



ESTD 1974

FIRE FIGHTER

5 Oct 2023

ENGLISH TRANSLATION OF GARIS
PANDUAN KESELAMATAN KEBAKARAN
BAGI ELECTRIC VEHICLE CHARGING BAY
(EVCB) DI PREMIS

BY FIRE FIGHTER INDUSTRY

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Introduction

The Malaysian government's fire authority, BOMBA, has released comprehensive guidelines for the installation and maintenance of EVCBs titled *GARIS PANDUAN KESELAMATAN KEBAKARAN BAGI ELECTRIC VEHICLE CHARGING BAY (EVCB) DI PREMIS*.

Fire Fighter Industry is committed to providing valuable information and guidance to electric vehicle charging station (EVCB) operators. This document is our attempt to share the salient points from the BOMBA document and help educate EVCB operators on the key aspects of these guidelines and the necessary actions to ensure the safety of their existing charging stations.

Understanding the Scope

It's important to note that BOMBA's guidelines primarily focus on fire safety control for EVCB installations in premises and commercial areas.

Residential installations fall outside the scope of these guidelines.

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Glossary

1. "Electric Vehicle Charge Point (EVCP)" means a device used to charge EV batteries.
2. "Electric Vehicle Charging Bay (EVCB)" means a parking space equipped with a charging system using charging devices designed to supply electric power to electric vehicles.
3. "Electric Vehicle (EV)" means a vehicle powered by an electric motor that draws current from a rechargeable energy storage system.
4. "Small Residence" means a single, semi-detached, or terraced private dwelling. (refer to Schedule Five, UBBL 1984 amendment 2021).

Enforcement on Existing EVCB Installations

The Fire and Rescue Department (JBPM) will enforce compliance with these guidelines by issuing Fire Hazard Elimination Notices (MBK) for premises with non-compliant EVCB installations. Premises that had EVCBs installed before the effective date of these guidelines (**September 25**) must ensure full compliance within two years from that date. During this transition period, premise owners and EVCB installers bear full responsibility for safety and compliance.

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Proposal for EVCB Installation Plan Submission

For those planning EVCB installations, the Principal Submitting Person (PSP) and Submitting Person (SP) must submit architectural and M&E plans for review and approval by relevant authorities.

EVCB Installation Inspection

To ensure compliance with safety standards, EVCB operators must apply for inspections. When doing so, they should submit Distribution License documents issued by the Energy Commission (EC).

Certifications and Support

BOMBA will provide support for the following certifications:

GB: certification of fire safety installation requirements (architectural)

G9: certification of fire alarm and fire extinguishing system (mechanical and electrical).

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Fire Safety Installation Requirements (FSIR)

EVCB Location

EVCBs must be installed away from stairs, safety exits, or building exit pathways that may be obstructed during a fire or emergency.

Charging bays should be arranged at right angles (90°), parallel (180°), or at various angles (30°/45°/60°) as specified by PlanMalaysia.

Access to firefighting equipment as per UBBL 1984 requirements should be provided:

Fire Extinguishers and Vehicle Fire Blankets

Dry powder type fire extinguishers (APA) should be provided as per [MS 1539](#).

[Vehicle Fire Blankets](#) (VFB) should be provided based on the number of EVCBs installed:

Number of bays	Number of vehicle fire blankets required
1	1
2-10	2
11-15	3

More than 15: for every additional 1 EVCB up to the next 5 EVCBs, 1 VFB is required.

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Fire Safety Signage

Install fire safety signage as specified by JBPM.

Smoke Control

Provide a natural or mechanical smoke control system.

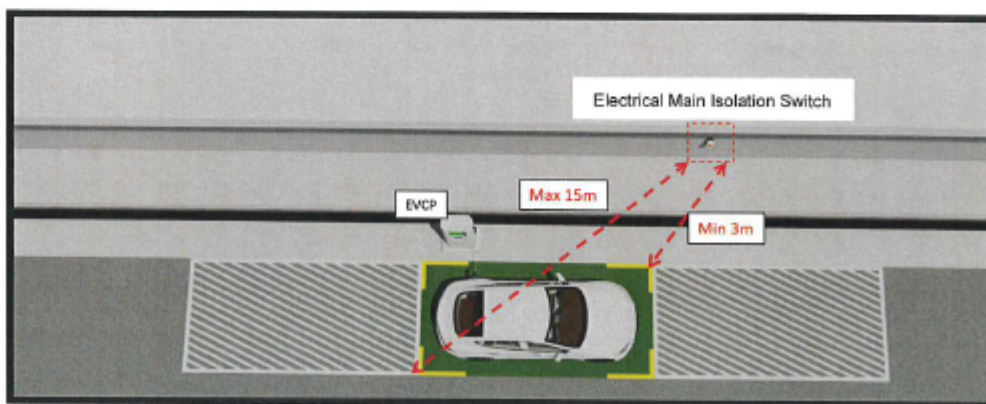
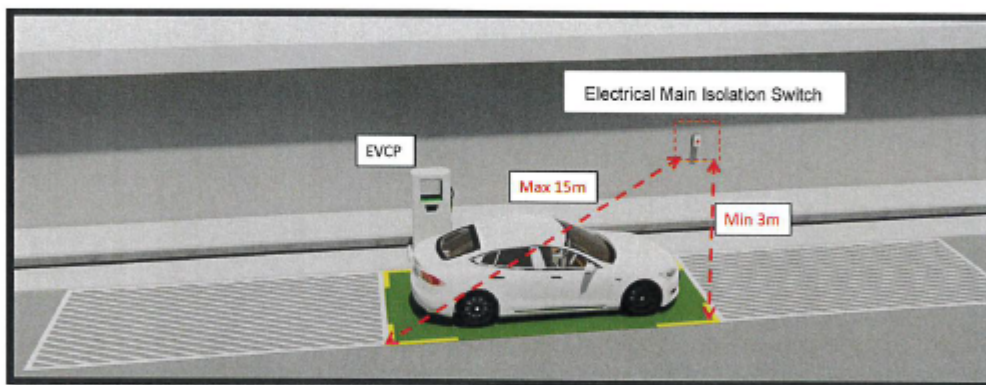
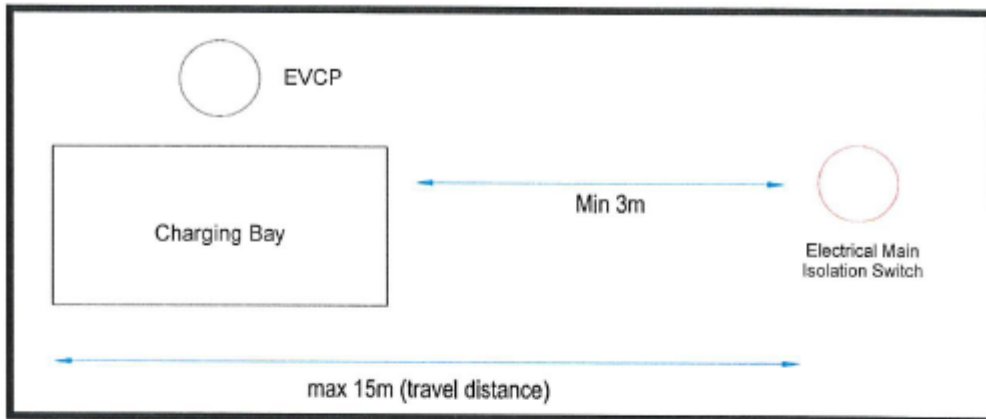
Install the main electrical isolation switch

1.8.1. Each EVCB must have an automatic and manual main electrical isolation switch. The position of the main electrical isolation switch must be at least 3 meters away from the charging bay and EVCP but not more than 15 meters away (see Figure 1).

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Gambar Rajah 1 :Penempatan *Electrical Main Isolation Switch*

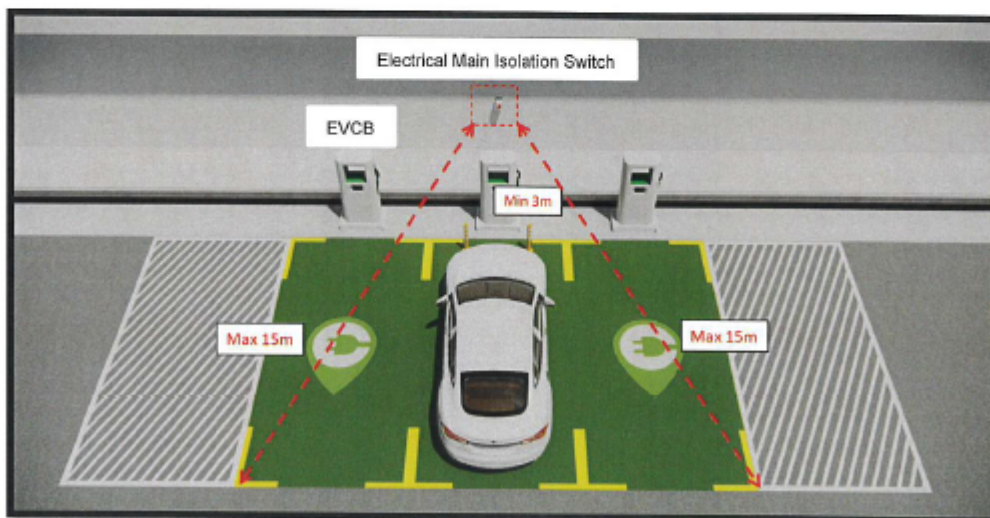
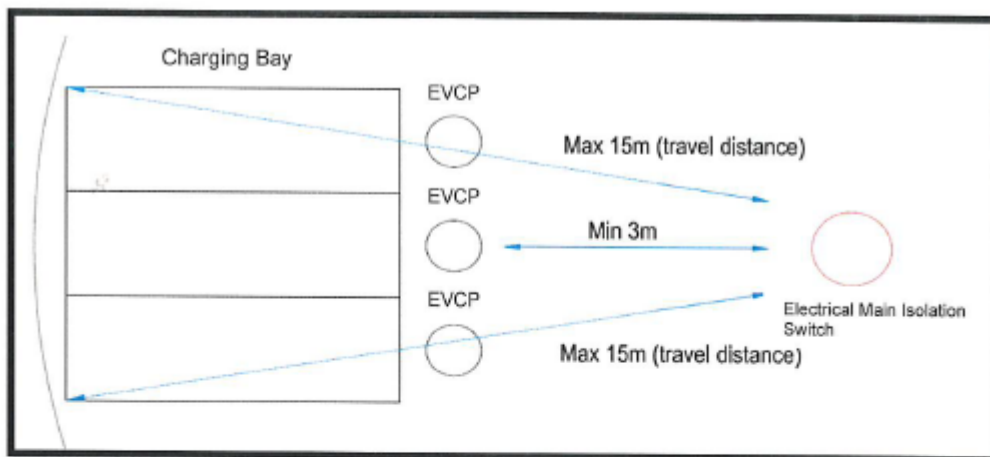
Figure 1: Placement of Electrical Main Isolation Switch

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1.8.2. The main electrical isolation switch of the EVCB can be shared by several EVCPs, complying with the specified distance. Activation of any main electrical isolation switch will disconnect the electrical power supply to all EVCPs (Figure 2).



Gambar Rajah 2: Perkongsian Penggunaan *Electrical Main Isolation Switch*

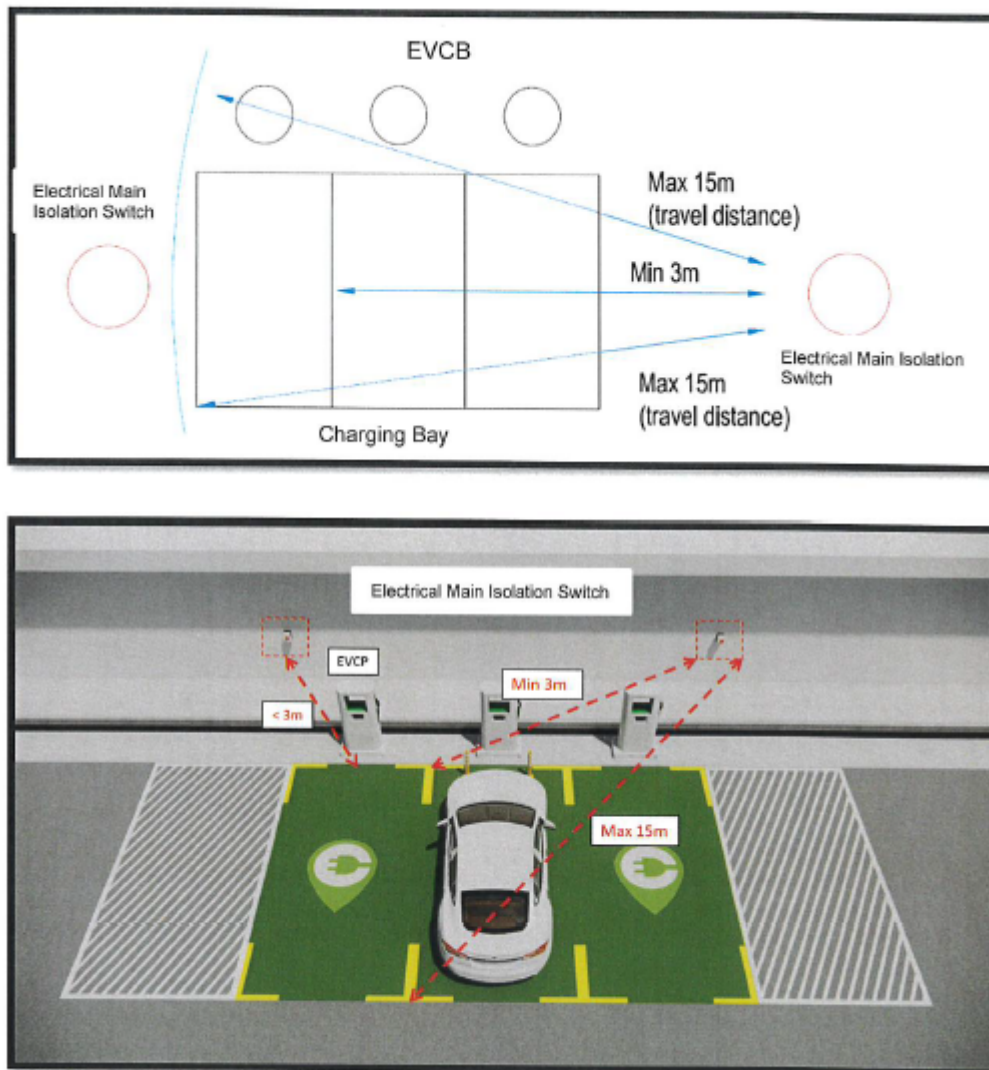
Figure 2: Sharing of Electrical Main Isolation Switch

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1.8.3. If the main isolation switch position is less than 3 meters from the EVCP, another main isolation switch must be placed at least 3 meters away from the EVCP but not more than 15 meters (Figure 3).



Gambar Rajah 3: Keperluan tambahan *Electrical Main Isolation Switch*

Figure 3: Additional Electrical Main Isolation Switch Requirement

1.8.4. Connect the main electrical isolation switch (Main Isolation Switch) of the EVCB with a fireman switch.

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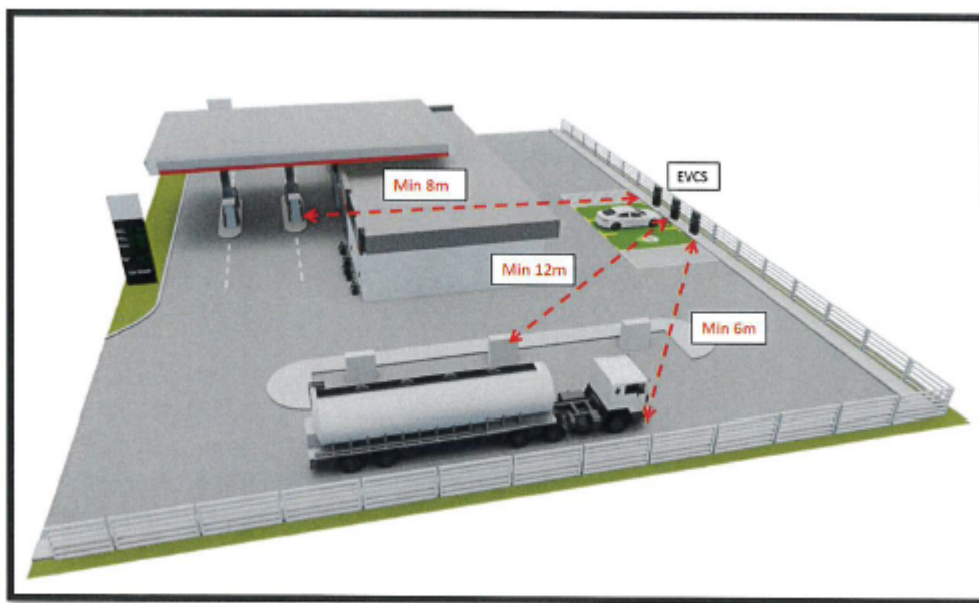
1.8.5. The main isolation switch position must be between 800mm and 1200mm above the floor level and must be clearly visible and easily accessible.

1.8.6. All main isolation switches must be labeled and have clear instructions related to the procedure/method of operating the main isolation switch.

1.8.7. If the main isolation switch is not clearly visible or not within sight of the EVCP and parking area, additional signage must be provided to direct to the location of the main isolation switch.

FSIR requirements according to the EVCB placement.

22.1. EVCB outside the building



Gambar Rajah 4: Contoh Penempatan EVCB di Stesen Minyak

Figure 4: Example EVCB placement at gas station

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a) FSIR requirements for EVCB at petrol stations (Figure 4).

- i. The distance of the pump selection panel should not exceed 90 meters from the EVCB.
- ii. The placement of EVCB with refilling points and vent pipes should be at least 12 meters away.
- iii. The placement of EVCB with a designated oil tanker parking area should be at least 6 meters away.
- iv. The placement of EVCB from a fuel dispensing unit should be at least 8 meters away.
- v. There should be no electrical connections or installations within the EV charging area that can be installed within 500mm height from the floor level.
- vi. The EV charging station must be fully enclosed unless openings are at least 1m above floor level.

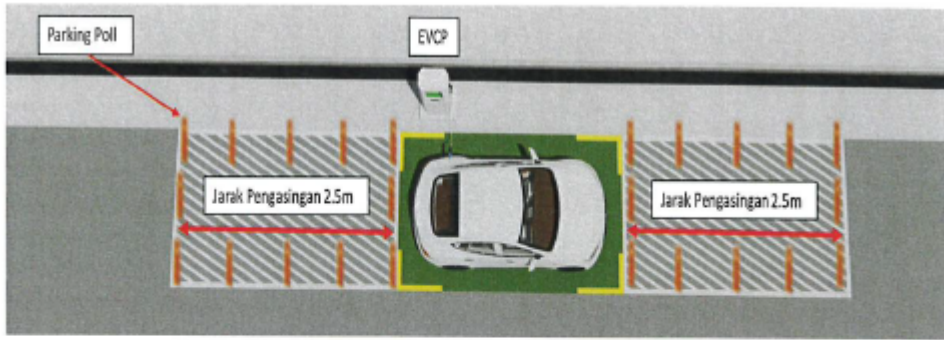
Figure 4: Example of EVCB Placement at Petrol Station

- vii. Provide a 2.5m clearance on the left and right sides of the charging bay (Figures 5 and 6).
- viii. The separated area should be marked with yellow hatching and equipped with parking barriers to prevent any activities in that area.)

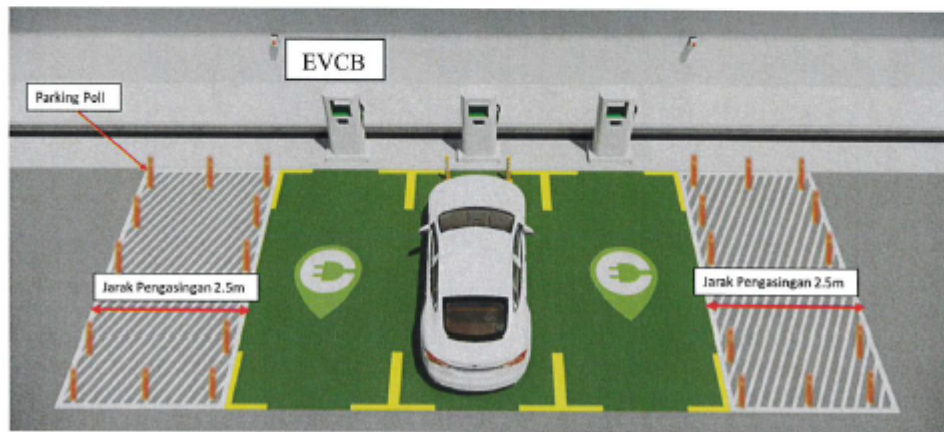
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Gambar rajah 5 : Susunan selari (180⁰)



Gambar rajah 6 – Susunan menegak (90⁰)

Figure 5: Parallel Arrangement (180°)

Figure 6: Vertical Arrangement (90°)

b) FSIR requirements for EVCB in rest and recreation areas (RnR), open areas outside the building, or open parking lots.

i. The distance of the pump selection panel should not exceed 90 meters from the EVCB.

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ii. Provide a 2.5m clearance on the left and right sides of the charging bay (Figures 5 and 6 above).

iii. The separated area should be marked with yellow hatching and equipped with parking barriers to prevent any activities in that area.

c) FSIR requirements for EVCB on unenclosed/open roof top levels

EVCB should not be more than 30 meters from the pump selection panel or landing valve wet riser or dry riser.

ii. Other requirements should be similar to the FSIR requirements for EVCB in rest and recreation areas (RnR), open areas outside the building, or open parking lots.

22.2. FSIR Requirements for EVCB Inside the Building

a) Ground floor and above (e.g., podium, multistorey carpark)

The placement of DC-type EVCB should not exceed 30 meters from the landing valve wet/dry riser or pump selection panel. There is no distance limit for AC-type EVCB.

ii. The placement of DC-type EVCB should not exceed the second floor above the designated floor, which includes the ground floor, floor 1, and floor 2.

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- iii. The placement of AC-type EVCB is allowed on other floors.
- iv. Provide a minimum 1.5m high fire separating wall (wet construction) with a minimum fire resistance of 2 hours for DC-type EVCB exceeding 216m² floor area (Figure 7).
- v. Maintain a separation distance of a minimum of 5 meters on the left and right sides of the charging bay for EVCBs of direct current (DC) type, not exceeding 216 square meters of floor area, or install a fire separating wall with a minimum height of 1.5 meters (wet construction) with a fire resistance rating of at least 2 hours.
- vi. Implement at least a heat detection or multi-sensor detecting type fire detection system in the EVCB area inside the building where an automatic sprinkler system is not installed.
- vii. The fire detection system must be directly connected to the Fire Alarm Panel, the Building's Fire Protection System, and any Oika roller shutter (if present).
- viii. Establish a natural or mechanical smoke management system.

b) Basement Level

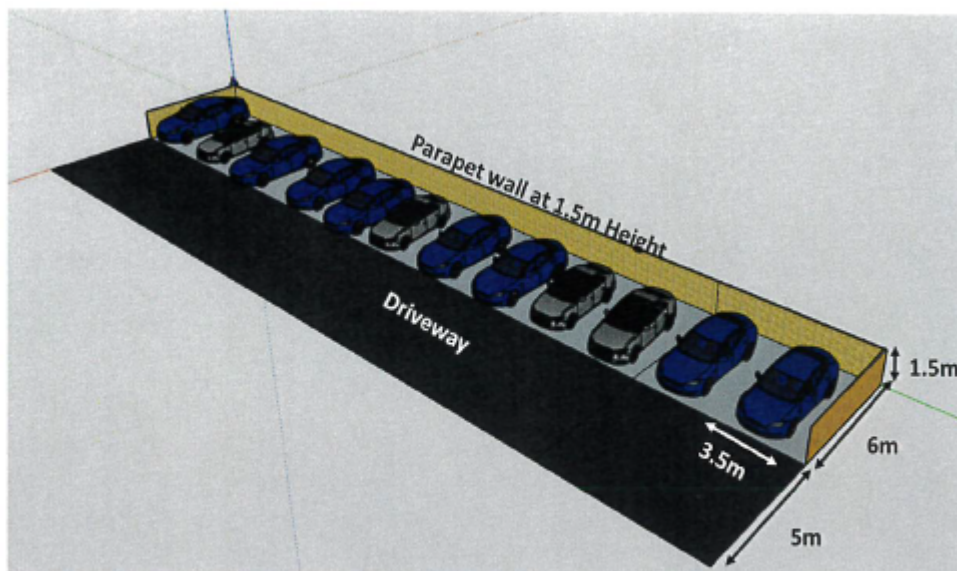
- i. The positioning of DC type EVCBs should not be more than 30 meters away from the wet landing valve, dry riser, or fire hydrant. There is no distance limit for alternating current (AC) type EVCBs.
- ii. The positioning of DC type EVCBs must not exceed the first floor level, i.e., basement 1.
- iii. AC type EVCBs can operate on other levels.

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- iv. Install a fire separating wall with a minimum height of 1.5 meters (wet construction) with a fire resistance rating of at least 2 hours for DC type EVCBs exceeding 216 square meters of floor area (see Figure 7).
- v. Maintain a separation distance of a minimum of 5 meters on the left and right sides of the charging bay for DC type EVCBs not exceeding 216 square meters of floor area or install a fire separating wall with a minimum height of 1.5 meters (wet construction) with a fire resistance rating of at least 2 hours.
- vi. Install a continuous fire safety system such as an automatic water sprinkler system, water mist system, deluge system, or water monitor.
- vii. Implement a natural or mechanical smoke management system with a 15-meter distance (see Figure 1).



Gambar rajah 7 – Contoh pemetakan bagi perkara 22.2 (a) (iv) dan 22.2 (b) (iv)

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Conclusion

By adhering to BOMBA's guidelines and these recommendations, EVCB operators can prioritize safety, protect their investments, and contribute to the responsible growth of electric vehicle infrastructure in Malaysia. Fire Fighter Industry remains dedicated to supporting your efforts in achieving these goals and ensuring the safety of your charging stations.

For further guidance or assistance, please feel free to contact us at

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