – 5 kWh	3 – 5 kWh
Water flow	20 L/min.	5 gallon / min
Water pressure	2 – 4 Bar	29 – 58 PSI
Internet connection	10 mbit/s	10 mbit/s
Gas bottle	Propane / LPG / BBQ-gas	Propane / LPG / BBQ-gas

Off loading

Instructions for off-loading the cabins from the truck

- The fire trainer is NOT build in a cargo container but in a cabin.
- Due to the construction and design of the fire trainer cabin, handling with a spreader or a fork lift is strictly FORBIDDEN.
- Make sure the twist locks on the truck are UNLOCKED before lifting the fire trainer.
- For on- and offloading from a truck, the fire trainer is equipped with four lifting hooks.
- Due to its construction, the fire trainer may only be lifted on these hooks with ropes/chains, or on a flatbed.
- When the fire trainer is lifted to higher elevations than the truck, a flatbed shall be used.
- The ropes/chains have to be provided by the crane operator and shall be fastened to the lifting hooks fitted at the top of the fire trainer.

Lifting

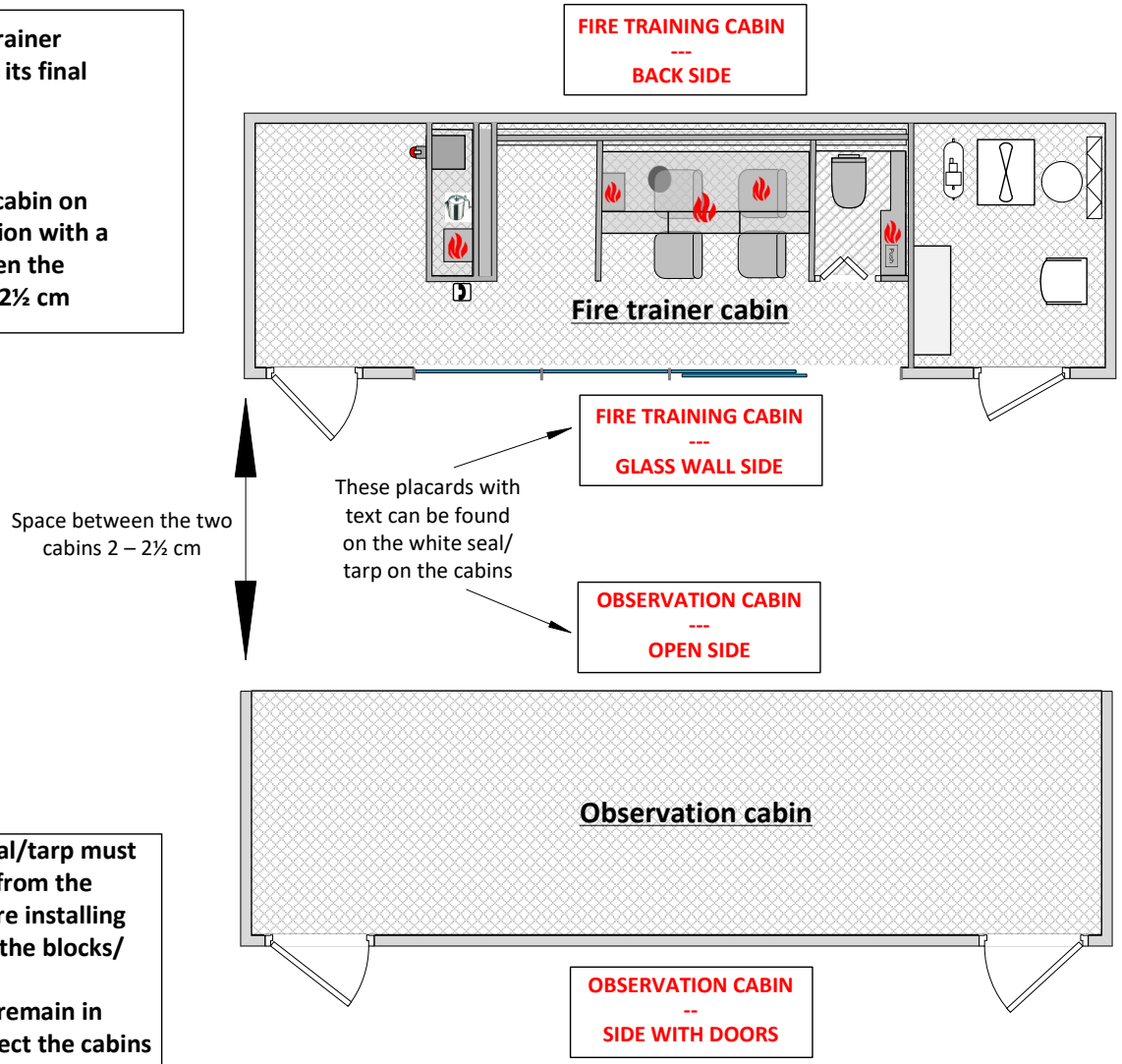


- The Center of Gravity of the Fire Trainer Cabin is NOT in the middle of the length of the Fire Trainer Cabin.
- Therefore, the ropes/chains shall be shortened by approx. 40-50 cm / 15-20 inch on the right side of the cabin

Positioning

Put the fire trainer cabin first on its final position.

Then put the observation cabin on its final position with a space between the cabins of 2 – 2½ cm

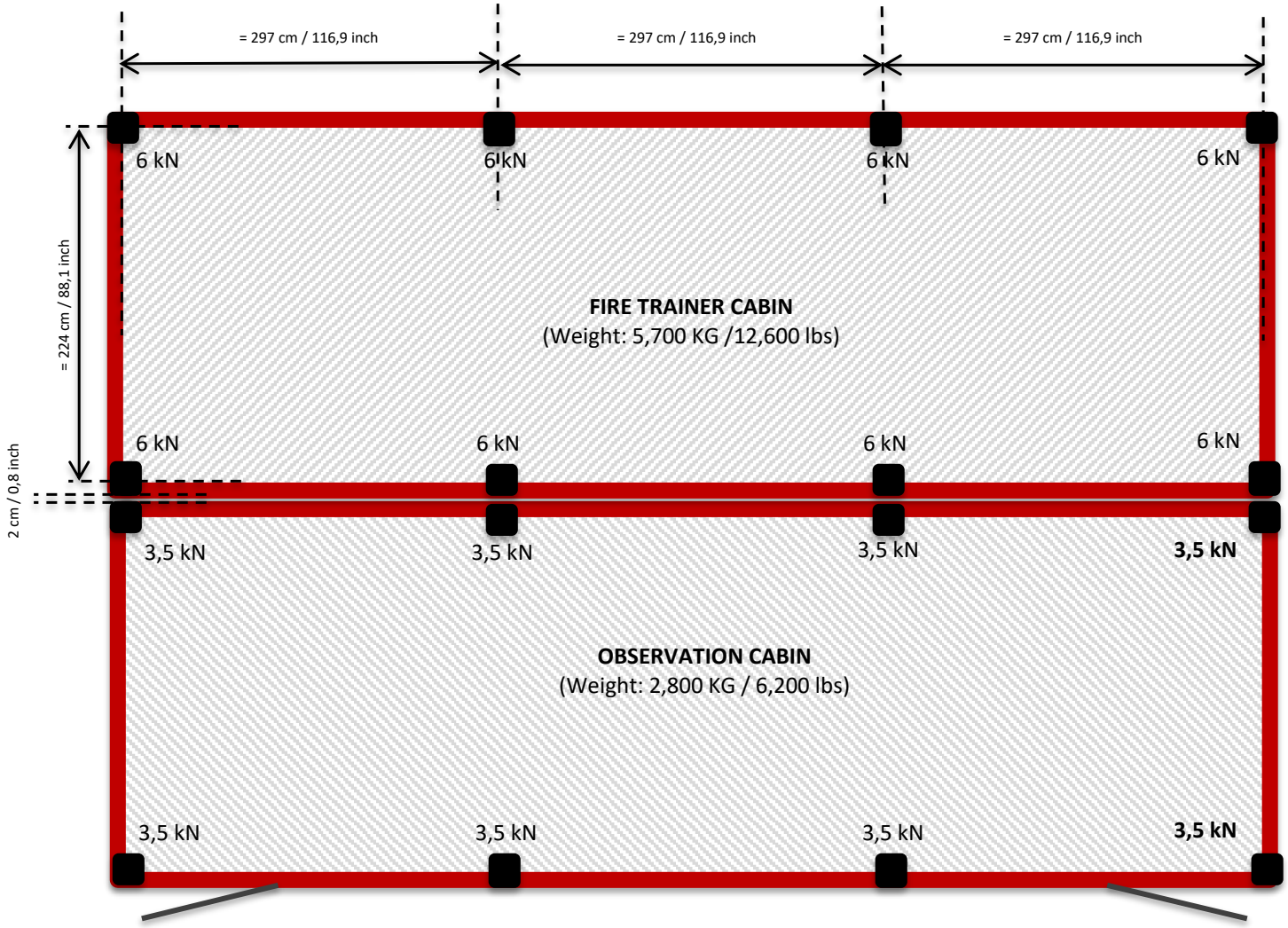


The white seal/tarp must be removed from the bottom before installing the cabin on the blocks/ tiles.
The rest can remain in place to protect the cabins until fire trainer is installed by Flame Aviation

Floor requirements

- Normally, a parking lot or normal pavement is sufficient to place the fire trainer on (see picture).
- On a weak underground, Stelcon concrete plates can also be sufficient to create a flat installation area
- Customer shall make available 16 or 32 tiles, bricks or concrete blocks to place the fire trainer on to allow ventilation under the cabin and for water drainage.
- The size of the tiles/blocks shall be minimum 20 x 20 cm / 8 x 8 inch.
- Minimal eight support points per cabin are required (see schematic).
- Local circumstances, norms, maximum possible (roof) loads (e.g. snow) and local soil conditions might require larger foundations.
- Local circumstances like typhoons might require to anchor the fire trainer.

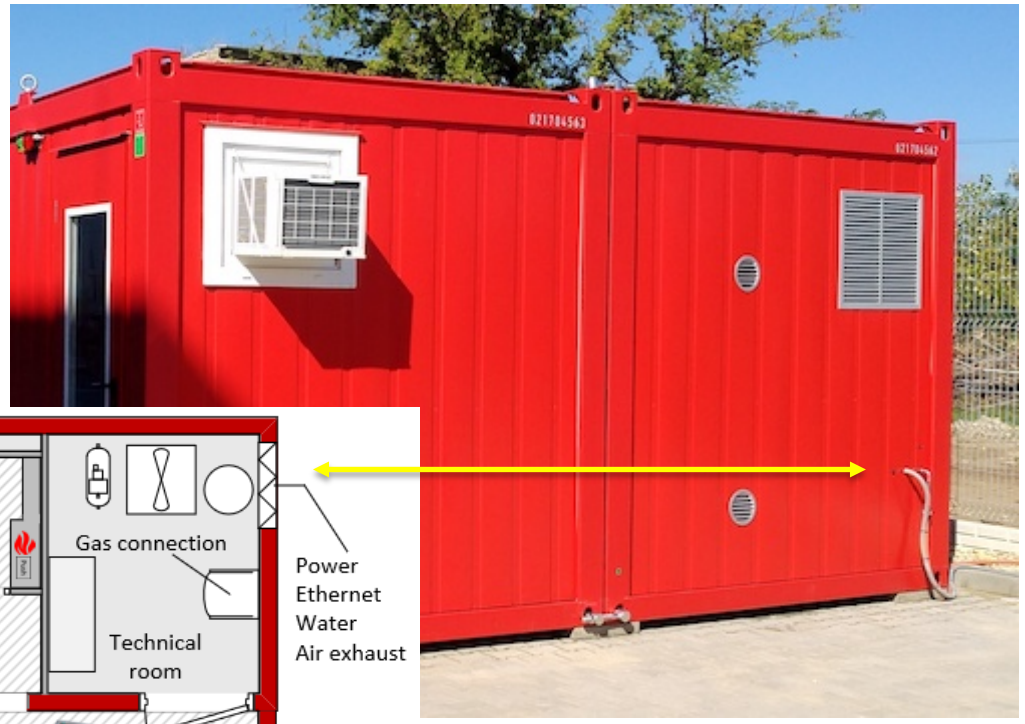
Support points

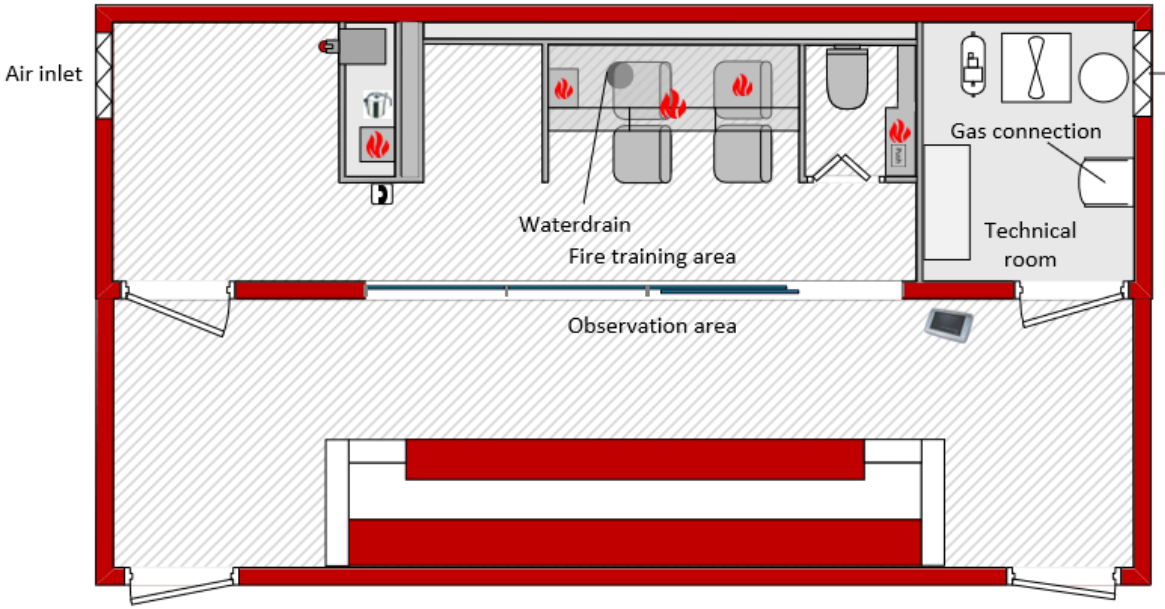


Connecting utilities

Connections for:

1. Power
2. Water
3. Internet





Electrical power

- The fire trainer is designed for 3-phase 400VAC (380V), 3P+N+PE, 50/60Hz with an 32A upstream fuse. (other voltage values on request)
- The power cable must be 5x6mm² / 10 AWG (=3ph+N+PE). Flame Aviation inserts the power cable into the technical room of the fire trainer and will mount a power plug on the cable. The power socket is *inside* the technical room (see picture). On request, Flame can also make an external power socket.
- The fire trainer shall be connected to grounding (PE) via a 16mm² / 6 AWG grounding wire.
- Nominal power consumption without climate control (heating/airco) is approx. 1kw per hour
- Nominal load with climate control depends on the local climate.

Water supply connection

- The fire trainer is designed for normal tap water with a water pressure of 2-4 Bar / 29 – 58 PSI and a minimal waterflow of 20 ltr/min / 5 gallon/min. In case the local water pressure is higher, a water pressure reducer shall be installed.
- The fire trainer is equipped with a Grünbeck SoftliQ:SC water decalcifier unit with a build-in check valve (for back-flow protection).
- Only a 20mm / 1 inch flexible water hose (garden hose) is required; Flame Aviation will provide the (Gardena) connection.
- Depending the installation location, the fire trainer is equipped with de-frost heating. However, customer must ensure the water line to the cabin will not freeze in winter conditions. (Water hoses with build-in electrical heating are randomly available)

Gas bottle

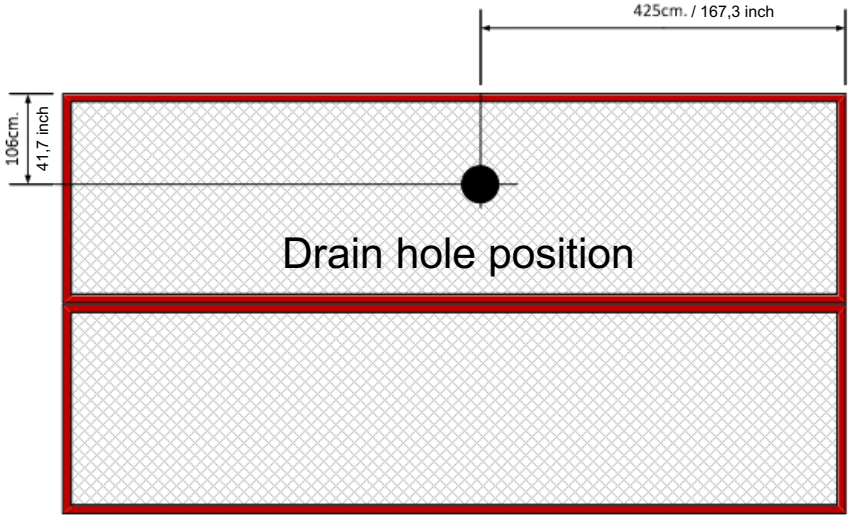
- The fire trainer is designed for Propane gas (LPG or BBQ gas).
- The gas bottle is stored in a ventilated gas cabinet.
- The fire trainer will be delivered with a ½" left thread female connection ("Shell connection") to connect with a bottle of Propane gas.
- Customer must supply a bottle of propane gas ("BBQ gas").

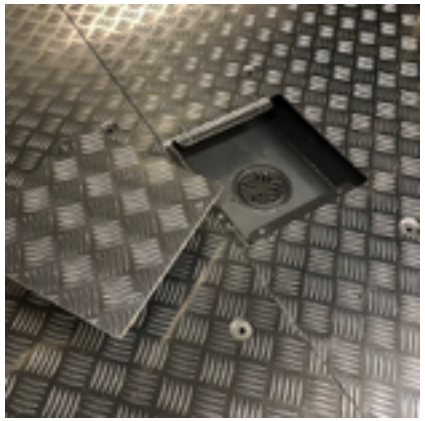
½" left thread female connection

Water drainage

- Normally, the water used during training is drained via the water basins under the floor to the pavement.
- Provided the fire trainer is used according the operator's manual, the water is not contaminated.
- Local regulations shall be followed regarding the disposal of the (waste)water into a sewage network.
- Under normal operating circumstances, the water flow shall not exceed 15L/hr.

Note: for internal installation, customer might want to install a water collector under the cabin to collect and drain the water or have a pump installed (optional, see picture).





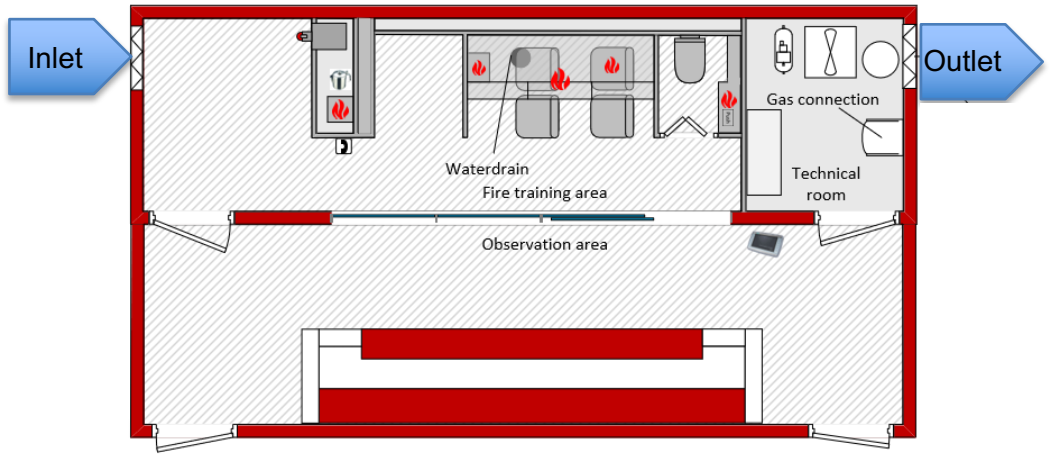
Standard water drain hole

Water drain pump

Air inlet and outlet

- The fire trainer is equipped with an automatic air extraction system with a maximum ventilation rate of 80 air changes per hour. (4400m^3/hr).
- Air inlet: on the left side of the cabin is an automatic servo driven inlet valve for the supply of fresh air into the fire trainer (L x W 900mm x 600mm / 35,43 inch x 23,6 inch)
- Air outlet: on the right side of the cabin is an air outlet (L x W 630mm x 630mm / 24,8 inch x 24,8 inch)
- Internal installation, customer shall connect a duct to the air outlet for guiding the used air and smoke to outside of the building.


Air inlet (90cm x 60cm)




Air outlet roster


Air outlet duct (optional)

Sun protection

- To protect the fire trainer from direct sunlight and to slow down the heating up of the fire trainer interior, a roof above the fire trainer can be considered.

Checklist

Installation of the fire trainer is *plug & play* if the following provisions are available:

- ❑ The installation area is free to place the fire trainer cabins?
- ❑ There is space for the truck to unload the cabins?
- ❑ Enough tiles or bricks are available to position and level the cabins?
- ❑ Electrical power cable with 400VAC (380VAC), 50/60Hz (=3ph+N+PE) is available?
- ❑ 20mm / 1 inch flexible water hose is available?
- ❑ Bottle of propane gas (“BBQ gas”) is available on site?
- ❑ Internet connection is available with a minimum speed of 10 mbit/s?