CAPTURE ENERGY

BESS PowerBox

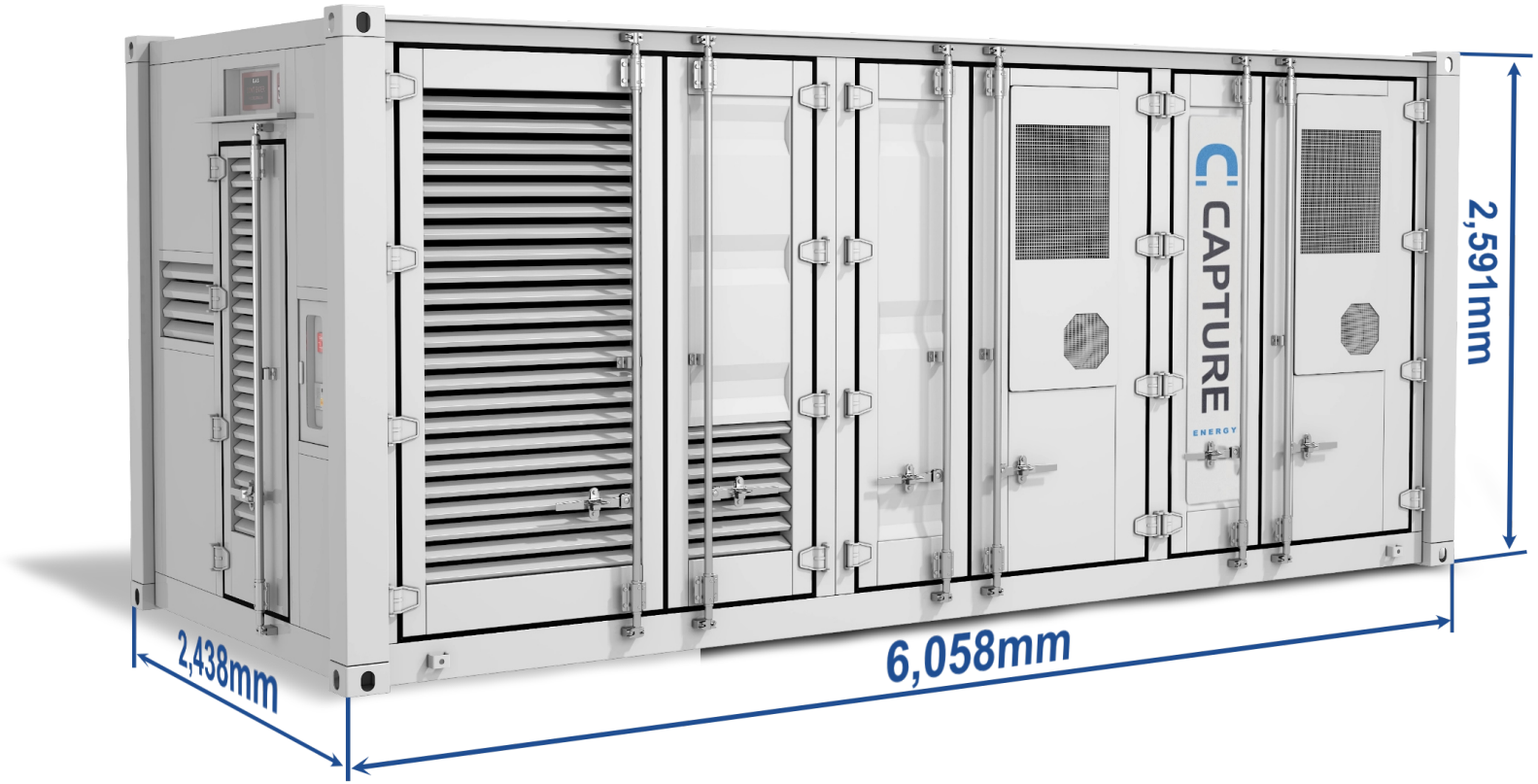
SITE CONSTRUCTION MANUAL

20ft

BESS PowerBox 20ft

Table of content

Container dimensions



Available products from Capture Energy:

- **BESS PowerBox 500kW/522kWh**
- **BESS PowerBox 1MW/1,1MWh**
- **BESS PowerBox 1,2MW/2MWh**

NOTES

All products are for delivery in Europe. The information in this document may be incomplete, out of date and may contain typographical errors. Capture Energy reserves the right to make changes in specifications and other information without prior notice, and the reader should in all cases consult Capture Energy to determine whether any such changes have been made.

Energy storage system installation requirements

The protection level of energy storage system is IP54, which is suitable for installation in the outdoor environment. To ensure that energy storage system operates safely and efficiently, be sure to observe the following when choosing an installation environment:

1.The installation location should not be in low-lying areas. The installation level should be higher than the historical highest water level in the region. If it cannot meet the requirements, reliable water retaining facilities should be set.

2.The distance from the airport, buried waste disposal site, river bank or dam shall not be less than 2km.

3.Select an open location to ensure that there are no obstacles within 10m around the station.

4.Keep at least 50m away from residential areas to avoid noise pollution.

5.There should be enough space around the container for each maintenance door of the container to open.

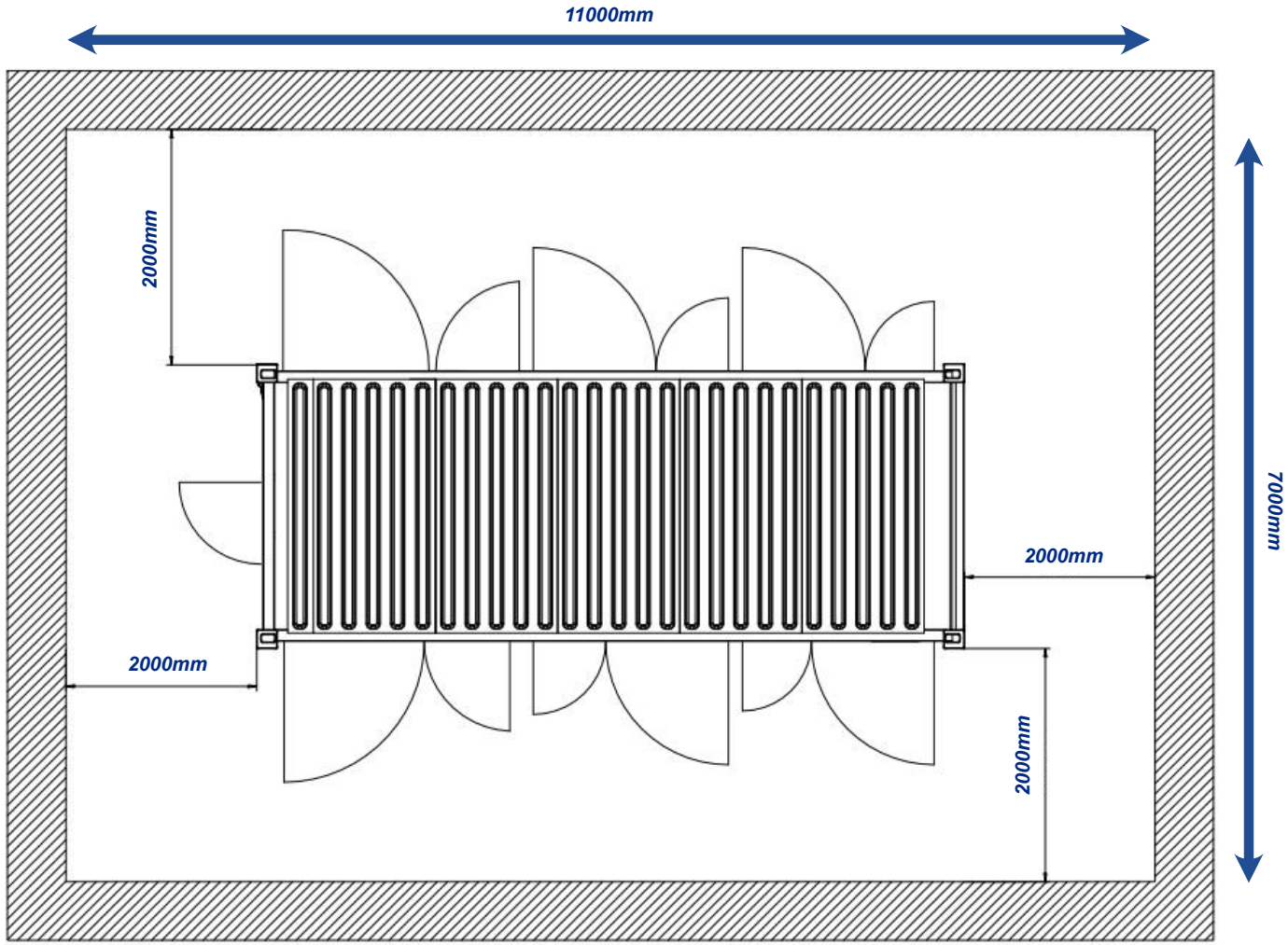
6.Sufficient distance shall be reserved between the air inlet and outlet of the electrical compartment and the front and back of the air conditioner of the battery compartment to ensure ventilation and heat dissipation, installation and maintenance, and safe escape.

7.The system is a customized product, and the allowable range of ambient temperature at the installation site is -20~50 °C, and the relative humidity is not more than 95%.

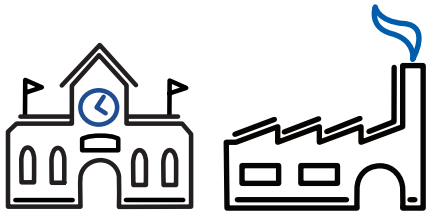
The following sections and areas should not be selected as the installation site

- Seismic faults and seismic areas with fortification intensity higher than 9 degrees.
- Places with hidden dangers such as debris flow, landslide, quicksand and karst cave.
- Within the boundary of mining subsidence (dislocation) area.
- Within the scope of blasting danger.
- Areas that may be flooded after the dam or dike breaks.
- Important water supply source health protection zone.
- Historical relics and historic sites protection area.
- Strong vibration, strong noise source and strong electromagnetic field interference area.

Install space dimensions for BESS PowerBox 20ft



Space requirements for BESS PowerBox 20ft

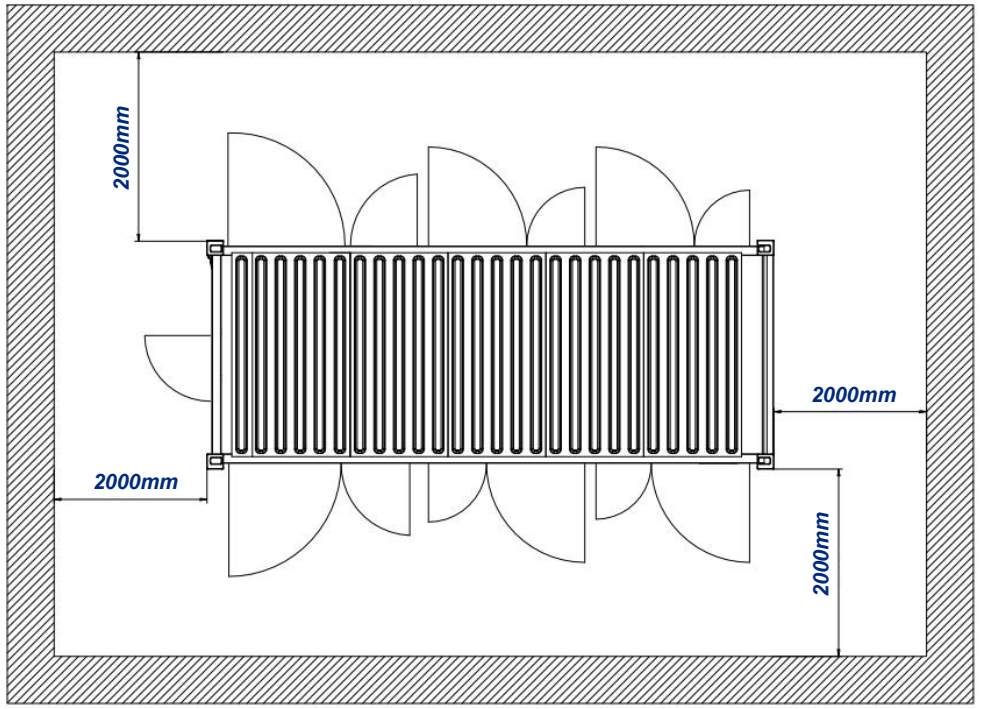


Commercial and Industry

Recommended distance: 10mtr

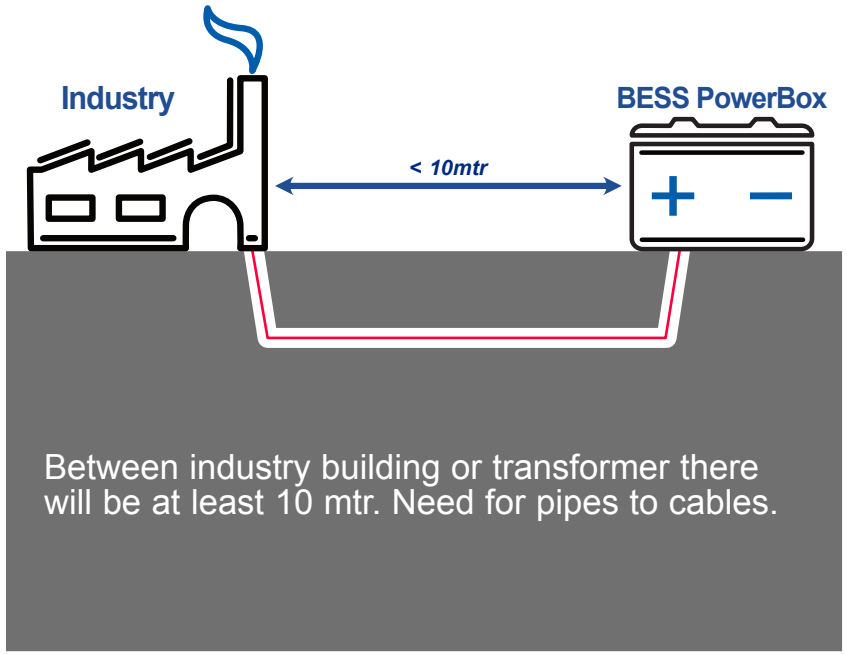
When installing the BESS PowerBox 20ft, appropriate and sufficient distances must be reserved from walls and other equipment to meet the requirements of the maintenance passageway, escape route and ventilation.

The figure describes the space requirements for the normal operation of energy storage containers. If the site conditions permit, it is recommended to choose a larger spacing to ensure the reliable and efficient operation of the energy storage system.



Container from above

System wiring for BESS PowerBox 20ft



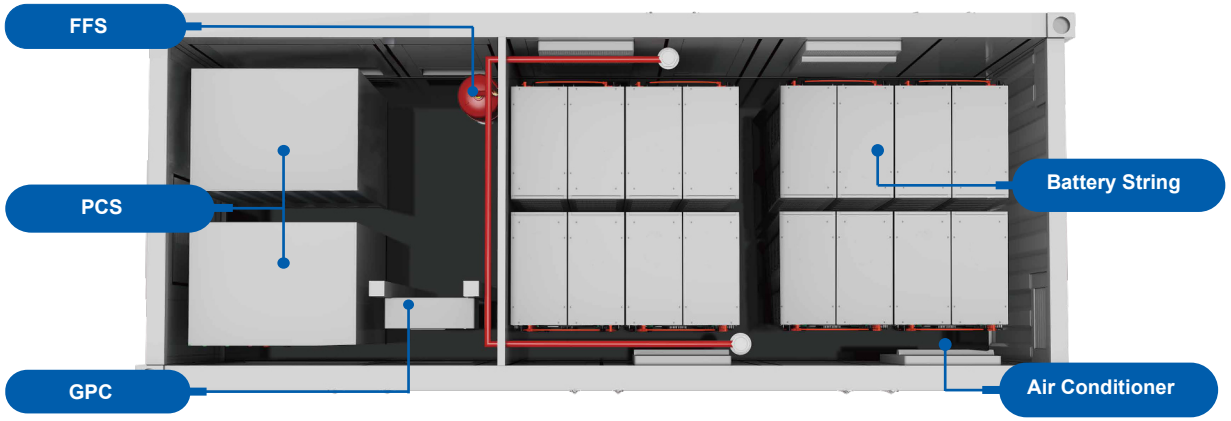
Transformer terminal description

Position	Designation	Wiring description
1	a (Grid)	Connection to the Grid output: Phase A, Phase B, Phase C, Phase N, Wiring aperture 13mm Conductor cross-section: See table below
2	b (Grid)	
3	c (Grid)	
4	n (Grid)	
5	A (PCS)	Connection to the PCS output: Phase A, Phase B, Phase C, Wiring aperture 14mm (No wiring required, Internal connection, Conductor cross-section: Each phase 4*107mm²)
6	B (PCS)	
7	C (PCS)	

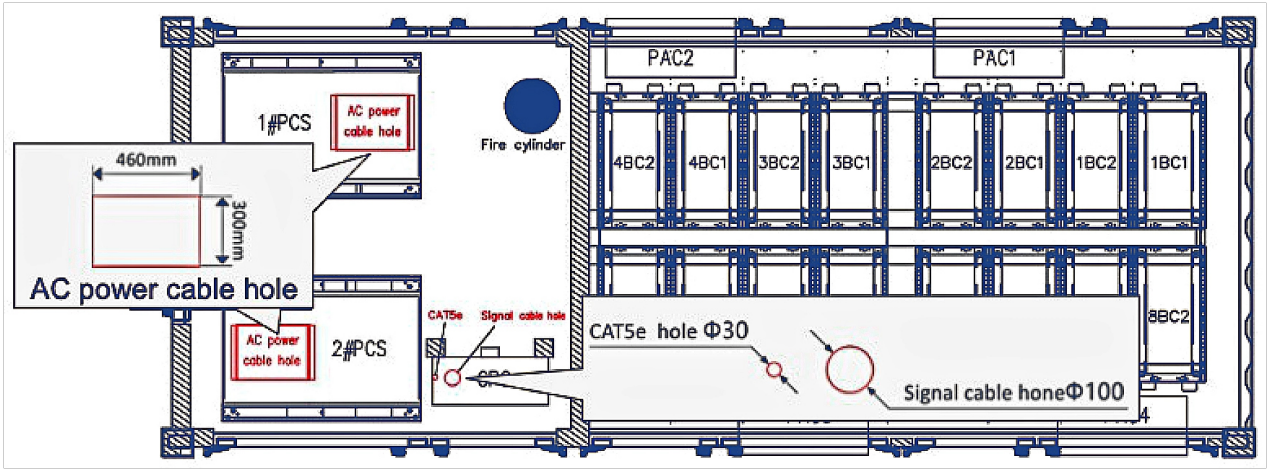
Cable specification recommendation

Model	AC Rated Voltage	Maximum AC current	Recommended Conductor cross-section	Tightening torque(N.m)	Set screw
500kW/522kWh	400V	721.7A	Each phase ≥ 4 * 120mm² copper core cables	78~104N.m	M12

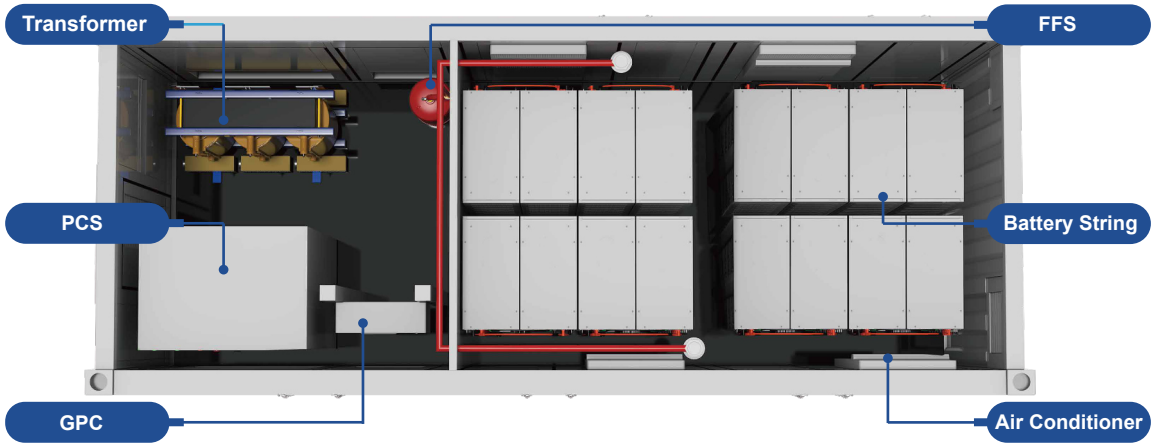
BESS PowerBox 1MW/1,1MWh (400v)
Weight: 19t

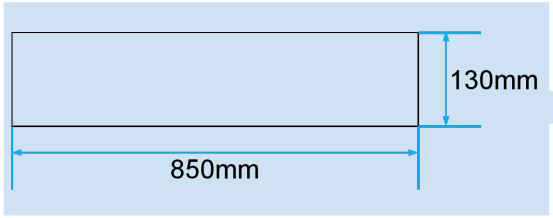


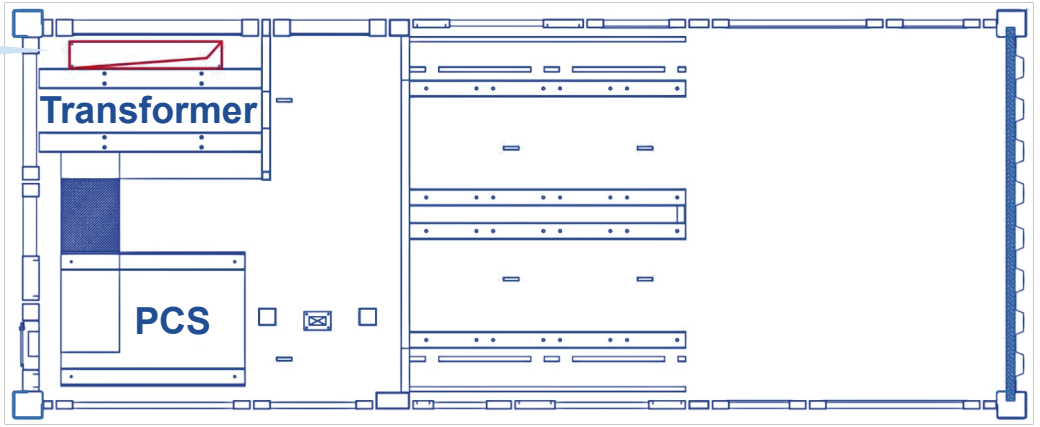
The container has four wire holes, two of which are AC Power cable holes (square holes). The other two are CAT5e holes (small round holes) and power cable holes (large round holes) for external signals and auxiliary equipment of the system.



BESS PowerBox 500kW/522kWh (400v)
Weight: 16t







The AC inlet hole of the system container is located under the PCS cabinet (hole size: 850×130mm), and the AC cable on the power grid side can enter the container from the inlet hole, as shown in the figure.

Grounding point for BESS PowerBox 20ft

Container
grounding point

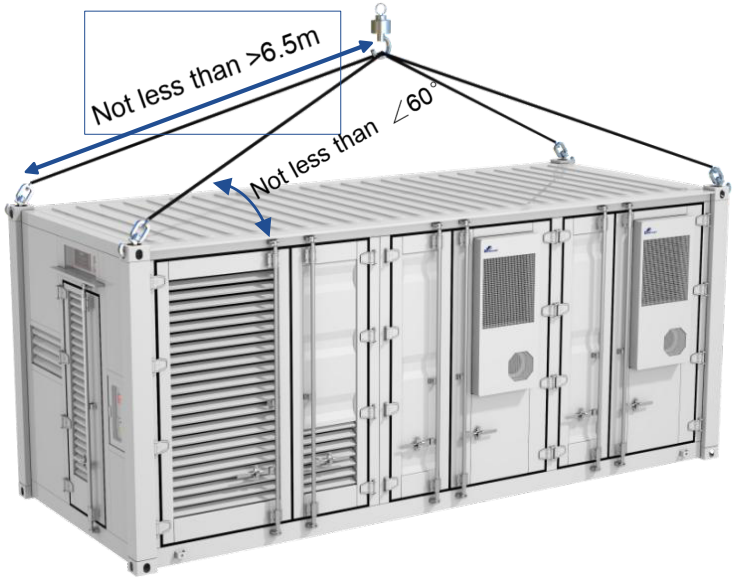
The grounding flat steel is made of galvanized flat iron (size (W x H): 50×4mm)
When using the following two grounding methods, ensure that the grounding resistance is not greater than 1Ω.

Scheme I:
Use grounding wire for grounding.

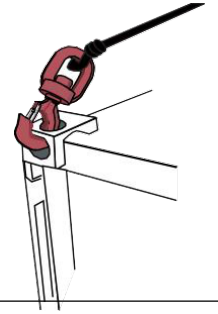
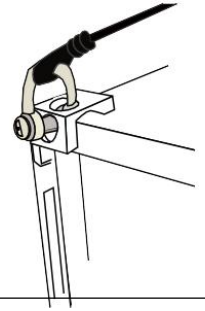
Scheme II:
Use galvanized flat iron for grounding.

For the installation of system grounding electrode, please refer to the requirements of local national or local electrical standards.

Lifting of BESS PowerBox 20ft



Use slings with hooks or U-hooks to hoist the container. The lifting devices should be connected correctly to the container.

Lifting device	Hook	U- Hook
Connect		
Note	Insert hooks from the inside out.	Tighten the side pins of the U-hook.

The top four corners of the container provide the hoisting location, After the container is transported to the site, people qualified for hoisting should be asked to unload, hoist and place the container in the designated location.

Follow the following rules throughout the lifting process

1. Lift the container vertically according to the lifting requirements. Do not tow containers on any ground.
2. When the container is lifted from the ground for about 0.3m, stop to check that all connections are still secure. After confirming that there are no safety issues, continue to hoist the container.
3. When transported to the site, the container should be slowly and steadily lowered.
4. The installation site should be secure, horizontal, and well-drained, and the container should be supported by a horizontal foundation on the ground.
5. The container should be hoisted by four top-angle connectors with non-vertical forces.
6. If the external paint of the container is peeled off during transportation, hoisting and daily operation, please use the paint with the same color number for supplementary spraying and maintenance in time, otherwise the aging of the container will be accelerated and the lifespan of the system will be affected.

Foundation requirements

Before installation of the Energy storage products, the conditions of the installation site (mainly geographical and environmental conditions) should be thoroughly checked. Ensure that the surrounding environment of the container foundation should be dry, well ventilated, away from combustibles, and have the following foundation requirements:

1.The foundation of Energy storage products should be higher than the ground surface to avoid rain damage to the foundation or the inside of the energy storage system.

2. It should be installed on a cement foundation structure with a surface of flame retardant material. The foundation must be flat, secure, and reliable, with sufficient carrying capacity to prevent depressions or tilts on the foundation surface.

3. When constructing the foundation, the cable ditch shall be preset according to the overall design of the power station and cable routing at the bottom of the Energy storage product.

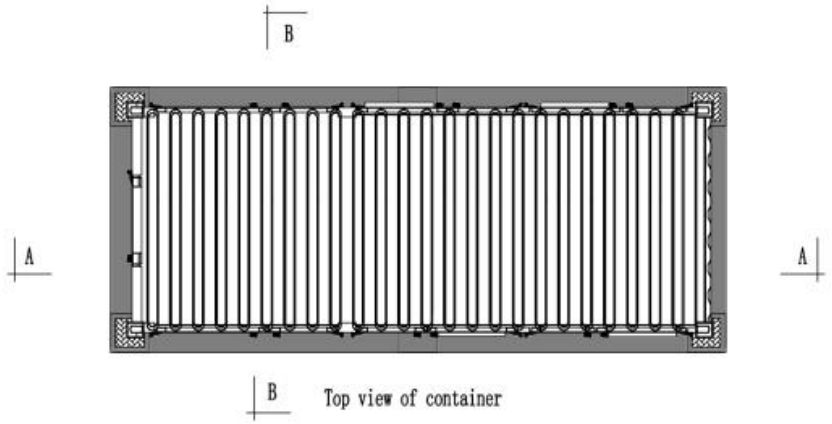
4. The inner diameter of the protective pipe laid shall not be less than 1.5 times of the outer diameter of the cable (including the protective layer).

5. The foundation construction shall meet the drainage requirements of the local historical maximum rainfall. The discharged water needs to be treated in accordance with local laws and regulations

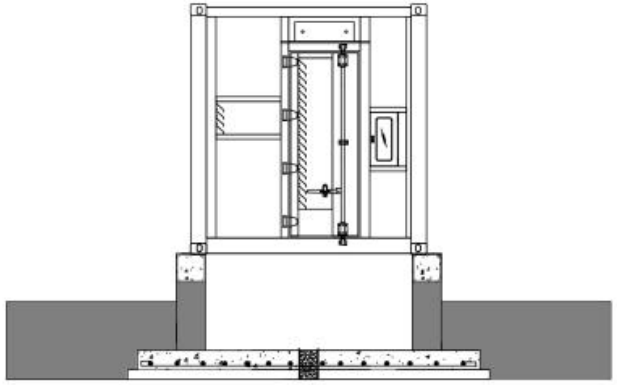
6. The grounding grid shall be embedded in the foundation, and the grounding grid shall be buried, and the grounding copper bar shall be reserved at the grounding position of the box. The cross-sectional area of the grounding copper bar is 50mm×4mm hot-dip galvanized flat steel, one end is connected with the embedded grounding grid, and the other end is connected with the container grounding point. When embedding the grounding grid, the grounding strip shall be reserved with sufficient length to ensure the connection with the grounding point of the box.

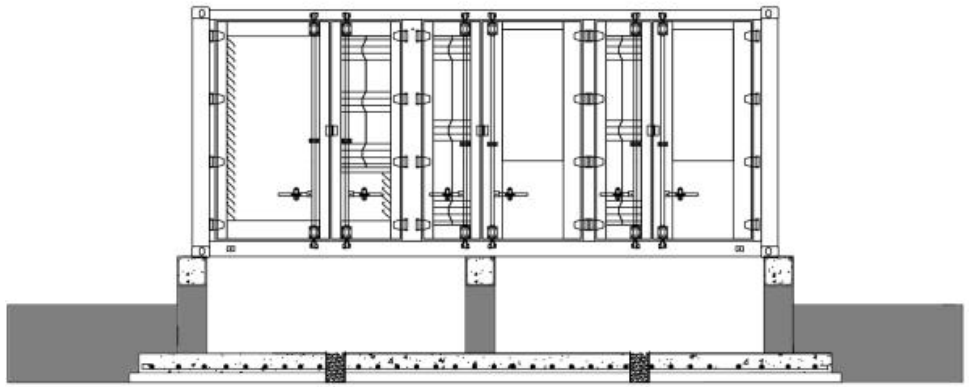
Construction can be done with concrete or steel feet from Capture Energy. See next pages for illustrations.

Mounting BESS PowerBox on concrete



Top view of container


Section B-B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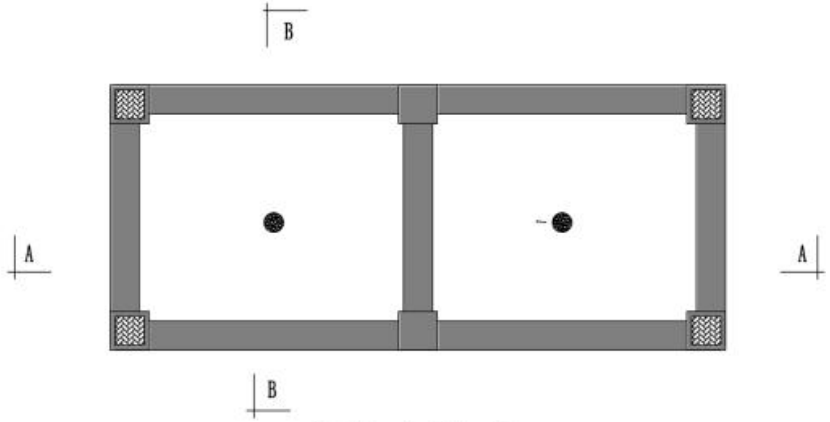
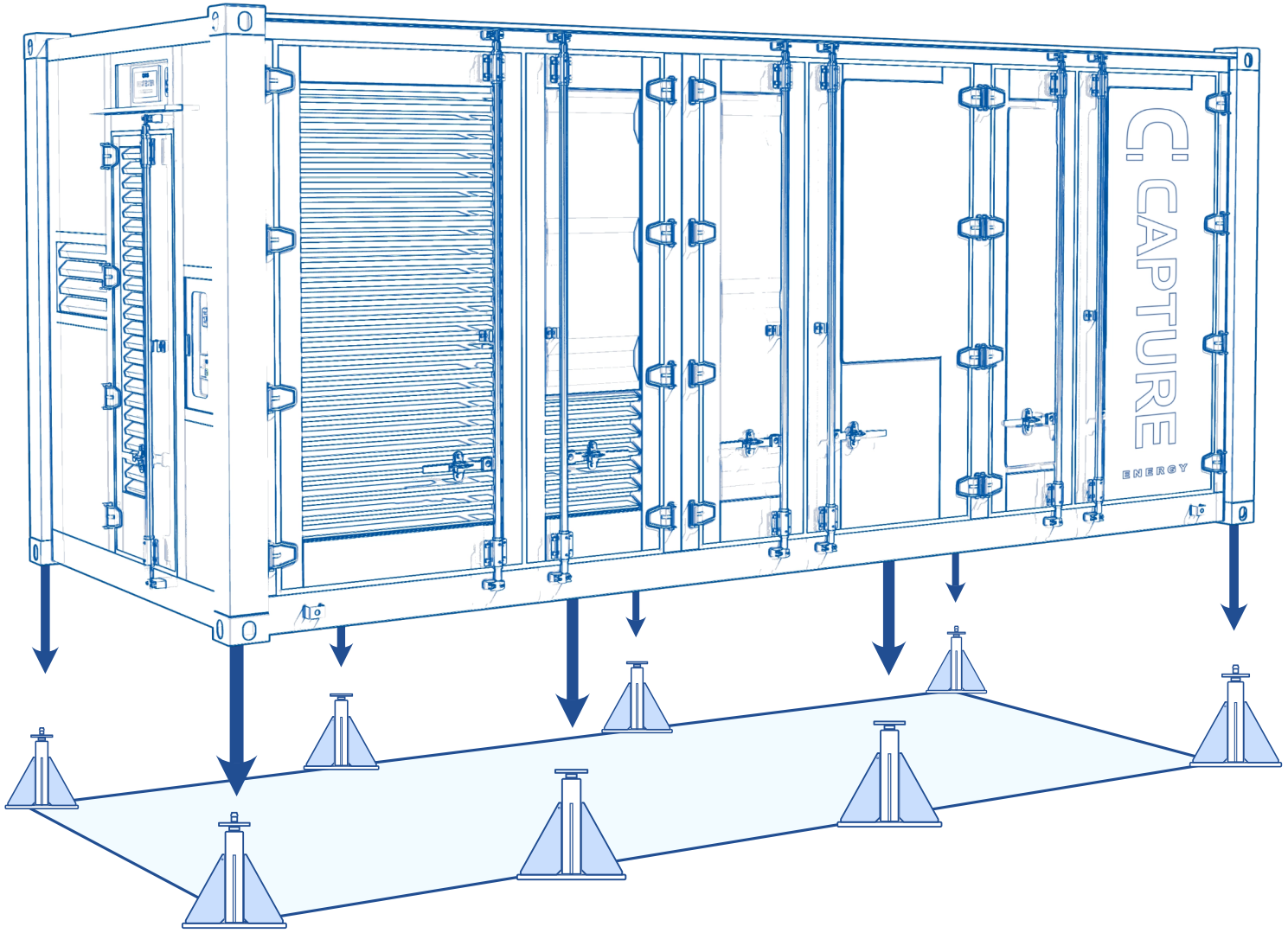
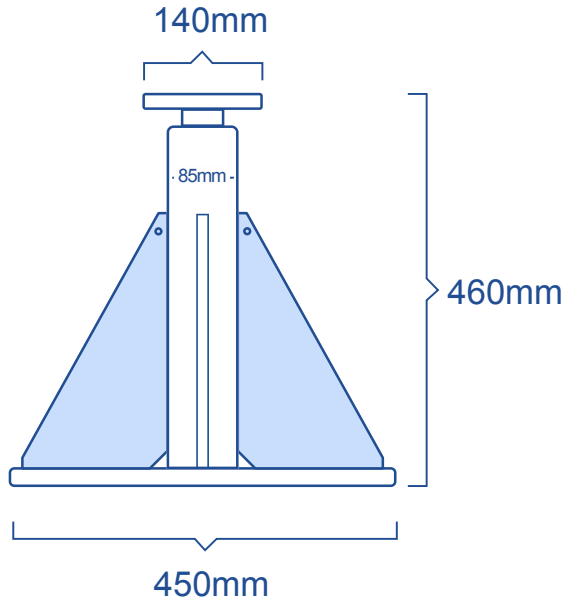


Container foundation plan

Mounting BESS PowerBox on adjustable feet



Feet dimensions



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