

Annex B
(normative)

**Checklist for new charger / parts replacement /
modification to EVCS**

Purpose of use: Checklist for New charger / Parts replacement / Modification to EVCS

Particulars of EVCS

(one report is to be used for each charger)

Brand/model of EV charger(s): _____



S/No.: _____

Name of owner/operator: _____
(Responsible for the EVCS)

Address of installation: _____
(Indicate carpark lot number and floor level where applicable)

To be performed by equipment specialist

	Description	Compliance			Remarks/ measurement value ¹
		C	NC	NA	
A	Authority requirement				
A1	Letter of no objection (LNO) is obtained from relevant authority / TR25 certificate of compliance is obtained				
A2	For building with EMA EI License, letter of consent is obtained from building LEW				
B	External and environmental checks (with EVCS power TURN-OFF at isolator)				
B1	Installed outside hazardous zones where flammable/combustible gas or material may be present				
B2	Enclosure is not dented, damaged, corroded or in any rusty condition				
B3	Space around the EVCS is adequate for easy access and maintenance work				
B4	Sealing rubber of all doors are in order, and doors including lockset (if any) can be opened and closed easily				
B5	No sign of insects inside EVCS. Openings or vents are not blocked, no excess foreign particles				
B6	Detachable parts are not loose or falling off and not in a rusty condition				
B7	No visible moisture, waterlogging or burnt marks at the EVCS and connector charging pins				
B8	Floor or wall mounting of EVCS remains rigid and strong				

	Description	Compliance			Remarks/ measurement value ¹
		C	NC	NA	
B9	Vehicle connector cable, mounting and support is secured and not damaged				
B10	Electrical warning labels is clear and prominent				
B11	Source of DB for EVCS is clearly labelled and electrical source DB is accessible for operation				
B12	Bollards or continuous kerb(s) or other means of crash protection is installed provide adequate protection against moving vehicle				
B13	Charger specification plate is clear, legible and prominent according TR25 requirement				
B14	Owner/operator contact details label is legible and prominent				
B15	Fail-safe emergency stop button (in red and yellow) is prominent and not damaged. For outdoor installation it shall be weatherproof. Clear directional signs shall be provided for multiple charger installation.				
B16	Adequate lighting for charging operation				
B17	Inspection label provided as below. 				Last inspection date:
B18	EVCS's display and all UI accessories (eg, press button, RFID reader etc.) are not damaged and working properly				
B19	Incoming power supply cable including circuit protective conductor connections and termination(s) are properly made and tightened				
B20	Measurement of PP-PE resistance value and compare with IEC given value				PP-PE : (Ohm)
B21	Manufacturer handbook and instruction manuals given to owner/operator				
C	Functionality checks and tests (with EVCS power TURN-ON at isolator)				
C1	Inspect RCCB(s) protecting connecting points shall be at least type A 30mA of symbol  and perform manual trip test to all RCCB(s) for Mode 2/2A ¹ /2B ¹ /3 chargers For mode 4 chargers, earth leakage protection device trip setting should comply with requirements in 411.5.3L of SS 638:2018 ¹ Modes 2A and 2B chargers with galvanic isolation shall be at least type AC				
C2	Perform the sequence of normal start and stop on every charging point				
C3	While charging, check EV ventilation fan (if any) is working				

	Description	Compliance			Remarks/ measurement value ¹
		C	NC	NA	
C4	While charging, test all the fail-safe emergency stop button(s) to ensure it is functioning. (EVSE shall reset to state A upon releasing)				
C5	Perform CP short fault simulation for <u>every</u> charging point. (EVSE shall reset to state A when fault is cleared)				
C6	(For AC charger) – connector 1 Perform functionality test for mode 2/2A/2B/3 charging point EVCS is able to complete energisation and de-energisation sequence				
C7	(For AC charger) – connector 2 (if any) Perform functionality test for mode 2/2A/2B/3 charging point EVCS is able to complete energisation and de-energisation sequence				
C8	(For DC charger) – connector 1 Perform functionality test for mode 4 charging point (IEC 61851-23) EVCS is able to complete energisation and de-energisation sequence				
C9	(For DC charger) – connector 2 (if any) Perform functionality test for mode 4 charging point (IEC 61851-23) EVCS is able to complete energisation and de-energisation sequence				
D	Additional item not listed but required in the manufacturer's instructions (Please list accordingly or indicate as NA where appropriate)				
D1					
D2					
D3					

To be performed by skilled person (LEW)

	Description	Compliance			Remarks/ measurement value ¹
		C	NC	NA	
E	Electrical checks and tests				
E1	Perform earth loop impedance test and record value complies with SS 638 (For TT and TNS system)				Ohm
E2	Record the incoming power supply and charging cable insulation resistance value is more than 1 M-Ohm				M-ohm

	Description	Compliance			Remarks/ measurement value ¹
		C	NC	NA	
E3	Tripping time of 30 mA RCCB type A (min) as measured by an RCCB tester using AC and DC injection curve is acceptable according to SS 97 tripping time for mode 2 and mode 3 chargers For mode 4 charger, the trip setting should comply with 411.5.3L of SS 638:2018				0 deg: _____ ms 180 deg: _____ ms
E4	EVCS installation tally with single line diagram (SLD) provided by owner/operator. Means of isolation, lockable at OFF position (2P for 1ph and 3P/4P for 3ph), is provided for maintenance switching				
E5	Rating of incoming cable from source DB and charging cable are adequate for max rated charging current.				

- 1) Measured values where required shall be recorded in this report.
- 2) EV charging station installed in petrol kiosks shall comply with SCDF's requirements.

General remarks:

Recommended date of next inspection: _____

(Extract from TR 25-1:2022) Non-restricted access EVCS – every 6 months (required)

Restricted access EVCS – every 24 months (recommended)

Endorsed by LEW

The results obtained in E (Electrical checks and tests) is acceptable to the best of my knowledge

Name of LEW : _____ Licence No: _____

Signature: _____ Date: _____

Endorsed by equipment specialist

I have inspected and tested the EVCS. To the best of my knowledge, I declare that the EVCS is
*fit and safe / unfit and unsafe for operation

*Please delete as appropriate

Name of equipment specialist: _____

Company: _____ Designation: _____

Signature: _____ Date: _____

The inspection was witnessed by owner/operator of EVCS

Name of owner/operator representative: _____

Company: _____ Designation: _____

Signature: _____ Date: _____

(Extract from TR 25-1:2022)

NOTE 1 – It is the responsibility of the operator/owner of the EVCSs to perform the necessary maintenance routines as recommended by the equipment specialist or manufacturer to ensure the safe use of the EVCS and any potential hazard due to lack of maintenance.

NOTE 2 – Fault reporting procedure

If any EV charging station or charging point is found to be unsafe or unsuitable for operation, the following steps shall be taken:

- a) The supply to the equipment shall be switched off;
- b) The means of isolation shall be off and locked to prevent re-connection of supply;
- c) A clear label notifying users that the equipment is out of service shall be displayed prominently; and
- d) The operator/owner shall be informed immediately.