NORWOOD ELECTRICAL (UK) LTD

ELECTRICAL INSTALLATION CERTIFICATE

Requirements For Electrical Installations - BS 7671 IET Wiring Regulations

Certificate Reference: 78565

1 DETAILS OF THE CLIENT

Client Address: ~University of Warwick, Estates Office, Porta Cabin, R/O Boiler House, Lord Bhattacharyya Way, Coventry, CV4 7AL

2 DETAILS OF THE INSTALLATION

Installation Address: ~University of Warwick - 12 Cryfield Cottage, Estates Office, Porta Cabin, R/O Boiler House, Lord Bhattacharyya Way, Coventry, CV4 7AL

Extent of the installation covered by this certificate: All code 2 and FI remedial work from EICR no. 69401.

The installation is: New installation N/A | Addition to an existing installation N/A | Alteration to an existing installation ✔

3 DESIGN

I/We being the person(s) responsible for the design of the electrical installation (as indicated by my/our signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the design, hereby CERTIFY that the design work for which I/we have been responsible is to the best of my/our knowledge and belief in accordance with BS 7671:2018, amended to 2020 except for the departures, if any, detailed as follows.

Details of departures from BS 7671 (Regulations 120.3, 133.5): None

Details of permitted exceptions (Regulations 411.3.3): Risk assessment attached

None

The extent of liability of the signatory/signatories is limited to the work described above as the subject of this certificate.

For the DESIGN of the installation:

Name:	Position:	Signature:	Date:
N/A	N/A	N/A	N/A

Where there is divided responsibility for the design:

Name:	Position:	Signature:	Date:
N/A	N/A	N/A	N/A

4 CONSTRUCTION

I/We being the person(s) responsible for the construction of the electrical installation (as indicated by my/our signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the construction, hereby CERTIFY that the construction work for which I/we have been responsible is to the best of my/our knowledge and belief in accordance with BS 7671:2018, amended to 2020 except for the departures, if any, detailed as follows.

Details of departures from BS 7671 (Regulations 120.3, 133.5): None

The extent of liability of the signatory/signatories is limited to the work described above as the subject of this certificate.

For the CONSTRUCTION of the installation:

Name:	Position:	Signature:	Date:
N/A	N/A	N/A	N/A

5 INSPECTION AND TESTING

I/We being the person(s) responsible for the inspection and testing of the electrical installation (as indicated by my/our signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the inspection and testing, hereby CERTIFY that the inspection and testing work for which I/we have been responsible is to the best of my/our knowledge and belief in accordance with BS 7671:2018, amended to 2020 except for the departures, if any, detailed as follows.

Details of departures from BS 7671 (Regulations 120.3, 133.5): None

The extent of liability of the signatory/signatories is limited to the work described above as the subject of this certificate.

For the INSPECTION AND TESTING of the installation:

Name:	Position:	Signature:	Date:
N/A	N/A	N/A	N/A

Report reviewed and confirmed by:

Name:	Position:	Signature:	Date:
N/A	N/A	N/A	N/A

6 DESIGN, CONSTRUCTION, INSPECTION AND TESTING

I/We being the person(s) responsible for the design, construction, inspection and testing of the electrical installation (as indicated by my/our signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the design, construction, inspection and testing, hereby CERTIFY that the design work for which I/we have been responsible is to the best of my/our knowledge and belief in accordance with BS 7671:2018, amended to 2020 except for the departures, if any, detailed as follows.

Details of departures from BS 7671 (Regulations 120.3, 133.5): None

The extent of liability of the signatory/signatories is limited to the work described above as the subject of this certificate.

For the DESIGN, the CONSTRUCTION, and the INSPECTION AND TESTING of the installation:

Name:	Position:	Signature:	Date:
Danny Allen	Electrician		13/10/2021

Report reviewed and confirmed by:

Name:	Position:	Signature:	Date:
Keith Buck	Qualified Supervisor		29/10/2021

7 NEXT INSPECTION

I/We the designer(s), RECOMMEND that this installation is further inspected and tested after an interval of not more than: 5 Years

8 DETAILS OF THE ELECTRICAL CONTRACTOR

Design (1)

Trading Title: ~ Norwood Electrical (UK) LTD

Address: The Coach House, Lockington Hall, Lockington, Derbyshire

Postcode: DE74 2RH

Registration Number (if applicable): 0322788

Telephone Number: 0844 800 5540

Design (2)

Trading Title: Same as Above

Address:

Postcode:

Registration Number (if applicable):

Telephone Number:

Construction

Trading Title: Same as Above

Address:

Postcode:

Registration Number (if applicable):

Telephone Number:

Inspection and Testing

Trading Title: Same as Above

Address:

Postcode:

Registration Number (if applicable):

Telephone Number:

9 SUPPLY CHARACTERISTICS AND EARTHING ARRANGEMENTS

Earthing Arrangements

TN-S	✔
TN-C-S	N/A
TNC	N/A
TT	N/A
IT	N/A

Number and Type of Live Conductors

ac:	✔	dc:	N/A
1-phase (2 wire):	N/A	1-phase (3 wire):	✔
2-phase (3 wire):	N/A	2 pole:	N/A
3-phase (3 wire):	N/A	3-phase (4 wire):	N/A
Other:	N/A	3 pole:	N/A
		Other:	N/A

Confirmation of supply polarity: ✔

Nature of Supply Parameters

Nominal voltage(s): U:	400 V Uo: 230 V
Nominal frequency, f:	50 Hz
Prospective fault current, Ipf:	2.7 kA
External earth fault loop impedance, Ze:	0.24 Ω
Number of supplies:	1

Supply Protective Device

BS(EN):	3871 MCB
Type:	2
Rated current:	100 A
Short-circuit capacity:	10 kA

10 PARTICULARS OF INSTALLATION REFERRED TO IN THE CERTIFICATE

Means of Earthing

Distributor's facility:	✔
Installation earth electrode:	N/A

Details of Installation Earth Electrode (where applicable)

Type:		Location:	
Resistance to Earth:	Ω	Method of measurement:	

Maximum Demand (Load):

Protective measure(s) against electric shock: ADS

Main Switch / Switch-Fuse / Circuit-Breaker / RCD

Type BS(EN):	60947-3 Isolator	Current rating:	100 A	Supply conductors material:	Copper
Number of poles:	2	Fuse/device rating or setting:	A	Supply conductors csa:	35 mm²
		Voltage rating:	230 V		

If RCD main switch:

Rated residual operating current (IΔn):	mA
Rated time delay:	ms
Measured operating time (at IΔn):	ms

Earthing and Protective Bonding Conductors

Earthing conductor — Conductor material: Copper — csa: 62 mm² — Connection/continuity verified: ✔

Main protective bonding conductors — Conductor material: Copper — csa: 10 mm² — Connection/continuity verified: ✔

Bonding of extraneous-conductive parts

To water installation pipes:	✔	To gas installation pipes:	✔
To oil installation pipes:		To lightning protection:	
To structural steel:		To other service(s):	N/A

11 COMMENTS ON EXISTING INSTALLATION

None

12 INSPECTION SCHEDULE

Item No	Description	Outcome
1.0	EXTERNAL CONDITION OF INTAKE EQUIPMENT (VISUAL INSPECTION ONLY)	
1.1	Service cable	LIM
1.2	Service head	✔
1.3	Earthing arrangement	✔
1.4	Meter tails	✔
1.5	Metering equipment	✔
1.6	Isolator (where present)	N/A
2.0	PARALLEL OR SWITCHED ALTERNATIVE SOURCES OF SUPPLY	
2.1	Presence of adequate arrangements where generator to operate as a switched alternative (551.6):	
2.1.1	Dedicated earthing arrangement independent of that of the public supply (551.4.3.2.1)	N/A
2.2	Presence of adequate arrangements where generator to operate in parallel with the public supply system (551.7):	
2.2.1	Correct connection of generator in parallel (551.7.2)	N/A
2.2.2	Compatibility of characteristics of means of generation (551.7.3)	N/A
2.2.3	Means to provide automatic disconnection of generator in the event of loss of public supply system or voltage or frequency deviation beyond declared values (551.7.4)	N/A
2.2.4	Means to prevent connection of generator in the event of loss of public supply system or voltage or frequency deviation beyond declared values (551.7.5)	N/A
2.2.5	Means to isolate generator from the public supply system (551.7.6)	N/A
3.0	AUTOMATIC DISCONNECTION OF SUPPLY	
3.1	Presence and adequacy of protective earthing/bonding arrangements (411.3; Chapter 54):	
3.1.1	Distributor's earthing arrangement (542.1.2.1; 542.1.2.2), or installation earth electrode arrangement (542.1.2.3)	✔
3.1.2	Earthing conductor and connections (Section 526; 542.3; 542.3.2; 543.1.1)	✔
3.1.3	Main protective bonding conductors and connections (Section 526; 544.1; 544.1.2)	✔
3.1.4	Earthing/bonding labels at all appropriate locations (514.13)	✔
3.2	Accessibility of:	
3.2.1	Earthing conductor connections	✔
3.2.2	All protective bonding connections (543.3.2)	✔
3.3	FELV – requirements satisfied (411.7; 411.7.1)	N/A
4.0	BASIC AND FAULT PROTECTION (where used, confirmation that the requirements are satisfied)	
4.1	SELV (Section 414)	N/A
4.2	PELV (Section 414)	N/A
4.3	Double insulation (Section 412)	N/A
4.4	Reinforced insulation (Section 412)	N/A
5.0	BASIC PROTECTION	
5.1	Insulation of live parts (416.1)	✔
5.2	Barriers or enclosures (416.2; 416.2.1)	✔
5.3	Obstacles (Section 417; 417.2.1; 417.2.2)	✔
5.4	Placing out of reach (Section 417; 417.3)	✔
6.0	FAULT PROTECTION	
6.1	Non-conducting location (418.1)	✔
6.2	Earth-free local equipotential bonding (418.2)	✔
6.3	Electrical separation (Section 413; 418.3)	✔

13 INSPECTION SCHEDULE (CONTINUED)

Item No	Description	Outcome
7.0	ADDITIONAL PROTECTION	
7.1	RCDs not exceeding 30 mA as specified (415.1)	✔
7.2	Supplementary bonding (Section 415; 415.2)	✔
8.0	DISTRIBUTION EQUIPMENT	
8.1	Security of fixing (134.1.1)	✔
8.2	Insulation of live parts not damaged during erection (416.1)	✔
8.3	Adequacy/security of barriers (416.2)	✔
8.4	Suitability of enclosures for IP and fire ratings (416.2; 421.1.6; 421.1.201; 526.5)	✔
8.5	Enclosures not damaged during installation (134.1.1)	✔
8.6	Presence and effectiveness of obstacles (417.2)	✔
8.7	Components are suitable according to manufacturers assembly instructions or literature (536.4.203)	✔
8.8	Presence of main switch(es), linked where required (462.1.201)	✔
8.9	Operation of main switch(es) (functional check) (643.10)	✔
8.10	Manual operation of circuit-breakers and RCDs to prove functionality (643.10)	✔
8.11	Confirmation that integral test button/switch causes RCD(s) to trip when operated (functional check) (643.10)	✔
8.12	RCD(s) provided for fault protection, where specified (411.4.204; 411.5.2; 531.2)	N/A
8.13	RCD(s) provided for additional protection, where specified (415.1)	✔
8.14	Confirmation overvoltage protection (SPDs) provided where specified (534.4.1.1)	✔
8.15	Presence of RCD six-monthly test notice at or near the origin (514.12.2)	✔
8.16	Presence of diagrams, charts or schedules at or near each distribution board, where required (514.9.1)	✔
8.17	Presence of non-standard (mixed) cable colour warning notice at or near the appropriate distribution board, where required (514.14)	✔
8.18	Presence of alternative supply warning notice at or near (514.15):	
8.18.1	The origin	N/A
8.18.2	The meter position, if remote from origin	N/A
8.18.3	The distribution board to which the alternative/additional sources are connected	N/A
8.18.4	All points of isolation of ALL sources of supply	N/A
8.19	Presence of next inspection recommendation label (514.12.1)	N/A
8.20	Presence of other required labelling (Section 514)	N/A
8.21	Selection of protective device(s) and base(s); correct type and rating (411.3.2; 411.4, .5, .6; Sections 432, 433, 434)	N/A
8.22	Single-pole protective devices in line conductors only (132.14.1; 530.3.3; 643.6)	N/A
8.23	Protection against mechanical damage where cables enter equipment (522.8.1; 522.8.5; 522.8.11)	N/A
8.24	Protection against electromagnetic effects where cables enter ferromagnetic enclosures (521.5.1)	N/A
8.25	Confirmation that ALL conductor connections, including connections to busbars, are correctly located in terminals and are tight and secure (526.1)	N/A
9.0	CIRCUITS	
9.1	Identification of conductors (514.3.1)	✔
9.2	Cables correctly supported throughout (522.8.5; 521.10.202)	✔
9.3	Examination of cables for signs of mechanical damage during installation (522.6.1; 522.8.1; 522.8.3)	✔
9.4	Examination of insulation of live parts, not damaged during erection (522.6.1; 522.8.1)	✔
9.5	Non-sheathed cables protected by enclosure in conduit, ducting or trunking (521.10.1)	✔

14 INSPECTION SCHEDULE (CONTINUED)

Item No	Description	Outcome
9.6	Suitability of containment systems (including flexible conduit) (Section 522)	✔
9.7	Correct temperature rating of cable insulation (522.1.1; Table 52.1)	✔
9.8	Adequacy of cables for current-carrying capacity with regard for the type and nature of installation (Section 523)	✔
9.9	Adequacy of protective devices: type and fault current rating for fault protection (434.5)	✔
9.10	Presence and adequacy of circuit protective conductors (411.3.1; 543.1)	✔
9.11	Coordination between conductors and overload protective devices (433.1; 533.2.1)	✔
9.12	Wiring systems and cable installation methods/practices with regard to the type and nature of installation and external influences (Section 522)	✔
9.13	Cables concealed under floors, above ceilings, in walls/partitions, adequately protected against damage (522.6.201, 522.6.202, 522.6.203, 522.6.204)	✔
9.14	Provision of additional protection by RCDs having rated residual operating current (In) not exceeding 30mA:	
9.14.1	For all socket-outlets of rating (32A) or less, unless exempt (411.3.3)	✔
9.14.2	Supplies for mobile equipment not exceeding 32A rating for use outdoors (411.3.3)	✔
9.14.3	For cables concealed in walls at a depth of less than 50mm (522.6.202, .203)	✔
9.14.4	For cables concealed in walls/partitions containing metal parts regardless of depth (522.6.202; .203)	✔
9.14.5	Circuits supplying luminaires within domestic (household) premises (411.3.4)	✔
9.15	Provision of fire barriers, sealing arrangements so as to minimize the spread of fire (Section 527)	✔
9.16	Band II cables segregated/separated from Band I cables (528.1)	✔
9.17	Cables segregated/separated from non-electrical services (528.3)	✔
9.18	Termination of cables at enclosures (Section 526):	
9.18.1	Connections under no undue strain (522.8.5; 526.6)	✔
9.18.2	No basic insulation of a conductor visible outside enclosure (526.8)	✔
9.18.3	Connections of live conductors adequately enclosed (526.5)	✔
9.18.4	Adequately connected at point of entry to enclosure (glands, bushes etc.) (522.8.5)	✔
9.19	Suitability of circuit accessories for external influences (512.2)	✔
9.20	Circuit accessories not damaged during erection (134.1.1)	✔
9.21	Single-pole devices for switching or protection in line conductors only (132.14.1, 530.3.3; 643.6)	✔
9.22	Adequacy of connections, including cpcs, within accessories and at fixed and stationary equipment (Section 526)	✔
10.0	ISOLATION AND SWITCHING	
10.1	Isolators (462; 537.2):	
10.1.1	Presence and location of appropriate devices (Section 462; 537.2.7)	✔
10.1.2	Capable of being secured in the OFF position (537.2.4)	✔
10.1.3	Correct operation verified (functional check) (643.10)	✔
10.1.4	The installation, circuit or part thereof that will be isolated clearly identified by location and/or durable marking (537.2.7)	✔
10.1.5	Warning notice posted in situation where live parts cannot be isolated by the operation of a single device (514.11.1; 537.1.2)	✔
10.2	Switching off for mechanical maintenance (Section 464; 537.3.2):	
10.2.1	Presence of appropriate devices (464.1; 537.3.2)	✔
10.2.2	Acceptable location - state if local or remote from equipment in question (537.3.2.4)	✔
10.2.3	Capable of being secured in the OFF position (464.2)	✔
10.2.4	Correct operation verified (functional check) (643.10)	✔
10.2.5	The circuit or part thereof to be disconnected clearly identified by location and/or durable marking (537.3.2.3; 537.3.2.4)	✔

15 INSPECTION SCHEDULE (CONTINUED)

Item No	Description	Outcome
10.3	Emergency switching/stopping (Section 465; 537.3.3; 537.4):	
10.3.1	Presence of appropriate devices (465.1; 537.3.3; 537.4)	✔
10.3.2	Readily accessible for operation where danger might occur (537.3.3.6)	✔
10.3.3	Correct operation verified (functional check) (643.10)	✔
10.3.4	The installation, circuit or part thereof to be disconnected clearly identified by location and/or durable marking (537.3.3.6)	✔
10.4	Functional switching (463.1; 537.3.1):	
10.4.1	Presence of appropriate devices (537.3.1.1; 537.3.1.2)	✔
10.4.2	Correct operation verified (functional check) (537.3.1.1; 537.3.1.2; 643.10)	✔
11.0	CURRENT-USING EQUIPMENT (PERMANENTLY CONNECTED)	
11.1	Suitability of equipment in terms of IP and fire ratings (416.2; 421.1; 421.1.201; 526.5)	✔
11.2	Enclosure not damaged/deteriorated during installation so as to impair safety (134.1.1)	✔
11.3	Suitability for the environment and external influences (512.2)	✔
11.4	Security of fixing (134.1.1)	✔
11.5	Cable entry holes in ceilings above luminaires, sized or sealed so as to restrict the spread of fire (527.2)	✔
11.6	Provision of undervoltage protection, where specified (Section 445)	✔
11.7	Provision of overload protection, where specified (Section 433; 552.1)	✔
11.8	Recessed luminaires (downlighters):	
11.8.1	Correct type of lamps fitted (559.3.1)	✔
11.8.2	Installed to minimize build-up of heat (421.1.2; 559.4.1)	✔
11.9	Adequacy of working space/accessibility to equipment (132.12; 513.1)	✔
12.0	LOCATION(S) CONTAINING A BATH OR SHOWER (SECTION 701)	
12.1	Additional protection for all low voltage (LV) circuits by RCD not exceeding 30mA (701.411.3.3)	✔
12.2	Where used as a protective measure, requirements for SELV or PELV met (701.414.4.5)	N/A
12.3	Shaver sockets comply with BS EN 61558-2-5 formerly BS 3535 (701.512.3)	N/A
12.4	Presence of supplementary bonding conductors, unless not required by BS 7671:2018 (701.415.2)	✔
12.5	Low voltage (e.g. 230 volt) socket-outlets sited at least 3m from zone 1 (701.512.3)	✔
12.6	Suitability of equipment for external influences for installed location in terms of IP rating (701.512.2)	✔
12.7	Suitability of accessories and controlgear etc. for a particular zone (701.512.3)	✔
12.8	Suitability of current-using equipment for particular position within the location (701.55)	✔
13.0	PART 7 SPECIAL INSTALLATIONS OR LOCATIONS	
13.1	N/A	N/A
13.2	N/A	N/A
13.3	N/A	N/A

All boxes must be completed. 'tick' indicates that an inspection or test was carried out and that the result was satisfactory. 'X' indicates than an inspection or test was carried out and the result is not satisfactory. 'N/A' indicates that an inspection or test was not applicable to the particular installation. 'LIM' indicates that, exceptionally, a limitation agreed with the person ordering the work prevented the inspection or test being carried out.

16 SCHEDULE OF CIRCUIT DETAILS AND TEST RESULTS

Distribution board designation: 01-147-00-002-DB1 (MK) Location: 01-147-00-002

Circuit number and phase	Circuit designation	Type of wiring	Reference Method	Number of points served	Circuit conductors: csa		Max disconnect time permitted by BS7671	Overcurrent protective devices				RCD	Maximum Z_s permitted by BS7671	Circuit impedances (Ohms)					Insulation resistance			Polarity	Maximum measured earth fault loop impedance Zs	RCD		AFDD
														Ring final circuits only (measured end to end)			All circuits (one column to be completed)									
					Live	cpc		BS(EN)	Type No	Rating	Capacity	Operating current, $I\Delta n$		r_1	r_n	r_2	R_1+R_2	R_2	Live - Live	Live - Earth	Test voltage			Disconnection time	Test button operation	Test button operation
					mm^2	mm^2	s			A	kA	mA	Ω	(Line)	(Neutral)	(cpc)			MΩ	MΩ	V	✔	Ω	ms	✔	✔
8	Lights - FF 001, 002, 003, 004, 005, 006	A	100	8	1.5	1	0.4	60898	B	6	6	30	7.28	---	---	---	0.53	---	---	>999	500	✔	0.75	16	✔	---
10	Sockets - FF 001, 004, 005, 006	A	100	8	2.5	1.5	0.4	60898	B	32	6	30	1.37	0.47	0.47	0.75	0.31	---	---	>999	500	✔	1.05	20	✔	---

CODES FOR TYPE OF WIRING	A Thermoplastic insulated/sheathed cables	B Thermoplastic cables in metallic conduit	C Thermoplastic cables in non metallic conduit	D Thermoplastic cables in metallic trunking	E Thermoplastic cables in non metallic trunking	F Thermoplastic /SWA cables	G Thermosetting /SWA cables	H Mineral insulated cables	O - Other
									N/A

17 BOARD CHARACTERISTICS

APPLIES WHEN THE BOARD IS NOT CONNECTED TO THE ORIGIN OF THE INSTALLATION

Supply to this distribution board is from: MP1 - 8 L3 No of phases: 1 Confirmation of supply polarity: ✔

Overcurrent protective device for the distribution circuit: BS(EN): 3871 - Type 2 Rating: 100 A Nominal Voltage: 230 V Zs: 0.24 Ω Ipf: 0.97 kA

RCD BS(EN): 61008 RCD No of poles: 2 Rating: 30 mA Disconnection time at In: 9 ms Disconnection time at 5In: 20 ms

18 DETAILS OF TEST INSTRUMENTS

Details of Test Instruments used (state serial and/or asset numbers):

Multi-functional: 101750951 Insulation resistance: - Continuity: -

Earth electrode resistance: - Earth fault loop impedance: - RCD: -

19 TESTED BY

Name: Danny Allen Position: Electrician Signature: Dallen Date: 13/10/2021

ELECTRICAL INSTALLATION CERTIFICATE
GUIDANCE FOR RECIPIENTS

(to be appended to the Certificate)

This safety Certificate has been issued to confirm that the electrical installation work to which it relates has been designed, constructed and inspected and tested in accordance with British Standard 7671 (as amended) (The IET Wiring Regulations).

You should have received an original Certificate and the contractor should have retained a duplicate Certificate. If you were the person ordering the work, but not the user of the installation, you should pass this Certificate, or a full copy of it including the schedules, immediately to the user.

The 'original' Certificate should be retained in a safe place and be shown to any person inspecting or undertaking further work on the electrical installation in the future. If you later vacate the property, this Certificate will demonstrate to the new owner that the electrical installation complied with the requirements of British Standard 7671 at the time the certificate was issued. The Construction (Design and Management) Regulations require that for a project covered by those regulations, a copy of this Certificate, together with schedules is included in the project health and safety documentation.

For safety reasons, the electrical installation will need to be inspected at appropriate intervals by a competent person. The maximum time interval recommended before the next inspection it stated on Page 1 under 'Next Inspection'.

This Certificate is intended to be issued only for a new electrical installation or new new work associated with an alteration or addition to an existing installation. It should not have been issued for the inspection of an existing electrical installation. An 'Electrical Installation Condition Report' should be issued for such an inspection.

This Certificate is only valid if a Schedule of Inspections and Schedule of Test Results are appended.