



645fm Ltd

Electrical Installation Certificate

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

DETAILS OF THE CLIENT	
Client/Address	Grants Property Management , 685 Great Western Road, Glasgow, G12 8RA

DETAILS OF THE INSTALLATION			
Address:	12 Pembroke Street Flat 0/1, Glasgow, G3 7BQ	New	<input checked="" type="checkbox"/>
Extent of the installation covered by this Certificate:	Full installation.	An Addition	<input type="checkbox"/> N/A
		An Alteration	<input type="checkbox"/> N/A

DESIGN		* BS 7671 amended to : 2020				
<p>I/We being the person(s) responsible for the design of the electrical installation (as indicated by my/our signature(s) 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 knowledge and belief, in accordance with BS 7671 amended to* except for the departures, if any, detailed as follows:</p>						
Details of departures from BS 7671 *as amended (Regulations 120.3, 133.1.3, 133.5)	N/A					
<p>Details of permitted exceptions (Regulation 411.3.3). Where appropriate a suitable risk assessment should be attached to this certificate</p>						
Risk assessment attached						
<p>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: ** (Where there is divided responsibility for the design)</p>						
Signature		Date	14/08/2021	Name (CAPITALS)	RICHARD BLACKER	Designer 1
Signature		Date	14/08/2021	Name (CAPITALS)	RICHARD BLACKER	Designer 2 **

CONSTRUCTION		* BS 7671 amended to : 2020				
<p>I being the person(s) responsible for the construction of the electrical installation (as indicated by my/our signature(s) 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 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:</p>						
Details of departures from BS 7671 *as amended (Regulations 120.3, 133.1.3, 133.5)	N/A					
<p>The extent of liability of the signatory is limited to the work described above as the subject of this certificate. For the CONSTRUCTION of the installation:</p>						
Signature		Date	14/08/2021	Name (CAPITALS)	RICHARD BLACKER	Constructor

INSPECTION AND TESTING		* BS 7671 amended to : 2020				
<p>I being the person(s) responsible for the inspection and testing of the electrical installation (as indicated by my/our signature(s) 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 have been responsible is, to the best of my knowledge and belief, in accordance with BS 7671 as amended to* except for the departures, if any, detailed as follows:</p>						
Details of departures from BS 7671 *as amended (Regulations 120.3, 133.1.3, 133.5)	N/A					
<p>The extent of liability of the signatory is limited to the work described above as the subject of this certificate. For the INSPECTION AND TESTING of the installation:</p>						
Signature		Date	14/08/2021	Name (CAPITALS)	RICHARD BLACKER	Inspector
Reviewed by						
Signature		Date	14/08/2021	Name (CAPITALS)	RICHARD BLACKER	Qualified Supervisor

DESIGN, CONSTRUCTION, INSPECTION AND TESTING

* This box is to be completed only where the design, construction, inspection and testing have been the responsibility of one person.



I, being the person responsible for the design, construction, inspection and testing of the electrical installation (as indicated by my signature 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 inspection and testing work for which I have been responsible is, to the best of my knowledge and belief, in accordance with BS 7671 as amended to** except for the departures, if any, detailed as follows:

**BS 7671 amended to : 2020

Details of departures from BS 7671, as amended (Regulations 120.3 & 133.5)

N/A

The extent of liability of the signatory is limited to the work described above as the subject of this certificate. For the DESIGN, CONSTRUCTION, and the INSPECTION AND TESTING of the installation.

Signature		Date	14/08/2021	Name (CAPITALS)	RICHARD BLACKER	INSPECTOR
Reviewed by						
Signature		Date	14/08/2021	Name (CAPITALS)	RICHARD BLACKER	Qualified Supervisor

PARTICULARS OF THE ORGANISATION(S) RESPONSIBLE FOR THE ELECTRICAL INSTALLATION

DESIGN (1)
Organisation

645FM LTD

Address:

45B Main Street
Glasgow
G46 7SF

Registration No. (Where appropriate)

610932000

Branch number (if applicable)

DESIGN (2)
Organisation

N/A

Address:

N/A

Registration No. (Where appropriate)

N/A

Branch number (if applicable)

N/A

CONSTRUCTION
Organisation

645FM LTD

Address:

45B Main Street
Glasgow
G46 7SF

Registration No. (Where appropriate)

610932000

Branch number (if applicable)

INSPECTION & TESTING
Organisation

645FM LTD

Address:

45B
Main Street
Glasgow
G46 7SF

Registration No. (Where appropriate)

610932000

Branch number (if applicable)

SUPPLY CHARACTERISTICS AND EARTHING ARRANGEMENTS

System Types		Number and types of live conductors				Nature of supply parameters		
TN-S	N/A	a.c.	<input checked="" type="checkbox"/>	d.c.	N/A	Nominal voltage U/Uo	230	Volts
TN-C-S	<input checked="" type="checkbox"/>	1-Phase 2 wire	<input checked="" type="checkbox"/>	2 wire	N/A	Nominal frequency	50	Hz
TN-C	N/A	2-Phase 3 wire	N/A	3 wire	N/A	Prospective fault current	2.19	kA
TT	N/A	3-Phase 3 wire	N/A	3-Phase 4 wire	N/A	External Ze	0.11	Ohms
IT	N/A	Other		Confirmation of supply polarity	<input checked="" type="checkbox"/>	Number of supplies	1	

CHARACTERISTICS OF THE SUPPLY OVERCURRENT PROTECTIVE DEVICE

Type BS/EN Rated current **A** Short circuit capacity **kA**

PARTICULARS OF INSTALLATION AT THE ORIGIN

Means of earthing

Supplier's facility

Installation earth electrode

Maximum Demand (Load) **Amps**

Details of installation Earth Electrode (where applicable)

Type: (e.g. rods, tape etc)

Electrode resistance to Earth **Ω**

Protection under normal conditions

Location

Method of measurement

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

Type BSEN No of poles Fuse/Device rating **V** Current rating **A**

Supply conductors

Conductor material
Conductor csa **mm²**

If RCD main switch

RCD IΔn operating current **mA** RCD rated time delay **ms** RCD at IΔn operating time **ms**

Earthing conductors

Conductor material Conductor csa **mm²** Continuity check **(✓) OK**

Main bonding conductors to extraneous-conductive-parts

Conductor material Conductor csa **mm²** Continuity check **(✓) OK**

Bonding of extraneous conductive parts (✓)

Water Installation pipes Gas Installation pipes Oil Installation pipes Structural steel Lightning protection Other **List in report notes**

COMMENTS ON THE EXISTING INSTALLATION

N/A

NEXT INSPECTION

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

SCHEDULE OF INSPECTIONS (for new installation work only)

Item No	DESCRIPTION	OUTCOME	Item No	DESCRIPTION	OUTCOME
1.0	DISTRIBUTOR'S / SUPPLY INTAKE EQUIPMENT (VISUAL INSPECTION ONLY)			CONSUMER UNIT(S) / DISTRIBUTION BOARD(S) continued	
1.1	Service cable	✓	7.6	Protection against mechanical damage where cables enter equipment (522.8.1; 522.8.5; 522.8.11)	✓
1.2	Service head	✓	7.7	Confirmation that ALL conductor connections are correctly located in terminals and are tight and secure (526.1)	✓
1.3	Earthing arrangement	✓	7.8	Avoidance of heating effects where cables enter ferromagnetic enclosures e.g. steel (521.5)	✓
1.4	Meter tails	✓	7.9	Selection of correct type and ratings of circuit protective devices for overcurrent and fault protection (411.3.2; 411.4, 411.5, 411.6; Sections 432, 433; 537.3.1.1)	✓
1.5	Metering equipment	✓	7.10	Presence of appropriate circuit charts, warning and other notices:	
1.6	Isolator (where present)	N/A		• Provision of circuit charts/schedules or equivalent forms of information (514.9)	✓
2.0	PARALLEL OR SWITCHED ALTERNATIVE SOURCES OF SUPPLY			• Warning notice of method of isolation where live parts not capable of being isolated by a single device (514.11)	N/A
2.1	Adequate arrangements where a generating set operates as a switched alternative to the public supply (551.6)	N/A		• Periodic inspection and testing notice (514.12.1)	✓
2.2	Adequate arrangements where a generating set operates in parallel with the public supply (551.7)	N/A		• RCD six-monthly test notice; where required (514.12.2)	✓
3.0	AUTOMATIC DISCONNECTION OF SUPPLY			• AFDD six-monthly test notice; where required	✓
3.1	Presence, adequacy of earthing & protective bonding arrangements			• Warning notice of non-standard (mixed) colours of conductors present (514.14)	N/A
	• Distributor's earthing arrangement (542.1.2.1; 542.1.2)	✓	7.11	Presence of labels to indicate the purpose of switchgear and protective devices (514.1.1; 514.8)	✓
	• Installation earth electrode (where applicable) (542.1.2.3)	N/A	8.0	CIRCUITS	
	• Earthing conductor and connections, including accessibility (542.3; 543.3.2)	✓	8.1	Adequacy of conductors for current-carrying capacity with regard to type and nature of the installation (Section 523)	✓
	• Main protective bonding conductors and connections, including accessibility (411.3.1.2; 543.3.2; 544.1)	✓	8.2	Cable installation methods suitable for the location(s) and external influences (Section 522)	✓
	• Provision of safety electrical earthing/bonding labels at all appropriate locations (514.13)	✓	8.3	Segregation/separation of Band I (ELV) and Band II (LV) circuits, and electrical and non-electrical services (528)	N/A
	• RCD(s) provided for fault protection (411.4.204; 411.5.3)	✓	8.4	Cables correctly erected and supported throughout including escape routes, with protection against abrasion (Sections 521, 522)	✓
4.0	BASIC PROTECTION		8.5	Provision of fire barriers, sealing arrangements where necessary (527.2)	✓
4.1	Presence and adequacy of measures to provide basic protection (prevention of contact with live parts) within the installation:		8.6	Non-sheathed cables enclosed throughout in conduit, ducting or trunking (521.10.1; 526.8)	N/A
	• Insulation of live parts e.g. conductors completely covered with durable insulating material (416.1)	✓	8.7	Cables concealed under floors, above ceilings or in walls/partitions, adequately protected against damage (522.6.201, .202, .204)	✓
	• Barriers or enclosures e.g. correct IP rating (416.2)	✓	8.8	Conductors correctly identified by colour, lettering or numbering (Section 514)	✓
5.0	ADDITIONAL PROTECTION		8.9	Presence, adequacy and correct termination of protective conductors (411.3.1.1; 543.1)	✓
5.1	Presence and effectiveness of additional protection methods:		8.10	Cables and conductors correctly connected, enclosed and with no undue mechanical strain (Section 526)	✓
	• RCD(s) not exceeding 30 mA operating current (415.1; Part 7), see Item 8.14 of this schedule	✓	8.11	No basic insulation of a conductor visible outside enclosure (526.8)	✓
	• Supplementary bonding (415.2; Part 7)	N/A	8.12	Single-pole devices for switching or protection in line conductors only (132.14.1; 530.3.3; 643.6)	✓
6.0	OTHER METHODS OF PROTECTION		8.13	Accessories not damaged, securely fixed, correctly connected, suitable for external influences (134.1.1; 512.2; Section 526)	✓
6.1	Presence and effectiveness of methods which give both basic and fault protection:		8.14	Provision of additional protection by RCD not exceeding 30mA:	
	• SELV system, including the source and associated circuits (Section 414)	N/A		• Socket-outlets rated at 32 A or less, unless exempt (411.3.3)	✓
	• PELV system, including the source and associated circuits (Section 414)	N/A		• Supplies for mobile equipment with a current rating not exceeding 32 A for use outdoors (411.3.3)	N/A
	• Double or reinforced insulation i.e. Class II or equivalent equipment and associated circuits (Section 412)	N/A		• Cables concealed in walls at a depth of less than 50 mm (522.6.202, .203)	✓
	• Electrical separation for one item of equipment e.g. shaver supply unit (Section 413)	N/A		• Cables concealed in walls/partitions containing metal parts regardless of depth (522.6.202; 522.6.203)	N/A
7.0	CONSUMER UNIT(S) / DISTRIBUTION BOARD(S):			• Final circuits supplying luminaires within domestic (household) premises (411.3.4)	✓
7.1	Adequacy of access and working space for items of electrical equipment including switchgear (132.12)	✓	8.15	Presence of appropriate devices for isolation and switching correctly located including:	
7.2	Components are suitable according to assembly manufacturer's instructions or literature (536.4.203)	✓		• Means of switching off for mechanical maintenance (Section 464; 537.3.2)	✓
7.3	Presence of linked main switch(es) (462.1.201)	✓		• Emergency switching (465.1; 537.3.3)	N/A
7.4	Isolators, for every circuit or group of circuits and all items of equipment (462.2)	✓		• Functional switching, for control of parts of the installation and current-using equipment (463.1; 537.3.1)	✓
7.5	Suitability of enclosure(s) for IP and fire ratings (416.2; 421.1.6; 421.1.201; 526.5)	✓		• Firefighter's switches (537.4)	N/A

✓ To indicate that an inspection or test has been carried out and the result is satisfactory
 N/A To indicate the inspection or test is not applicable to a particular item

NOTE : This form is suitable for many types of smaller installation, not exclusively domestic. Electrical separation (see Section 413 and Regulation 418.3)

SCHEDULE OF INSPECTIONS (for new installation work only) continued

Item No	DESCRIPTION	OUTCOME	Item No	DESCRIPTION	OUTCOME
9.0	CURRENT-USING EQUIPMENT (PERMANENTLY CONNECTED)		10.0	LOCATION(S) CONTAINING A BATH OR SHOWER (SECTION 701)	
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	✓
9.2	Provision of overload and/or undervoltage protection e.g. for rotating machines, if required (Sections 445, 552)	N/A	11.0	OTHER PART 7 SPECIAL INSTALLATIONS OR LOCATIONS	
9.3	Installed to minimize the build-up of heat and restrict the spread of fire (421.1.4; 559.4.1)	✓	11.1	List all other special installations or locations present, if any. (Record separately the results of particular inspections applied)	N/A
9.4	Adequacy of working space. Accessibility to equipment (132.12; 513.1)	✓			
Inspected By		Date			
Richard Blacker		29/01/2020			

SCHEDULE OF ADDITIONAL RECORDS (See attached schedule)

Note: Additional page(s) must be identified by the Electrical Installation Certificate serial number and page number(s)

Page No(s) N/A

ESSENTIAL TESTS				TEST INSTRUMENTS USED	
✓	External earth loop impedance, Ze	N/A	Insulation of non-conducting floors or walls	MFT	
N/A	Installation earth electrode resistance, Ra	✓	Earth fault loop impedance Zs	101073569	
✓	Continuity of protective conductors	N/A	Verification of phase sequence	Earth fault loop impedance	
✓	Continuity of ring circuit conductors	✓	Operation of residual current devices	N/A	
✓	Insulation resistance between live conductors	N/A	Functional testing of assemblies	Insulation resistance	
✓	Insulation resistance between live conductors and earth	✓	Verification of voltage drop	N/A	
N/A	Protection by separation of circuits			Continuity	
✓	Basic protection against direct contact by barrier or enclosure provided during erection			N/A	
✓	Polarity			RCD	
				N/A	
				Other	
				N/A	

DISTRIBUTION BOARD DETAILS FOR 12 Pembroke Street Flat 0/1 Glasgow G3 7BQ

DB ref:	DB1	Zs at this board (Ω):	0.11	lpf at this board (kA):	2.19	Main switch type BSEN	60947	Rating:	100	Amps	Supply	25	mm²	Earth:	16	mm²
Distribution board location:	Hall cupboard	Phase Sequence Confirmed (where appropriate)	N/A	Supplied from:	Mains	No. Of phases:	Single	Supply protective device type BSEN reference:	BS 1361 Type 2b	Rating:	60	Amps				

CIRCUIT DETAILS

TEST RESULTS

Circuit Reference	Circuit Designation	Type of wiring	Reference method	Number of points served	Circuit Conductors		Max disconnection time	Protective Device					Continuity Ω					Insulation Resistance				Polarity	Maximum measured Zs Ω	RCD		AFDD	
					Live (mm ²)	cpc (mm ²)		Type BS (EN)	Rating (A)	RCD IΔn mA	Short circuit capacity (kA)	Max permitted Zs (Ω*)	Ring final circuits only (measured end to end)			All circuits (At least 1 column to be completed)		Insulation resistance test voltage V	Live - Live	Live - Neutral	Live - Earth			Neutral - Earth	Disconnection time (ms)		RCD test button/ functionality
													r ₁	r _n	r ₂	R _{1+R2}	R ₂										

1	Shower	A	C		6.0	2.5	0.4	60898 type B	32	30	6	1.10	N/A	N/A	N/A	0.08	N/A	500v	N/A	>200	>200	>200	✓	0.19	37.6	22.3	✓	N/A
2	Ring Circuit	A	C	8	2.5	1.5	0.4	60898 type B	32	30	6	1.10	0.60	0.60	1.00	0.40	N/A	500v	N/A	>200	>200	>200	✓	0.51	37.6	22.3	✓	N/A
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	N/A	N/A
4	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	N/A	N/A
5	Alarm	A	C	1	1.0	1.0	0.4	60898 type B	6	30	6	5.82	N/A	N/A	N/A	0.03	N/A	500v	N/A	>200	>200	>200	✓	0.14	37.6	22.3	✓	N/A
6	Cooker	A	C	1	6.0	2.5	0.4	60898 type B	32	30	6	1.10	N/A	N/A	N/A	0.39	N/A	500v	N/A	>200	>200	>200	✓	0.50	38.0	25.0	✓	N/A
7	Ring Circuit	A	C		2.5	1.5	0.4	60898 type B	32	30	6	1.10	0.73	0.74	1.21	0.48	N/A	500v	N/A	>200	>200	>200	✓	0.59	38.0	25.0	✓	N/A
8	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	N/A	N/A
9	Lights	A	C	8	1.0	1.0	0.4	60898 type B	6	30	6	5.82	N/A	N/A	N/A	0.68	N/A	500v	N/A	>200	>200	>200	✓	0.79	38.0	25.0	✓	N/A
10	Lights	A	C	9	1.0	1.0	0.4	60898 type B	6	30	6	5.82	N/A	N/A	N/A	0.72	N/A	500v	N/A	>200	>200	>200	✓	0.83	38.0	25.0	✓	N/A

* Where the maximum permitted earth fault loop impedance value stated is taken at from a source other than the tabulated values given in Chapter 41 of BS 7671, state the source of the data



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

Led downlights are vulnerable to insulation resistance testing on lighting circuits.
The boiler is vulnerable to insulation resistance testing.
Emergency light is vulnerable to insulation resistance testing on lighting circuit.
Bond to water main behind inspection panel in bathroom.
Bond for gas main is at meter in hall.

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).

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. 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 skilled person or persons, competent in such work. The maximum time interval recommended before the next inspection is stated in the certificate under "Next Inspection."

Notes for the person producing the certificate:

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 where new circuits have been introduced, or the replacement of a consumer unit/distribution board. It should not have been issued for the inspection of an existing electrical installation. An Electrical Installation Condition Report should be used in this case.

The certificate is only valid if a Schedule of Inspection of test results is attached.

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