

# ***Verification (inspection and testing) of an electrical installation***

## ***Part:3***

### ***Inspection***

***(Initial and periodic inspection of an existing installation up to 1000 V AC and 1500 V DC)***

*Note: For periodic inspection, a visual inspection should be made to find out the external condition of all electrical equipment which is not concealed. Further detailed inspection, including partial dismantling of equipment (as required), should be carried out as agreed with the customer.*

#### **Section 1**

##### ***Incoming equipment***

<i>Service cable:</i>	Yes
<i>Service cut out / fuse:</i>	Yes
<i>Meter tails – Distributor:</i>	No
<i>Meter tails – Consumer:</i>	No
<i>Metering Equipment:</i>	Yes
<i>Isolator (Means to isolate the public supply system):</i>	Not Applicable

*Note: Where inadequacies in distributor's equipment are encountered, it is recommended that the user informs this to the appropriate authority.*

#### **Section 2**

##### ***Presence of adequate arrangements for parallel or switched alternative sources of supply***

<i>Dedicated earthing arrangement independent to that of public supply:</i>	No
<i>Presence of adequate arrangements where generator to operate in parallel with the public supply system:</i>	No
<i>Correct connections of generator in parallel. (note: Special attention to circulating currents):</i>	Not Applicable
<i>Compatibility of characteristics of means of generation:</i>	Yes
<i>Means to provide automatic disconnection of generator in the event of loss of public supply system or voltage or frequency deviation beyond declared values:</i>	No
<i>Means to prevent connection of generator in the event of loss of public supply system or voltage or frequency deviation beyond declared values:</i>	Not Applicable
<i>Means to isolate generator from the public supply system :</i>	Yes

### Section 3

#### ***Automatic disconnection of supply***

<i>Main earthing / bonding arrangements:</i>	Not Applicable
<i>Main earthing / bonding arrangements:</i>	Not Applicable
<i>Presence and adequacy of energy suppliers earthing arrangement or installation earth electrode arrangement:</i>	No
<i>Presence and adequacy of earthing conductor and connections:</i>	Yes
<i>Accessibility of earthing conductor connections:</i>	Not Applicable
<i>Presence and adequacy of main protective bonding conductors and connections (colour, sizes, termination, and provision of independent earthing):</i>	Yes
<i>Accessibility of all protective bonding connections:</i>	No
<i>Presence and adequacy of electrical earthing/bonding labels at all appropriate locations:</i>	No
<i>Accessibility of FELV requirements satisfied:</i>	Not Applicable

### Section 4

***Other methods of protection applicable to locations where automatic disconnection of supply is not employed. If any of the methods listed below are employed details should be provided on separate page.***

*Basic and fault protection.*

<i>SELV system, including the source and associated circuits:</i>	No
<i>PELV system, including the source and associated circuits:</i>	Yes
<i>Double insulation (Class II or equivalent equipment and associated circuits):</i>	Not Applicable
<i>Reinforced insulation:</i>	Yes
<i>Electrical separation for one item of equipment (shaver supply unit):</i>	No

*Basic protection (prevention of contact with live parts).*

<i>Insulation of live parts (conductors completely covered with durable insulating material):</i>	Not Applicable
<i>Insulation of live parts (conductors completely covered with durable insulating material):</i>	Not Applicable
<i>Barriers or enclosures (correct IP rating):</i>	Yes

<i>Obstacles:</i>	No
<i>Placing out of reach:</i>	Not Applicable
<i>Fault protection.</i>	
<i>Non-Conducting location – earth free local equipotential bonding:</i>	
<i>Electrical separation:</i>	No
<i>Additional protection.</i>	
<i>RCD(s) not exceeding 30 mA operating current:</i>	Not Applicable
<i>Supplementary bonding:</i>	Yes

*SPECIFIC INSPECTION EXAMPLES to be included in the report as appropriate to the installation.*

### **Section 5**

#### ***Consumer unit(s) / distribution board(s) / distribution equipment***

1	Adequacy of access and working space for items of electrical equipment including switchgear	No
2	Security of fixing	Yes
3	Insulation of live parts not damaged during erection	Not Applicable
4	Adequacy / security of barriers	No
5	Suitability of enclosure(s) for IP and fire ratings	No
6	Enclosure not damaged during installation	Not Applicable
7	presence and effectiveness of obstacles	Yes
8	Placing out of reach	No
9	Presence of main switches linked where required	Not Applicable
10	Operation of main switches (functional checks)	No
11	Manual operation of circuit breakers and RCD's to prove functionally	Not Applicable
12	Confirmation that integral test button / switch causes RCD's to trip when operated (functional check)	Yes
13	RCD's provided for fault protection, where specified	No
14	RCD's provided for additional protection, where specified	Not Applicable
15	Confirmation of over voltage protection (SPD's) provided where specified	No
16	Confirmation of indication that SPD is functional	No
17	Presence of RCD quarterly test notice at or near origin	Yes
18	Presence of diagrams charts or schedules at or near each distribution board where required	No
19	presence of nonstandard (mixed) cable colour warning notice near appropriate distribution board, as required	Not Applicable
20	Presence of alternative supply - warning notice at or near the origin	Not Applicable
21	Presence of alternative supply - warning notice at or near the meter position, if remote from origin	No
22	Presence of alternative supply - warning notice at or near the distribution board to which alternative sources are connected	Yes

23	Presence of alternative supply - warning notice at or near all points of isolation of ALL sources of supply	No
24	Presence of next inspection recommendation label	No
25	Presence of other required labelling	No
26	Selection of protective devices and bases correct type and rating (no signs of unacceptable thermal damage, arcing or overheating)	No
27	Single pole protective devices in line conductor only	Not Applicable
28	Protection against mechanical damage where cables enter equipment	Yes
29	Protection against electromagnetic/heating effects where cables enter ferromagnetic enclosures	No
30	Confirmation that all conductor connections including connections to busbars are correctly located in terminals and are tight and secure	No

### Section 6

#### *Circuits*

1	Identification of conductors including main earthing / bonding arrangements	Not Applicable
2	Cable installation methods (including support) suitable for the location(s) and external influences (Cables correctly supported throughout)	No
3	Examination of cables for signs of mechanical damage during installation	Yes
4	Examination of insulation of live parts not damaged during erection	Yes
5	Non-Sheathed cables protected by enclosure in conduit, ducting or trucking	No
6	Suitability of containment systems including flexible conduit	Not Applicable
7	Correct temperature rating of cable insulation	Yes
8	Cables correctly terminated in enclosures	No
9	Adequacy of conductors for current-carrying capacity with respect to type and nature of the installation	Not Applicable
10	Adequacy of protective devices, type and fault current rating for fault protection	Not Applicable
11	Presence, adequacy, and correct termination of protective conductors	No
12	Co-ordination between conductors and overload protective devices	Not Applicable
13	Wiring systems and cable installation methods/ practices with regard to the type and nature of installation and external influences	Yes
14	Cables concealed under floors above ceilings, in wall adequately protected against damage by contact with fixings	No
15	Additional protection by RCD's having residual operating current (In) not exceeding 30mA for circuits used to supply mobile equipment not exceeding 32A rating for use outdoors in all cases	Not Applicable
16	Additional protection by RCD's having residual operating current (In) not exceeding 30mA for all socket outlets of rating 20A or less provided for use by ordinary persons unless exempt	Yes
17	Additional protection by RCD's having residual operating current (In) not exceeding 30mA for cables concealed in walls at a depth of less than 50mm	No
18	Additional protection by RCD's having residual operating current (In) not exceeding 30mA for Cables concealed in walls / sections containing metal sections regardless of depth	Not Applicable

19	Provision of fire barriers, sealing arrangements so as to minimize the spread of fire	Yes
20	Segregation/separation of Band I (ELV) and Band II (LV) circuits	No
21	Segregation/separation of electrical and non-electrical services	Not Applicable
22	Condition of circuit accessories	Yes
23	Cables and conductors correctly terminated, enclosed and with no undue mechanical strain	No
24	No basic insulation of a conductor visible outside enclosure	Not Applicable
25	Connections of live conductors adequately enclosed	Yes
26	Adequately connected at the point of entry to enclosure (glands, bushes etc.)	No
27	Suitability of circuit accessories for external influences	Not Applicable
28	Condition of accessories including socket-outlets, switches and joint boxes (Circuit accessories not damaged, securely fixed, correctly connected, suitable for external influences)	Yes
29	Single-pole devices for switching or protection in line conductors only	Yes
30	Adequacy of connections, including protective conductors, within accessories and fixed and stationary equipment	No
31	Presence, operation, and correct location of appropriate devices for isolation and switching	Yes

### **Section 7**

#### ***Isolation and switching***

1	Isolators - Presence of appropriate devices	Yes
2	Isolators – Condition of appropriate devices	No
3	Isolators - Location of appropriate devices (state if local or remote from equipment in question)	Not Applicable
4	Isolators - Capable of being secured in OFF position	Yes
5	Isolators - Correct operation verified (functional checks)	No
6	Isolators - The installation, circuit or Section thereof that will be isolated is clearly identified by location and/or durable marking	Not Applicable
7	Isolators - Warning label posted in the situation where live Sections cannot be isolated by the operation of single device	Yes
8	Switching off for mechanical maintenance - Presence of appropriate devices	No
9	Switching off for mechanical maintenance - Condition of appropriate devices	Not Applicable
10	Switching off for mechanical maintenance - Acceptable location (state if local or remote from equipment in question)	Yes
11	Switching off for mechanical maintenance - Capable of being secured in OFF position	No
12	Switching off for mechanical maintenance - Correct operation verified (functional check)	Not Applicable
13	Switching off for mechanical maintenance - The circuit or section thereof that will be disconnected clearly identified by location and / or durable marking	Yes
14	Switching off for mechanical maintenance - Warning label posted in situations where live parts cannot be isolated by the operation of a single device	No
15	Emergency switching / stopping - Presence of appropriate devices	Not Applicable
16	Emergency switching / stopping – Condition of appropriate devices	Yes

17	Emergency switching / stopping - Location of appropriate devices (readily accessible for operation where danger might occur)	No
18	Emergency switching / stopping - Correct operation verified (functional check)	Not Applicable
19	Emergency switching / stopping - The installation circuit or Section there of that will be disconnected clearly identified by location and / or durable marking	Yes
20	Functional switching - Presence of appropriate devices	No
21	Functional switching - Location of appropriate devices	Not Applicable
22	Functional switching - Correct operation verified (functional check)	Yes

### Section 8

#### ***Current – using equipment (permanently connected)***

1	Suitability of the equipment in terms of IP and fire ratings	No
2	Enclosure not damaged / deteriorated during installation so as to impair safety	Not Applicable
3	Suitability for the environment and external influences	Yes
4	Security of fixing	Not Applicable
5	Cable entry holes in ceilings above luminaires, seized or sealed so as to restrict the spread of fire.	Yes
6	Provision (condition) of under voltage protection, where specified.	Not Applicable
7	Provision (condition) of overload protection, where specified.	No
8	Recessed luminaires (downlighters) - Correct type of lamps fitted	Not Applicable
9	Recessed luminaires (downlighters) - Installed to minimise build-up of heat by use of “fire rated” fittings, insulation displacement box or similar	Yes
10	No signs of overheating to surrounding building fabric (applicable for periodic inspection)	Not Applicable
11	No signs of overheating to conductors / terminations (applicable for periodic inspection)	No