



Date 31/08/2018



Certificate Serial No/Ref:

31082018

# Smart Electricians Ltd

## DOMESTIC ELECTRICAL INSTALLATION CERTIFICATE

(Requirements for Electrical Installations – BS 7671 IET Wiring Regulations)

<b>DETAILS OF THE CLIENT</b>		<b>ADDRESS OF THE INSTALLATION</b>	
Client and address	Dr James Houndsworth App 21, Regent Street	Installation address	189 City Road Sheffield
	Postcode: S1 4DA		Postcode: S2 5HF
<b>DETAILS OF THE INSTALLATION</b>			<b>The Installation Is</b>
Extent of the installation work covered by this certificate	Full electrical rewire of property.		New <input checked="" type="checkbox"/>
			An addition <input type="checkbox"/>
			An alteration <input type="checkbox"/>
<b>DESIGN, CONSTRUCTION, INSPECTION AND TESTING</b>		* BS 7671 amended to : 2015	
I being the person/s responsible for the design, construction, inspection and testing of the electrical installation (as indicated by my signature) 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, construction, inspection and testing work for which I/we have been responsible is, to the best of my knowledge and belief, in accordance with BS 7671: amended to* except for the departures, if any, detailed as follows:		The extent of liability of the signatory/signatories is limited to work described above as the subject of this certificate. For the DESIGN, CONSTRUCTION, INSPECTION & TESTING of the installation.	
Details of departures from BS 7671: as amended (Regulations 120.3 & 133.5)		Signature  Name (Capitals) R WARD Date 31/08/2018	
N/A		The results of the inspection and testing reviewed by	
		Signature  Name (Capitals) R SHAW Date 03/10/2018	
<b>PARTICULARS OF THE CONTRACTOR</b>		<b>NEXT INSPECTION</b> * Interval in terms of years, months, or weeks, as appropriate	
Trading title	Smart Electricians Ltd	I RECOMMEND that this installation is further inspected and tested after an interval of not more than * 5 Years	
143 Alnwick Road Sheffield	Email info@smartelectricians.co.uk	<b>COMMENTS ON EXISTING INSTALLATION</b> Additional information and report notes	
	Web www.smartelectricians.co.uk	N/A	
Telephone No	0330 043 2031	<b>SCHEDULE OF ADDITIONAL RECORDS</b> See attached schedule	
	Postcode S12 2GG	Risk assessment attached	
Registration No: (if applicable)	D602883	N/A	
	Branch No: (if applicable) N/A		

## SUPPLY CHARACTERISTICS AND EARTHING ARRANGEMENTS

System		Number and Type of Live Conductors				Nature of Supply Parameters						*Characteristics of Primary Supply									
TN-S	N/A	1-phase (2 wire)	✓	1-phase (3 wire)	N/A	AC or DC	A/C	Nominal Voltage U (1)	230	V	Nominal frequency f (1)	50	Hz	BS(EN)	BS 1361 Fuse HBC						
TN-C-S	✓							2-phase (3 wire)	N/A	3-phase (4 wire)	N/A	U <sub>o</sub> (1)	230	V	External earth fault loop impedance Z <sub>e</sub> (2/3)	0.24	Ω	Type	Type 2		
TT	N/A	other		N/A		Single-phase		Prospective fault current (2/3)	1.0	kA	3-phase		Prospective fault current (2/3)	N/A	kA	Rated current	100	A	Short-circuit capacity	6	kA

(1) by enquiry  
(2) by enquiry or by measurement  
(3) where more than one supply, the higher or highest values

\*Other sources of supply to be detailed on attached schedules

## PARTICULARS OF INSTALLATION AT THE ORIGIN

Means of earthing		Details of installation Earth Electrode (where applicable)				Measured Ze		Main Switch/Switch-Fuse/Circuit-Breaker/RCD													
Distributor's facility	✓	Type: (e.g rod(s), tape, etc)	N/A		Method of measurement:	N/A		Maximum demand: (load)	100	Amps	Type BS(EN)	BS EN 60947-3 Isolator		Voltage rating	230	V					
Installation earth electrode	N/A	Electrode resistance to Earth	N/A		Location:	N/A		Number of smoke alarms	4		No of poles	2		Rated Current	100	A					
Earthing conductor		Main protective bonding conductors and bonding of extraneous conductive parts (✓)																			
Conductor material:	Copper		Conductor material	Copper		Conductor csa	10		Location: (where not obvious)			Supply conductor material	Copper		*RCD operating current I <sub>Δn</sub>	N/A	mA				
Conductor csa:	16	mm <sup>2</sup>	Continuity check	✓		N/A	Gas installation pipes	✓	Water installation pipes	✓	Oil installation pipes	N/A	Structural steel	N/A	To other Specify	N/A	*RCD rated time delay	N/A	ms		
																		*RCD operating time (at I <sub>Δn</sub> )		N/A	ms

\* If RCD main switch


## SCHEDULE OF ITEMS TESTED

✓ External earth loop impedance, Z <sub>e</sub>	✓ Polarity	✓ Protection by separation of circuits
N/A Installation earth electrode resistance, R <sub>a</sub>	✓ Earth fault loop impedance Z <sub>s</sub>	✓ Other (*Please note below)
✓ Continuity of protective conductors	✓ Verification of phase sequence	* Further notes for items tested, if applicable  N/A
✓ Continuity of ring final circuit conductors	✓ Operation of residual current device(s)	
✓ Insulation resistance between live conductors	✓ Functional testing of assemblies	
✓ Insulation resistance between live conductors and earth	✓ Verification of voltage drop	

## SCHEDULE OF INSPECTIONS (for new installation work only)

Item No	DESCRIPTION	OUTCOME	Item No	DESCRIPTION	OUTCOME	Item No	DESCRIPTION	OUTCOME
<b>1.0</b>	<b>DISTRIBUTOR'S / SUPPLY INTAKE EQUIPMENT</b>		<b>6.0</b>	<b>OTHER METHODS OF PROTECTION</b>		<b>8.0</b>	<b>CIRCUITS continued</b>	
1.1	Condition of service cable	✓	6.1	<b>Presence and effectiveness of methods which give both basic and fault protection:</b>		8.3	Segregation/separation of Band I (ELV) and Band II (LV) circuits, and electrical and non-electrical services (528)	✓
1.2	Condition of service head	✓		• SELV system, including the source and associated circuits (Section 414)	N/A	8.4	Cables correctly erected and supported throughout including escape routes, with protection against abrasion (Sections 521, 522)	✓
1.3	Condition of distributor's earthing arrangement	✓		• PELV system, including the source and associated circuits (Section 414)	N/A	8.5	Provision of fire barriers, sealing arrangements where necessary (527.2)	✓
1.4	Condition of meter tails - Distributor/Consumer	✓		• Double or reinforced insulation i.e. Class II or equivalent equipment and associated circuits (Section 412)	✓	8.6	Non-sheathed cables enclosed throughout in conduit, ducting or trunking (521.10.1; 526.8)	✓
1.5	Condition of metering equipment	✓		• Electrical separation for one item of equipment e.g. shaver supply unit (Section 413)	N/A	8.7	Cables concealed under floors, above ceilings or in walls/partitions, adequately protected against damage (522.6.201, .202, .204)	✓
1.6	Condition of isolator (where present)	N/A	<b>7.0</b>	<b>CONSUMER UNIT(S) / DISTRIBUTION BOARD(S):</b>		8.8	Conductors correctly identified by colour, lettering or numbering (Section 514)	✓
<b>2.0</b>	<b>PARALLEL OR SWITCHED ALTERNATIVE SOURCES OF SUPPLY</b>		7.1	Adequacy of access and working space for items of electrical equipment including switchgear (132.12)	✓	8.9	Presence, adequacy and correct termination of protective conductors (411.3.1.1; 543.1)	✓
2.1	Adequate arrangements where a generating set operates as a switched alternative to the public supply (551.6)	N/A	7.2	Presence of linked main switch(s) (537.1.4; 537.1.5; 537.1.6)	✓	8.10	Cables and conductors correctly connected, enclosed and with no undue mechanical strain (Section 526)	✓
2.2	Adequate arrangements where a generating set operates in parallel with the public supply (551.7)	N/A	7.3	Isolators, for every circuit or group of circuits and all items of equipment (537.2)	✓	8.11	No basic insulation of a conductor visible outside enclosure (526.8)	✓
<b>3.0</b>	<b>AUTOMATIC DISCONNECTION OF SUPPLY</b>		7.4	Suitability of enclosure(s) for IP and fire ratings (416.2; 421.1.6; 421.1.201)	✓	8.12	Single-pole devices for switching or protection in line conductors only (132.14.1; 530.3.2)	✓
<b>3.1</b>	<b>Presence, adequacy of earthing &amp; protective bonding arrangements:</b>		7.5	Protection against mechanical damage where cables enter equipment (522.8.1; 522.8.11)	✓	8.13	Accessories not damaged, securely fixed, correctly connected, suitable for external influences (134.1.1; 512.2; Section 526)	✓
	• Installation earth electrode (where applicable) (542.1.2.3)	N/A	7.6	Confirmation that ALL conductor connections are correctly located in terminals and are tight and secure (526.1)	✓	<b>8.14</b>	<b>Provision of additional protection by RCD not exceeding 30mA:</b>	
	• Earthing conductor and connections, including accessibility (542.3; 543.3.2)	✓	7.7	Avoidance of heating effects where cables enter ferromagnetic enclosures e.g. steel (521.5)	✓		• Socket-outlets rated at 20 A or less, unless exempt (411.3.3)	✓
	• Main protective bonding conductors and connections, including accessibility (411.3.1.2; 543.3.2)	✓	7.8	Selection of correct type and ratings of circuit protective devices for overcurrent and fault protection (411.3.2; 411.4, .5, .6; Sections 432, 433)	✓		• Mobile equipment with a current rating not exceeding 32 A for use outdoors (411.3.3)	✓
	• Provision of safety electrical earthing/bonding labels at all appropriate locations (514.13)514.13)	✓	<b>7.9</b>	<b>Presence of appropriate circuit charts, warning and other notices:</b>			• Cables concealed in walls at a depth of less than 50 mm (522.6.202, .203)	✓
	• RCD(s) provided for fault protection (411.4.9; 411.5.3)	✓		• Provision of circuit charts/schedules or equivalent forms of information (514.9)	✓		• Cables concealed in walls/partitions containing metal parts regardless of depth (522.6.202; 522.6.203)	✓
<b>4.0</b>	<b>BASIC PROTECTION</b>			• Warning notice of method of isolation where live parts not capable of being isolated by a single device (514.11)	✓	<b>8.15</b>	<b>Presence of appropriate devices for isolation and switching correctly located including:</b>	
4.1	<b>Presence and adequacy of measures to provide basic protection (prevention of contact with live parts) within the installation:</b>			• Periodic inspection and testing notice (514.12.1)	✓		• Means of switching off for mechanical maintenance (537.3)	✓
	• Insulation of live parts e.g. conductors completely covered with durable insulating material (416.1)	✓		• RCD quarterly test notice; where required (514.12.2)	✓		• Emergency switches (537.4)	✓
	• Barriers or enclosures e.g. correct IP rating (416.2)	N/A		• Warning notice of non-standard (mixed) colours of conductors present (514.14)	✓		• Functional switches, for control of parts of the installation and current-using equipment (537.5)	✓
<b>5.0</b>	<b>ADDITIONAL PROTECTION</b>		7.10	Presence of labels to indicate the purpose of switchgear and protective devices (514.1.1; 514.8)	✓		• Firefighter's switches (537.6)	N/A
<b>5.1</b>	<b>Presence and effectiveness of additional protection methods:</b>		<b>8.0</b>	<b>CIRCUITS</b>				
	• RCD(s) not exceeding 30 mA operating current (415.1; Part 7), see Item 8.14 of this schedule	✓	8.1	Adequacy of conductors for current-carrying capacity with regard to type and nature of the installation (Section 523)	✓			
	• Supplementary bonding (415.2; Part 7)	✓	8.2	Cable installation methods suitable for the location(s) and external influences (Section 522)	✓			

**SCHEDULE OF INSPECTIONS (for new installation work only) continued**

Item No	DESCRIPTION	OUTCOME	Item No	DESCRIPTION	OUTCOME	Item No	DESCRIPTION	OUTCOME
9.0	<b>CURRENT-USING EQUIPMENT (PERMANENTLY CONNECTED)</b>		10.0	<b>LOCATION(S) CONTAINING A BATH OR SHOWER (SECTION 701)</b>		11.0	<b>OTHER PART 7 SPECIAL INSTALLATIONS OR LOCATIONS</b>	
9.1	Equipment not damaged, securely fixed and suitable for external influences (134.1.1; 416.2; 512.2)	✓	10.1	30 mA RCD protection for all LV circuits, equipment suitable for the zones, supplementary bonding (where required) etc	✓	11.1	List all other special installations or locations present, if any (Record separately the results of particular inspections applied)	N/A
9.2	Provision of overload and/or undervoltage protection e.g. for rotating machines, if required (Sections 445, 552)	✓	Inspected By		Date			
9.3	Installed to minimize the build-up of heat and restrict the spread of fire (421.1.4; 559.4.1)	✓	R WARD		31/08/2018			
9.4	Adequacy of working space. Accessibility to equipment (132.12; 513.1)	✓						

TEST INSTRUMENTS USED	
Earth fault loop impedance	N/A
Continuity	N/A
MFT	2216020
Insulation resistance	N/A
RCD	N/A
Other	N/A

**Details of circuits and/or installed equipment vulnerable to damage when testing and/or remarks:**

N/A

**DISTRIBUTION BOARD DETAILS FOR 189 City Road Sheffield S2 5HF**

DB ref:	DB1	Zs at this board (Ω):	0.24	lpf at this board (kA):	0.95	Main switch type BSEN	1361 type 2	Rating:	100	<b>Amps</b>	Supply	25	<b>mm<sup>2</sup></b>	Earth:	16	<b>mm<sup>2</sup></b>
Distribution board location:	Cellar	Phase Sequence Confirmed (where appropriate)	N/A	Supplied from:	Mains	No. Of phases:	Single	Supply protective device type BSEN reference:	BS 1361 Fuse HBC - Type 2			Rating:	100	<b>Amps</b>		

**CIRCUIT DETAILS**

**TEST RESULTS**

Circuit Reference	Circuit Designation	Type of wiring	Reference method	Number of points served	Circuit conductors		Max disconnection time permitted	Over current devices			RCD	Max Zs(Ω) Permitted by BS7671	Continuity Ω					Insulation resistance				Polarity Insert ✓ or X	Measured Zs Ω	RCD			
					Live (mm <sup>2</sup> )	cpc (mm <sup>2</sup> )		Type BS EN	Rating (A)	Short circuit capacity (kA)			IΔn mA	Ring final circuits only (Measured end to end)			All circuits (At least one column to be completed)		Live/Live M Ω	Line/Neutral M Ω	Live/Earth M Ω			Neutral/Earth M Ω	Test button functionality	At IΔn ms	At 5 x IΔn ms
														r <sub>1</sub> (line)	r <sub>n</sub> (neutral)	r <sub>2</sub> (cpc)	(R1 + R2)	R <sub>2</sub>									

1	Cooker	A	101	1	6.0	2.5	0.4	60898 type B	32	6	30	1.1	N/A	N/A	N/A	0.22	N/A	N/A	>200mΩ	>200mΩ	>200mΩ	✓	0.46	✓	15	35	
2	Ring Circuit kitchen.	A	101	7	2.5	1.5	0.4	60898 type B	32	6	30	1.1	0.21	0.20	0.41	N/A	0.41	N/A	>200mΩ	>200mΩ	>200mΩ	✓	0.64	✓	15	35	
3	Spare	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4	Radial Circuit lounge, Bedroom1 & Alarm.	A	101	10	2.5	1.5	0.4	60898 type B	16	6	30	2.2	N/A	N/A	N/A	0.33	N/A	N/A	>200mΩ	>200mΩ	>200mΩ	✓	0.57	✓	15	35	
5	Lights downstairs & smokes	A	101	19	1.0	1.0	0.4	60898 type B	6	6	30	5.87	N/A	N/A	N/A	0.46	N/A	N/A	>200mΩ	>200mΩ	>200mΩ	✓	0.81	✓	15	35	
6	Spare	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7	Spare	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
8	Radial Circuit upstairs sockets.	A	101	13	2.5	1.5	0.4	60898 type B	16	6	30	2.2	N/A	N/A	N/A	0.46	N/A	N/A	>200mΩ	>200mΩ	>200mΩ	✓	0.71	✓	17	28	
9	Lights upstairs.	A	101	11	1.0	1.0	0.4	60898 type B	6	6	30	5.87	N/A	N/A	N/A	0.69	N/A	N/A	>200mΩ	>200mΩ	>200mΩ		0.93	✓	17	28	
10	Lights	A	101	1	1.5	1.0	0.4	60898 type B	6	6	30	5.87	N/A	N/A	N/A	0.32	N/A	N/A	>200mΩ	>200mΩ	>200mΩ	✓	0.56	✓	17	28	



CODES FOR TYPES OF WIRING							
A	B	C	D	E	F	G	
PVC/PVC CABLES	PVC CABLES IN METALLIC CONDUIT	PVC CABLES IN NON-METALLIC CONDUIT	PVC CABLES IN METALLIC TRUNKING	PVC CABLES IN NON-METALLIC TRUNKING	PVC/SWA CABLES	XLPE/SWA CABLES	Reference Methods are methods of installation for which the current-carrying capacity has been determined by test or calculation

## NOTES FOR RECIPIENT

**THIS CERTIFICATE IS A VALUABLE DOCUMENT AND SHOULD BE RETAINED FOR FUTURE REFERENCE**

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 (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 owner 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 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 health and safety documentations.

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 is stated in the certificate under "Next Inspection."

This certificate is intended to be issued only for a new electrical installation or for new work associated with an alteration or addition to a 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.

The certificate is only valid if a Schedule of Inspection of Test Results is attached.