Local Authority Building Control

Guidance Note for the operation of Part P – Electrical Safety

Version 2.0_Final
Endorsed by Technical Working Group 16/07/08

Contents

1. Objectives

(a) To implement Part P in a manner which will ensure the maximum benefits in terms of public safety.

(b) To keep tight control of costs.

(d) To develop a mutually beneficial working relationship with the electrical industry, so as to ensure best use is made of their experience and technical knowledge.

(d) To promote on all possible occasions the use of installers registered with “Competent Persons Schemes” as the preferred means of showing compliance with part P.

2. Legislative Background

(a) It is the responsibility of those carrying out Building work to ensure that the relevant provisions of Schedule 1 of the regulations are fully met. The role of Building Control in enforcing the regulations is to check that they do so.

(b) When Part P was originally issued in 2004, the mandatory requirement P1 clearly required those carrying out work to ensure that -

"Reasonable provision is made for the design, installation, inspection and testing of electrical installations in order to protect persons from fire or injury"

(c) Part P was subsequently amended, and as a result the mandatory requirement itself was changed so that it required those carrying out work to ensure that –

"***Reasonable provision shall be made in the design and installation of electrical installations in order to protect persons operating, maintaining or altering the installations from fire or injury"***

(d) This change removes from the mandatory requirement itself the necessity for inspection and testing of electrical installations. Information about the need for inspection and testing of installations now exists only in the Approved Document itself.

(e) It should be noted at this point that BS7671 already requires that an appropriate electrical installation certificate be provided by the installer when works are complete. The process suggested by this document does no more therefore than requiring installers to do what they should already be doing anyway.

(f) The Approved Document now breaks down the need for certification and testing into the three groupings suggested by the previous LABC guidance document on Part P, these being -

1. Works carried out by those registered under a competent persons scheme. (Paras 1.18 to 1.20)
2. Works carried out by competent electricians, who could be considered competent for the purposes of signing a BS 7671 electrical installation certificate - but who are not a member of a Competent Persons Scheme and hence cannot "self-certify" their own work. (Paras 1.21 to 1.23)
3. Works carried out by anyone else (DIY Etc) who cannot be considered competent to sign electrical installation certificates, and who would be advised to employ the services of someone who is appropriately qualified/experienced to provide an electrical installation certificate for their work. In the case of minor alterations building control surveyors will use their judgement to determine whether they require a certificate or could simply approve the work. (Paras 1.24 to 1.27)

(g) Paragraph 1.25 of the Approved Document to Part P now advises that where the works are carried out by a person falling within group (3), it is for the Building Control Body to decide upon the extent to which inspection and testing is appropriate, and then to arrange for that testing and inspection to be carried out.

(h) Paragraph 1.26 then goes on to state that the cost of any inspection and testing needed must be met by the Building Control Body.

(i) By virtue of appearing in the Approved Document rather than the regulations themselves, neither of these paragraphs have mandatory effect. They are however covered by the "tending to demonstrate compliance" status carried by all Approved Documents.

3. Difficulties Encountered.

(a) In the case of persons carrying out work who are members of competent persons schemes relatively few difficulties have been encountered and most Building Control Bodies are happy to accept that where they are satisfied the works have been carried out by a member of a Part P competent persons scheme, no further inspection and testing is necessary. Difficulties do arise however where installers -

(1) claim to be members of a Part P scheme – and it subsequently becomes clear they are not; or

(2) where a member of a Part P scheme is supposed to do the work, but it is then done by someone else.

(b) In both cases above it is essential that the status of the installer is established as early in the process as is possible, so that a proper risk assessment of the extent to which inspection is needed can be carried out.

(c) In the case of works carried out by installers who are themselves competent to issue an electrical certificate the key difficulty is normally establishing if the installer could fairly be considered to be “qualified”. Paragraph 1.10 of the Approved Document gives advice on who could be considered to be appropriately qualified – but this is not in a form that is simple to establish on-site. Building Control bodies should be on their guard against accepting electrical certificates from an installer without making checks to establish their competence even though this is difficult to do in practice.

(d) The main difficulties occur where the work is carried out by an installer who is not in one of the above two groups. The previous version of this guidance document established that we could require persons carrying out work to provide evidence of inspection and testing by virtue of the mandatory provision of requirement P1. Now that P1 no longer makes reference to inspection and testing it would appear that this option is no longer available to us.

(e) It is also the case that the electrical industry itself has not helped in this regard due to the reluctance to allow members to carry out inspection and testing of other installers work. While there are understandable reasons for this, it has the effect of denying Building Control bodies access to the very experts best qualified and competent to do such work.

(f) As a result of further consultation, the industry has largely accepted that periodic inspection reports could be used as a means of allowing third party testing where the work was under the supervision of Building Control. Periodic inspection reports were never intended for this purpose however, and their use has been criticised both within the industry and by the Health and Safety executive.

It is sobering to remember that the fault that led to the death of Mary Wherry (whose mother Jenny Tonge MP is widely credited as a driving force behind the introduction of Part P) would not have been prevented if only a periodic inspection report had been accepted. This is because the wire itself was in an illegal location, and only a visual pre-plaster inspection would have spotted the problem.

4. Recommendations

(a) Following the introduction of Part P, LABC has enjoyed a continuous dialog with the electrical industry, principally through our membership of the Competent Persons Forum which meets regularly at the CLG. These discussions have helped develop a mutual understanding of the problems being encountered in securing compliance with Part P.

(b) With the considerable help of NAPIT, a new understanding has been reached to cover situations where the electrical work is not carried out under a Part P Competent Persons Scheme. This will enable Building Control bodies to carry out a pre-plaster inspection of electrical installations themselves, and then call on the services of a competent electrician to carry out final inspection and testing of the work.

(c) Under the scheme, electrical organisations will provide details of their members who are considered competent to carry out this work for the Building Control Body. Each organisation will ensure that members they put forward will -

1. Be a current member of a CLG approved Electrical Full Scope Self Certification Scheme
2. Have an Electrical Installation NVQ Level 3 qualification or equivalent QCA or UKAS accredited certificate.
3. Have at least 4 years relevant experience gained post their core electrical qualification in (2) above
4. Hold a qualification on the current edition of BS7671 and gained within the last 5 years
5. Hold a qualification on the Inspection, Testing, Verification and Certification of Electrical Installations and gained within the last 5 years
6. Hold a qualification on the application of the Building Regulations gained within the last five years
7. Be protected by at least £250,000 worth of Professional Indemnity Insurance
8. Be protected by at least £2M of Public Liability Insurance
9. Have attended a half day LABC scheme familiarisation course

(d) These requirements have already been accepted by NAPIT and NICEIC and both have agreed to support the scheme. It is hoped that members of other electrical schemes will also wish to participate.

(e) Where desired by the Building Control Body, such members could also carry out the pre-plaster inspections on their behalf. It is suggested however that such inspections fall within the competence of a Building Surveyor, provided they have had the appropriate training.

(f) The forms used as a part of this process have been clearly designed to differentiate between the work which should be inspected by the Building Surveyor, and that which will be the responsibility of the electrician. Taken together, the result is a joint electrical report (not certificate) which when satisfactorily completed will provide the evidence to support the issue of a completion certificate. The report itself would not be issued to the client.

(g) The forms developed by NAPIT to support the new scheme are attached to this guidance note, and will be made available in the form of pads for use on site. It is a pre-condition of the use of this scheme that any Building Surveyor carrying out the pre-plaster inspection must have attended an LABC training course (including update training on the changes made in the 17th edition of the standard) before doing so.

(h) Where electrical work is carried out by anyone other than a Part P registered installer, (and the Building Surveyor is satisfied that the works will be registered under the scheme) it is recommended that a pre-plaster inspection is carried out and the results recorded on the first part of the report form. Should problems occur later in obtaining an electrical certificate, or in verifying the installer is "qualified", then it will then still be possible to call on the services of an electrician to carry out inspection and testing on completion.

(i) Those Building Control bodies who already employ their own electricians to inspect and test installations are free to continue to do so, but it is recommended that both electricians and Building Surveyors have the training recommended above and use the forms which have been specifically designed for this purpose.

(j) LABC recommend that the use of periodic inspection reports for new installations be phased out as quickly as possible, and replaced with the procedures outlined above.

(k) Building Control Bodies will need to pay for this service, and it is recommended that they build up working relationships with an appropriate number of electricians under the scheme on the basis of agreed fixed price contracts. Allowance for these costs can then be built into the charge for the work.

Please Note - Building Control Surveyors should always be mindful of the interaction of Part P with other parts of the building regulations when checking electrical installations.

5. Enforcement.

(a) The industry is concerned that Local Authorities could do more to crack down on illegal electrical installations, and LABC have recently agreed to co-operate with the Competent Persons Schemes to improve enforcement.

(b) Installers who become aware of illegal work being carried out can bring it to the attention of the scheme they belong to, who will then use a dedicated e-mail address to bring it to the attention of LABC. The schemes have agreed that they will only refer reports to LABC where there is a reasonable case for action, and they can provide all the information necessary for an investigation to be launched.

(c) Where LABC receive a report under the scheme, this will be checked to see the information is complete, and then passed on to the relevant Local Authority for investigation.

(d) LABC would encourage Local Authorities to investigate all such reports of an unauthorised electrical installation. Many “cowboy” electrical installers are still operating without joining a Part P scheme or making a Building Regulation application, and are taking a calculated risk that they will not be caught. They are then able to under-cut prices quotes given by those electricians who are following the rules. Ultimately it is to our mutual benefit that such installers are either stopped, or if they are competent to do so, encouraged to join a Part P scheme.

(e) Where as a result of investigating a report made under the scheme a Local Authority requires technical guidance, or an expert witness report, the Competent Persons scheme referring the report will provide this support. If possible this support will be provided free of charge – but it may be necessary to make a charge where site visits or specialist investigation is needed.

(f) LABC will monitor the success of any reports made under the scheme, and hopes to join forces with the Competent Persons Schemes to publicise our successes.

(g) Local Authorities are however reminded that all enforcement action must be proportionate, and decisions taken must be in line with the Councils enforcement policy document.

Where the Authority knows the electrical installation to be faulty.

(a) Where the Authority is aware of a fault in the electrical installation which may affect life safety, and which cannot be resolved by other means, formal enforcement action must always be taken to protect the occupiers.

(b) Refusal to issue a completion certificate is not a satisfactory option in such cases.

(c) If such action is taken in relation to work carried out under a Competent Persons Scheme, the scheme provider should also be informed.

6. Regularisation Certificate Applications

(a) It must be remembered that the responsibility for demonstrating that the work complies with Part P lies squarely with the person requesting the regularisation certificate, and the Authority is under no obligation to issue a certificate until satisfied on that point.

(b) The applicant should be asked if an electrical installation certificate was issued at the time the work was carried out. If not, an electrical report prepared under the scheme outlined in this guidance note should be prepared, which should include appropriate exposure/tracing of the cables as considered necessary.

Building Control ***Minor Works/Single Circuit*** Electrical Report

For compliance with Building Regulations Part P.

LABC

Can be used for alterations, additions or installation of a new circuit. Please complete all the unshaded areas.

1 Part 1: Initial assessment of the existing system to be extended

1. Number of existing accessories or circuits already connected to this system New Circuit number
2. Is the addition to or the additional circuit in an area of high risk? Yes No
   If 'Yes', is it a Kitchen Bathroom Outdoors Other If 'Other', please state
3. Is there enough spare load capacity on the existing system to allow it to be extended? Yes No
4. Have tests been carried out prior to installation work to ensure the system or circuit to be extended is healthy? Yes No
5. Are the existing Earthing and Bonding arrangements adequate? Yes No
6. BS Number and Type of CPD Cable size and type
7. Supply parameters TN-C-S TN-S TT Ze Ω Pscc kA 400v and/or 230v
8. Method of protection against indirect contact: EEBAD If 'Other', please state

   If you answered 'No' to items 3, 4, 5 or any other comments regarding the Installation, see *Defects Report* pages to

2 Part 2: Description of the addition to or the additional circuit

1. Brief description and location
2. Address of the property
3. Date the works were completed / /

3 Part 3: Visual Check **Schedule of inspections (1st box for Inspected, 2nd box for Rectified)** *Please tick, cross, N/C or N/A*

	1st Fix	2nd Fix		1st Fix	2nd Fix	
4			Protective Bonding Conductors present and adequate			
8			Correct Circuit Protection Device fitted and identified			
9			Correct Cable type and size used, allowing for external influences			
10			Cable in 'safe' zones and mechanically or RCD protected			
11			Cables securely fastened or in appropriate wiring protection systems			
12			All Cable cores correctly identified in joints & accessories			
13						All cables joints correctly terminated, secure & accessible
14						Modifications to the Building Fabric appropriate and safe
16						All Accessories correctly placed as per Approved Document M and BS8300
17						Appropriate Supplementary Bonding present & adequate
21						All covers replaced, Accessories secure & neatly aligned
23						Circuit details updated on the installation schedule (or schedule produced)

Name – First Fix: Title

Signature Date / / *See separate report page(s)*

Name – Second Fix: Title

Signature Date / / *See separate report page(s)*

4 Part 4: Essential Tests

Ct No.	P/Device BS No.	Type	A	Rcd mA	80%Max Zs	Ring Circuit Only $r_1\Omega$	$r_N\Omega$	$r_2\Omega$	R_1+R_2 or $R_2\Omega$	L/L L/N MΩ	L/E MΩ	N/E MΩ	Earth Loop Ω	$I_{\Delta n}$ ms	$5I_{\Delta n}$ ms

Satisfactory (1st Column) **Unsatisfactory** (2nd Column) *Please tick, cross, N/C or N/A*

1. Earth Continuity			4. Earth Loop Impedance		
2. Insulation resistance			5. RCD (If applicable)		
3. Polarity (Dead & Live)			6. Instrument No(s).		

5 Part 5: Declaration

1. I/We certify that the said works do not impair the safety of the existing installation, that the said works, as far as it is reasonably practical to determine, have been designed, constructed, inspected and tested in accordance with BS 7671: , (IEE Wiring Regulations) amended to and that the said works, to the best of my/our knowledge and belief, at the time of my/our inspection, complied with Chapter 13 of BS 7671: .

2. Electrical Inspector

For and on behalf of

Address

CP Scheme Membership No.

3. Signature

Position

Date / /

4. An inspection and test of this installation is recommended after an interval of not more than years/months.

Building Control ***Minor Works/Single Circuit*** Electrical Report

For compliance with Building Regulations Part P

NOTES:

1. This Building Control Minor Works/Single Circuit Report form shall only be used for the reporting on the condition of an electrical installation, where the work has not been undertaken by a Competent Person on a self certification scheme approved by the Secretary of State.
2. All faults found on the Initial Inspection, must be rectified before the Final Inspection, Test and Verification takes place and, if satisfactory, a Building Control Completion Certificate issued
3. The maximum prospective fault current recorded should be the greater of either the short-circuit current or the earth fault current.
4. The time interval recommended for the next periodic inspection and testing shall be given. The IEE Guidance Note 3 provides guidance on the maximum interval between inspections for various types of buildings

Caution

The person responsible for the work must satisfy the inspector (either the Building Control Officer or the Electrical Inspector) that an initial assessment of the existing electrical installation has been made to ensure that the proposed Minor Works/Single Circuit addition or alteration to the Electrical Installation can be undertaken safely, this assessment must have been undertaken by a person competent to do so.

Minimum Terms of Contract for the Electrical Inspector

The Electrical Inspector must be working as (or for) a member company of a DCLG licensed Part P Competent Person Self Certification Scheme.

The Electrical Inspector must personally hold an Electrical NVQ Level 3 qualification (or equivalent) plus an up to date[1] qualification on BS7671, plus an up to date[1] qualification on Design Verification, Inspection, Testing and Certification procedures, as recommended by the edition of BS7671, current at the time of the Inspection and Certification.

The Electrical Inspector must be covered by £250,000 worth of Professional Indemnity Insurance.

This is not an independent third party Electrical Inspection and no Electrical Certificate must be issued, the Electrical Inspector is working solely as an agent of the Local Authority and must not leave a copy of this Electrical Report at the property.

(1) Gained within five years of the date of the Inspection and Certification.

Building Control *Electrical Defects Report* sheet

For compliance with Building Regulations Part P.
Can be used for new installations, additions or alterations.Please complete all the unshaded areas.

LABC

1st fix report/2nd fix report (delete as necessary)

sheet ☐ **of** ☐

Site					
Inspector		Signature		Date	/ /

Observations and recommendations for actions to be taken

☐ The following observations are made OR ☐ The following remedial work and recommendations are made

Explanation of codes
1. Requires urgent attention
2. Requires improvement
3. Requires further investigation
4. Does not comply with the current edition of BS 7671

Item No.	Defect details	Code

Urgent remedial work recommended for items

Corrective action(s) recommended for items

When the work above has been completed, please contact your local authority building control department to have the work inspected.

Building Control *Electrical Report*

For compliance with Building Regulations Part P.
Can be used for new installations, additions or alterations.Please complete all the unshaded areas.

NAPIT

LABC

LABC

1 Details of the installation

Owner/Occupier	Installation
Address	Address *(if different from the applicant's)*
Postcode	Postcode

2 Extent and limitations of the inspection and installation

Installation is New ☐ Addition ☐ Alteration ☐ Records available Yes ☐ No ☐ Date of original installation

Extent of electrical installation covered by this report

Limitations

This inspection has been carried out in accordance with BS 7671: (IEE Wiring Regulations). Cables concealed within trunking and conduits, or cables and conduits concealed under floors, in roof spaces and generally within the fabric of the building or underground will be inspected at first fix to determine, as far as is reasonably practicable, that BS 7671: has been complied with. All faults found on the Initial Inspection, must be rectified before the Final Inspection, Test and Verification is carried out and a Building Control Completion Certificate issued.

3 Electrical Inspector's details

Name	Signature
Inspector	
Address	Position
	Date
Postcode	CP Scheme Membership No.

4 Supply characteristics and earthing arrangements

Supply systems TN-S ☐ TN-C-S ☐ TT ☐ **Number & type of live conductors** 1-phase, 2 wire ☐ 3-phase, 4 wire ☐

Nature of Supply Parameters *(Note: (1) by enquiry, (2) by enquiry or by measurement)*

Normal voltage, U/U_o (1) v Normal frequency, f (1) Hz

Prospective fault current, I_{pf} (2) (note 5) kA External loop impedance, Z_e (2) Ω

Supply Protective Device Characteristics Type Nominal Current Rating A **Max Demand** A

Means of Earthing Distributor's facility ☐ Installation earth electrode ☐

Details of Installation Earth Electrode *(where applicable)* Type (e.g. rod(s), tape etc)

Location Electrode resistance to earth Ω

Protective Conductors	Material	Csa (mm2)	Connection verified
Earthing conductor			
Protective bonding conductors			

Incoming Services Verified Water ☐ Gas ☐ Oil ☐ Steel structure ☐ Other services

Main Switch or Circuit Breaker

BS: Type Location No. of Poles

Fuse or Setting Current rating Voltage rating

Rated residual operating current $I_{\Delta n}$ = mA and operating time of ms (at $I_{\Delta n}$)
(applicable only where an RCD is suitable and is used as a main circuit-breaker)

Building Control ***Electrical Report***

For compliance with Building Regulations Part P

NOTES:

1. This Building Control Electrical Report form shall only be used for the reporting on the condition of an electrical installation, where the work **has not been undertaken** by a Competent Person on a self certification scheme approved by the Secretary of State.

2. The Report, normally comprising at least three pages, shall include schedules of both the inspection and the test results and is only valid if a Schedule of Inspections and a Schedule of Test Results are appended.

3. The maximum prospective fault current recorded should be the greater of either the short-circuit current or the earth fault current.

4. The 'Extent and Limitations' box shall fully identify the elements of the installation that are covered by the report and those that are not, this aspect having been agreed with the Building Control department before the final inspection, testing and verification is carried out.

5. The time interval recommended for the next periodic inspection and testing shall be given. The IEE Guidance Note 3 provides guidance on the maximum interval between inspections for various types of buildings.

6. All faults found on the Initial Inspection, must be rectified before the Final Inspection, Test and Verification takes place and, if satisfactory, a Building Control Completion Certificate issued.

Minimum Terms of Contract for the Electrical Inspector

The Electrical Inspector must be working as (or for) a member company of a DCLG licensed Part P Competent Person Self Certification Scheme.

The Electrical Inspector must personally hold an Electrical NVQ Level 3 qualification (or equivalent) plus an up to date[1] qualification on BS7671, plus an up to date[1] qualification on Design Verification, Inspection, Testing and Certification procedures, as recommended by the edition of BS7671, current at the time of the Inspection and Certification.

The Electrical Inspector must be covered by £250,000 worth of Professional Indemnity Insurance.

This is not an independent third party Electrical Inspection and no Electrical Certificate must be issued, the Electrical Inspector is working solely as an agent of the Local Authority and must not leave a copy of this Electrical Report at the property.

(1) Gained within five years of the date of the Inspection and Certification.

Building Control *Electrical Report*

For compliance with Building Regulations Part P.
Can be used for new installations, additions or alterations. Please complete all the unshaded areas.

LABC

5 Inspector to record their observations in the 1st column below during the 'first fix' visual check and any ommisions or corrected non-conformances, recorded in the 2nd column below either by a revisit or by the Electrical Inspector, during the final inspection.

	1st Fix		2nd Fix		Schedule of Inspections
	Inspected	Rectified	Inspected	Rectified	
1					Installation Design Specification is available for the Installer and the Inspector
2					Main System Earth lead is present, securely connected and a label fitted
3					Main System Earth lead of the correct size
4					Protective Bonding Conductors present at: Gas ☐ Water ☐ Other ☐
5					Protective Bonding Conductors correctly sized
6					Protective Bonding Conductors securely connected and a label fitted
7					Consumer Unit position accessible and where specified on the design
8					Correct Circuit Protection Devices fitted and identified for each circuit
9					Correct Cable type and size used, allowing for external influences
10					Cable in 'safe' zones and mechanically protected or RCD fitted
11					Cables securely fastened or in appropriate wiring protection systems
12					All Cable cores correctly identified at joints and in accessories
13					All cable joints correctly terminated, secure and accessible
14					Modifications to the Building Fabric appropriate and safe (Structure)
15					Modifications to the Building Fabric appropriate and safe (Fire)
16					All Accessories correctly placed as per Approved Document M and BS 8300
17					Appropriate Supplementary Bonding present and adequately sized
18					Supplementary Bonding securely connected and a label fitted if required
19					All appropriate circuits are protected by a 30mA RCD
20					All Accessories have environmental protection appropriate for external influences
21					All covers replaced, Accessories secure and neatly aligned
21					The number of points and their location agree with the original design
23					Circuit details correct on the installation schedule
24					Periodic Label, RCD label and other Safety Labels fitted

		Schedule of Test
25		External earth loop impedance
26		Installation earth electrode
27		Prospective short circuit current
28		Continuity of Earth Conductors
29		Continuity of Circuit Protective Conductors
30		Continuity of Supplementary Bonding Conductors
31		Insulation Resistance between Live conductors
32		Insulation Resistance between Live conductors & earth
33		Polarity (Prior to Energisation)
34		Polarity (After Energisation)
35		Earth fault loop impedance
36		Residual current devices
37		Functional testing of devices

The sections above are – Satisfactory (✓), Not Satisfactory (X), Not Checked (N/C) or Not Applicable (N/A)

Name – First Fix:		Title
Signature	Date / /	*See separate report page(s)*
Name – Second Fix:		Title
Signature	Date / /	*See separate report page(s)*

SCHEDULE(S)

The attached Schedule(s) are part of this document and this Report is valid only when they are attached to it.

☐ Schedule of Test Results are attached.

Building Control ***Electrical Test*** Sheet

For compliance with Building Regulations Part P.
Can be used for new installations, additions or alterations.
Please complete all the unshaded areas.

LABC

6

Complete in every case

Location of distribution board

Distribution board designation

Number of ways

Complete only if the distribution board is not connected directly to the origin of the installation

Supply to distribution board is from

No. of phases

Nominal Voltage V

Overcurrent protective device for the distribution circuit:

Associated RCD (if any): BS (EN)

Type BS(EN)

Rating A

RCD No. of Poles

$I_{\Delta n}$ mA

Characteristics at this distribution board

Z_{db} Ω

Operating times of

At $I_{\Delta n}$ ms

I_{pf} k A

associated RCD(if any)

at 150 mA ms

Test instrument number

Earth fault loop imped.

RCD

Insulation resistance

Other

Continuity

Other

7

CIRCUIT DETAILS													TEST RESULTS																		
Circuit No. and phase	Circuit description	Type of wiring	Ref. method	No. of points served	Circuit conductors csa		Maximum disconnection time (BS:7671)	Overcurrent protective devices BS:Type			RCD operating current $I_{\Delta n}$	BS7671 Max. permitted value Z_s	Continuity						Date of test	Insulation resistance			Polarity	Maximum measured Z_s	Date of test	RCD testing	
					Live (mm²)	CPC (mm²)		Type No.	Rating (A)	Short circuit capacity (kA)	(mA)	Other Ω	Ring final circuits only (measured end to end) r_1	r_N	r_2	Figure 8 check (✓)	All circuits to be complete R_1+R_2	R_2		Between live conductors (MΩ)	Phase / Earth (MΩ)	Neutral / Earth (MΩ)				at $I_{\Delta n}$ ms	X5 ms
							(S)												(Dead)				(✓)	(Ω)	(Live)		

Wiring Types: **A** PVC/PVC **B** Single insulated in conduit or trunking **C** Mineral Insulated **E** XIpe/Swa **D** BS:7629-1 (FP200) **F** Other

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Comments on installation

See attached sheets page(s) of