

Checklists for Various Requirements

Checklists to be Used

Checklists for Inspection and Testing of New L.V. Installations

Checklist 1, 2, 3 and 4

Checklists for Periodic Inspection and Testing of L.V. Installations:

Connected to supply before 1.1.1985

Checklist 1

Connected to supply on or after 1.1.1985 and before 1.6.1992

Checklist 1 and 2

Connected to supply on or after 1.6.1992

Checklist 1,2, and 3

[Click here to see Checklist 1](#)

[Click here to see Checklist 2](#)

[Click here to see Checklist 3](#)

[Click here to see Checklist 4](#)

Checklist No. 1—Items For New L.V. Installation or Items For Periodic Testing of L.V. Installations connected before 1.1.85

Installation Address: _____

Tested by/Date
(N/A if not applicable)

(a) Switchboards, circuit breakers and main switches

- (i) No visible damage to impair safety. _____
- (ii) Safe access provided. _____
- (iii) Every circuit breaker, main switch and fuse holder(s) provided with up-to-date, legible and durable rating labels giving their ratings. _____
- (iv) Every circuit breaker and main switch provided with a legible and durable identification label. _____
- (v) An up-to-date schematic diagram displayed to show the main distribution system. _____
- (vi) Link of adequate size installed in neutral circuit. _____
- (vii) All accessible live parts screened with insulating plate or earthed metal. _____
- (viii) The overload and fault current protection characteristics of all circuit breakers verified with secondary injection test instruments where appropriate. _____
- (ix) Lowest insulation resistance being _____ Mohms (not less than 0.5 Mohm) measured between phases/neutral/earth. _____
- (x) All exposed conductive parts effectively earthed with a maximum earth fault loop impedance being _____ ohms. _____

(b) Busbar trunking system including rising mains

- (i) No visible damage to impair safety. _____
- (ii) Phase identification marked on both ends of main cable/conductor, and at terminations. _____

Tested by/Date
(N/A if not applicable)

(iii) All joints of metal conduit or trunking to be mechanically sound, electrically continuous and protected against corrosion.

(iv) All accessible live parts screened with an insulating plate or earthed metal.

(v) Lowest insulation resistance being _____ Mohms (not less than 0.5 Mohm) measured between phases/neutral/earth.

(vi) All metal conduit or trunking effectively earthed with a maximum earth fault loop impedance being _____ ohms.

(c) *Meter board/box*

(i) No visible damage to impair safety

(ii) Safe access provided.

(iii) All exposed metal parts effectively earthed with a maximum earth fault loop impedance being _____ ohms.

(d) *Overhead lines*

(i) No visible damage to impair safety

(ii) A minimum height of _____ metres from ground (not less than 5.8 metres for lines acrossing any place accessible to vehicular traffic, 5.2 metres in other places or not less than the tallest height restriction of _____ metres).

(iii) Lowest insulation resistance being _____ Mohms (not less than 0.5 Mohm) measured between phases/neutral/earth.

(iv) All metal work associated with every steel pole effectively earthed.

(e) *Main cables*

(i) No visible damage to impair safety.

(ii) Cables protected against mechanical damage.

(iii) Correct phase identification provided at both ends of the cable.

(iv) Lowest insulation resistance being _____ Mohms (not less than 0.5 Mohm) measured between cores and cores to earth.

Tested by/Date
(N/A if not applicable)

- (v) All exposed metal parts including the cable armour effectively earthed with a maximum earth fault loop impedance being _____ ohms.

(f) *Distribution board*

- (i) No visible damage to impair safety.
- (ii) No fuse installed in the neutral circuit.
- (iii) All live parts screened with an insulating plate or earthed metal.
- (iv) Phase identification provided on the distribution board.
- (v) Insulation resistance of not less than 0.5 Mohm measured between phases/neutral/earth.
- (vi) All exposed metal parts effectively earthed.

(g) *Final circuits*

- (i) No visible damage to impair safety.
- (ii) All non-armoured cables susceptible to damage protected with steel conduit/trunking. Bushing and rubber grommet, where necessary, provided.
- (iii) Conductor sized to suit the rating of the fuse/MCB protecting the circuit.
- (iv) No cable joint in final circuit.
- (v) All joints of metal conduits or trunking to be mechanically sound, electrically continuous and protected against corrosion.
- (vi) For temporary installation, cables lying on the ground or attached to scaffoldings secured on suitable supports.
- (vii) Insulation resistance of not less than 0.5 Mohm measured between phases/neutral/earth.
- (viii) All metal conduits, trunking, switch boxes and exposed metal parts effectively earthed.
- (ix) Residual current devices function properly.

Tested by/Date
(N/A if not applicable)

(x) Earth fault loop impedance and polarities of every outlet checked.

(h) *Motors*

(i) No visible damage to impair safety.

(ii) Insulation resistance of not less than 0.5 Mohm measured between phases/neutral/earth.

(iii) All exposed conductive parts effectively earthed.

(i) *Earthing*

(i) No visible damage to impair safety.

(ii) All exposed conductive parts of the wiring installation connected to the earthing terminal with appropriate protective conductors.

(iii) Bonding/earthing connection to water pipe/gas pipe/duct effectively connected.

(j) *Neon signs*

(i) No visible damage to impair safety.

(ii) The fireman's switch clearly labelled.

(iii) All high voltage equipment enclosed in an earthed metal box fitted with a 'DANGER' and '危險' warning notice.

(iv) All live parts screened with an insulation plate or earthed metal.

(v) High voltage cables securely supported with glass or glazed porcelain.

(vi) Insulation resistance of the L.V. circuit being _____ Mohms (not less than 0.5 Mohm) between phases/neutral/earth.

(vii) All exposed metalwork permanently and effectively bonded and earthed with a maximum earth fault loop impedance of _____ ohms measured at L.V. side.

Checklist No. 2—Additional Items For New L.V. Installation or Items For Periodic Testing of L.V. Installations connected on or after 1.1.85 but before 1.6.92

Installation Address: _____

Tested by/Date
(N/A if not applicable)

(a) Earth

- (i) A warning notice ‘SAFETY ELECTRICAL CONNECTION—DO NOT REMOVE and ‘安全接地終端——切勿移去’ provided at all main earthing and bonding connections.
- (ii) Main equipotential bonding conductors effectively connected to main water pipes, main gas pipes, other services pipes/ducting and exposed metallic parts of structural framework.
- (iii) Supplementary equipotential bonding effectively provided between exposed conductive parts and extraneous conductive parts.
- (iv) Exposed conductive parts of fixed equipment installed outside equipotential zone effectively earthed for 0.4 sec. disconnection.
- (v) Exposed conductive parts of fixed equipment other than item (iv) effectively earthed for 5 sec. disconnection.
- (vi) Effectiveness of the main equipotential bonding connection to the main earthing terminal and lightning protection system.

Checklist No. 3—Additional Items For New L.V. Installation or Items For Periodic Testing of L.V. Installations connected on or after 1.6.92

Installation Address: _____

Tested by/Date
(N/A if not applicable)

(a) Substations

- (i) A warning notice ‘DANGER—SUBSTATION, UNAUTHORISED ENTRY PROHIBITED’ and ‘危險——電力分站，未經授權不得內進’ provided at every entrance of substations. _____
- (ii) Suitable locking facilities provided for H.V. substations. _____
- (iii) Suitable lighting provided. _____
- (iv) Suitable ventilation provided. _____
- (v) Entrance/exit free of obstruction. _____

(b) Switchrooms

- (i) A warning notice ‘DANGER—ELECTRICITY, UNAUTHORISED ENTRY PROHIBITED’ and ‘危險——有電，未經授權不得內進’ provided at every entrance of switchrooms. _____
- (ii) Suitable locking facilities provided for H.V. switchrooms. _____
- (iii) Suitable lighting provided. _____
- (iv) Suitable ventilation provided. _____
- (v) Entrance/exit free of obstruction. _____

(c) Switchboards, circuit breakers and main switch

An up-to-date notice of periodic inspection and testing provided at point of supply (i.e. a switchboard, a circuit breaker or a distribution board) of the installation. _____

(d) Distribution boards

- (i) A warning notice ‘DANGER’ and ‘危險’ provided on the front panel of every distribution board. _____
- (ii) A notice of periodic testing provided at or near the main distribution board incorporating a residual current device. _____

Checklist No. 4—Additional Items For New L.V. Installation

Installation Address: _____

Tested by/Date
(N/A if not applicable)

(a) *Switchboards, circuit breakers and main switches*

- (i) Safe access and adequate clearance space provided. _____
- (ii) Number of source of supply: _____ and the rating of each of them: _____

- (iii) Maximum loading approved by the electricity supplier: _____
- (iv) Suitable interlock scheme provided to prevent parallel operation of two or more sources of supply and 4-pole incoming and interconnecting circuit breakers provided for supply to be taken from more than one source and is interconnected. _____
- (v) Electrically and mechanically interlocked 4-pole changeover device(s) where standby generator set(s) is installed. _____
- (vi) The breaking capacity of the main switch is _____ kA and all circuit breakers/inter-connection devices are able to withstand the prospective fault current. _____
- (vii) Protective relays have been correctly set and overcurrent protective devices suitably set for all circuits. _____
- (viii) Protective type C.T. are used for protective relays. _____
- (ix) A means of isolation provided for every circuit. _____
- (x) Operation of circuit breakers and main switches checked. _____
- (xi) Control, indication and alarm functions checked. _____
- (xii) No undersized conductor used between the main busbar and fuse/MCB's. _____
- (xiii) Fuses/MCB's matching the lowest rated conductor in the circuit. _____

Tested by/Date
(N/A if not applicable)

(xiv) Suitable cable terminations provided.

(xv) Cable conductors of correct phases connected.

(xvi) Single-pole devices for protection or switching connected in phase conductors only.

(b) *Busbar trunking system including rising mains*

(i) The current rating of the rising mains is _____ amperes.

(ii) The rising mains, lateral mains and meter boards positioned at places accessible from public area.

(iii) Fire barriers provided where the busbar trunking system passes through floor slabs or walls designated as fire barriers.

(iv) Cables passing through smoke lobby protected by enclosures of adequate fire rating.

(v) Non-sheathed cables protected by conduit, trunking or ducting.

(vi) Busbar trunking systems, cables and ductings adequately supported.

(vii) Armoured cables properly terminated to metal casing or trunking by proper cable glands.

(viii) Suitable cable lugs used for terminating cables.

(ix) Precaution against corrosion taking on aluminium conductor joined to copper conductor.

(x) Cutout fuses for tapping off supply fitted with insulated carriers.

(c) *Overhead lines*

(i) A steel carrier wire provided between poles to prevent strain on conductor.

(ii) substantial steel poles used to suspend cables crossing vehicular passes.

(iii) Overhead cables supported on suitable insulators.

Tested by/Date
(N/A if not applicable)

(iv) Suitable stay wires installed on the terminal poles and on each pole at which the line changes its direction.

(v) Minimum clearance of overhead lines to ground, roads and obstacles maintained.

(d) *Main cables*

(i) The cross-sectional area of each core of the main supply cable is _____ mm². Number of cables in parallel, if connected is _____.

(ii) Armoured cables properly terminated to metal casing or trunking by proper cable glands.

(iii) Cables passing through smoke lobby protected by enclosures of adequate fire rating.

(iv) Non-sheathed cables protected by conduit, trunking or ducting.

(v) Cables and ductings adequately supported.

(vi) Cables at distribution board or busbar terminated with cable lugs.

(vii) Main cables connected up with correct polarity.

(e) *Distribution board*

(i) Safe access and adequate clearance space provided.

(ii) Distribution boards securely mounted on suitable supports.

(iii) A suitable switch provided to control each distribution board.

(iv) Phase barriers for 3-phase distribution board provided.

(v) The breaking capacity of MCB is _____ kA to Code 9.

(vi) Suitable tools for withdrawal of fuses at a fuse board provided, where necessary.

(vii) Circuits connected to MCB or fuse in accordance with the schematic diagram.

Tested by/Date
(N/A if not applicable)

- (xv) Circuit protective conductor is not formed by the enclosure and a separate protective conductor to the earthing terminal of socket outlet provided.
- (xvi) Residual current device of 30 mA rated residual operating current provided for all socket outlets.
- (xvii) Means of isolation provided for every fixed appliance.
- (xviii) All chokes, starters and capacitors of discharge lamps enclosed in earthed metal box(es) and suitably ventilated.
- (xix) Phase conductors connected to the centre contact of the Edison-type screw lamp holders.
- (xx) No switches other than a switch fed from a safety source or operated by an insulation cord or rod or a push-button type of switch having an insulated button of a large surface area provided in bathrooms.
- (xxi) Shaver supply unit complying with BSEN 60742 or equivalent.
- (xxii) Socket outlet in bathroom installed in zone 3 (i.e. 0.6m away from shower basin or bathtub); and protected by a 30mA residual current device or protected by an isolating transformer to BSEN 60742.
- (xxiii) No fixed luminaire nor fixed heater having unguarded heating elements installed within reach of a person using the bath or shower.
- (xxiv) Appliances exposed to weather being splashproof type.
- (xxv) Luminaires, switches, sockets and plugs, cable couplers installed outdoor, being splashproof type.
- (xxvi) General/site lighting readily accessible to the public supplied from a safety source.

Tested by/Date
(N/A if not applicable)

(xxvii) General/site lighting not readily accessible to the public and not supplied from a safety source, protected by RCD having a rated residual operating current not exceeding 30 mA.

(g) *Motors*

(i) A local switch provided to control every motor.

(ii) Means provided to prevent unexpected restarting of motors where such restarting might cause danger.

(iii) Flexible conduits terminated with suitable brass bushes.

(iv) Separate supply to motor heaters having its terminals screened, with warning notice provided.

(h) *Earthing*

(i) Rod electrode(s) having a minimum diameter 12.5 mm copper or 16 mm galvanised or stainless steel used.

(ii) Copper tape electrode having a cross-section of not less than 25 mm × 3 mm.

(iii) Copper plate electrode not less than 3 mm in thickness and having a maximum dimension of 1 200 mm × 1 200 mm.

(iv) No gas/water pipe used as earth electrodes.

(v) A test link provided at the main earthing terminal.

(vi) Minimum size of protective conductor used in compliance with Table 11(1).

(vii) Protective conductor up to and including 6 mm² with green and yellow insulation sheath used throughout its length.

(viii) Bonding conductors of _____ mm² (not less than 150 mm² copper equivalent) used for connection to the earthing terminal of the electricity supplier's transformer(s).

Tested by/Date
(N/A if not applicable)

(ix) Bonding conductors of _____ mm² (not less than 150 mm² copper equivalent) used for connection to the exposed conductive parts of the electricity supplier's underground cable(s).

(x) Copper links provided at joints of metallic trunking which forms part of a protective conductor.

(xi) Separate protective conductors provided for all flexible conduits.

(i) *Lightning Protection*

(i) Air termination network/down conductor/earth termination network having good continuity.

(ii) Joints and connections are mechanically and electrically sound.

(iii) Connection link to the main earthing terminal provided.

(iv) Test joint provided

(v) Rod electrode(s) having a minimum diameter 12.5 mm copper or 16 mm galvanised or stainless steel used.

(vi) Copper tape electrode having a cross-section of not less than 25 mm × 3 mm.

(vii) Copper plate electrode not less than 3 mm in thickness and having a maximum dimension of 1 200 mm × 1 200 mm.

(viii) No gas/water pipe used as earth electrodes.

(ix) Measured earth termination network resistance to earth not more than 10 Ohm when the connection to main earthing terminal disconnected.

(x) No evidence of corrosion likely to lead deterioration of the lightning protection system.

(j) *High voltage discharge lighting (Neon signs)*

(i) _____ ampere control switch fitted with a removable handle or locking facilities.

(ii) Fireman's switch provided with the 'OFF' position at the top.

Tested by/Date
(N/A if not applicable)

(iii) High voltage cables exceeding 1 metre in length for connection between lamps and transformers, being metal sheathed or armoured.

(iv) Bare or lightly insulated conductors for high voltage connection protected with glass tubing.

(k) *Warning notices and labels*

(i) Warning notices for substations and switchrooms provided in compliance with Code 17.

(ii) Warning notices for earthing and main bonding connections provided in compliance with Code 17.

(iii) All switchgears, distribution boards and electrical equipment properly labelled.

(l) *Installation having both new and old cable colours*

(i) Warning notice provided in compliance with Code 17 and Appendix 17.

(ii) Proper labels provided near the cable termination interface to identify new colour cables /conductors for 1-phase circuits in compliance with Appendix 17.

(iii) Proper labels provided near the cable termination interface to identify both the new and old colour cables / conductors for 3-phase circuits in compliance with Appendix 17.

(iv) Conductors are properly identified in compliance with Code 13D(2).

Checklist No. 5—Items for H.V. Installation

(Note: For L.V. Installation/Equipment, please refer to other checklists in this appendix)

Installation Address: _____

Tested by/Date
(N/A if not applicable)

(a) *Switchboard, circuit breakers*

- (i) No visible damage to impair safety. _____
- (ii) Safe access and adequate clearance space provided. _____
- (iii) Work done properly recorded in log book. _____
- (iv) Every circuit breaker provided with a legible and durable identification label. _____
- (v) An up-to-date schematic diagram displayed. _____
- (vi) All accessible live parts screened with insulating plate or earthed metal. _____
- (vii) All exposed conductive parts effectively earthed. _____
- (viii) Earthing system effectively connected. _____
- (ix) Warning notice displayed at main bonding connections. _____
- (x) All protective devices are functioned properly and correctly set. _____
- (xi) Padlock facilities for shutters provided. _____
- (xii) Maintenance test carried out according to relevant recognised standards and manufacturers' recommendation, where appropriate, with test reports. (insulation resistance test, pressure test, ductor test, oil dielectric strength test etc.) _____

(b) *Main Cables*

- (i) No visible damage to impair safety. _____
- (ii) Cables protected against mechanical damage and suitably supported. _____
- (iii) All exposed metal parts including the armour effectively earthed. _____

Tested by/Date
(N/A if not applicable)

- (iv) Maintenance test carried out according to relevant recognised standards and manufacturers' recommendation, where appropriate, with test reports. (insulation resistance test, pressure test etc.)

(c) *Transformers/Motors*

- (i) No visible damage to impair safety.
- (ii) All accessible live parts screened with insulating plate or earthed metal.
- (iii) Proper ventilation provided to avoid excessive temperature rise.
- (iv) Maintenance test carried out according to relevant recognised standards and manufacturers' recommendation, where appropriate, with test reports. (insulation resistance test, pressure test, oil dielectric strength test etc.)

(d) *Earth*

- (i) A warning notice 'SAFETY ELECTRICAL CONNECTION—DO NOT REMOVE' and '安全接地終端——切勿移去' provided at all main earthing and bonding connections.
- (ii) Earthing conductors of adequate size.

(e) *D.C. Battery System*

- (i) Condition of battery system
- (ii) Voltage of each battery cell measured

(f) *Operation and Testing tools and equipment*

- (i) Proper operation tools and equipment provided for switching and isolation use.
- (ii) Suitable self-test high voltage tester provided for verifying equipment dead.
