

An aerial night view of a city skyline, likely London, with the Petronas Towers and the London Eye visible. The image is overlaid with a complex network of glowing blue and purple lines, representing a digital or electrical network.

Safe Electric

Adding New Electrical Work to Existing Installations

Neale Dalton & John Cotter from Safe Electric | 24/06/2025





Neale Dalton

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With over two decades in the electrical industry, Neale Dalton is the Inspections and Technical Coordinator at Safe Electric. Starting his career in 2001, Neale has developed extensive expertise in electrical systems. Since joining Safe Electric as an Inspector in 2019, his background in contracting has enhanced audits and compliance processes. In 2023, Neale transitioned to his current role, where he now leads the inspection team and coordinates technical operations. He has also recently finished his final year of an Electrical Engineering degree at TU Dublin, further solidifying his technical knowledge. Neale's leadership and training skills are evident in his contributions to industry forums and webinars, driving Safe Electric's objectives with authority and dedication.



John Cotter

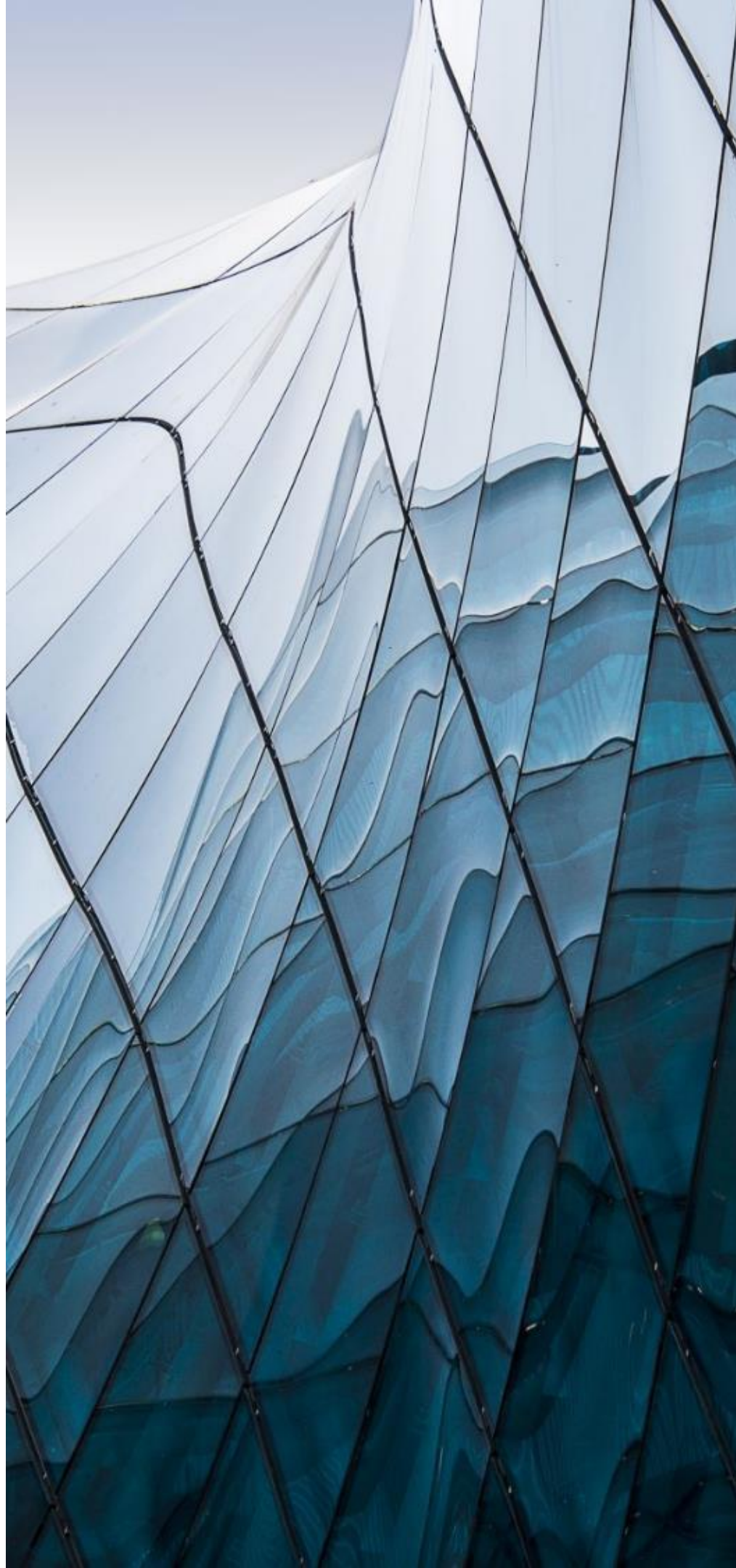
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Since 2016, I have been a dedicated Safe Electric inspector for the Cork and Waterford regions, ensuring compliance with the National Rules for Electrical Installations (IS10101). With a keen eye for regulation and implementation, I play a vital role in maintaining high standards of electrical safety and enforcement.

Beyond inspections, I actively research and have created informative content for the Safe Electric YouTube channel, helping to educate electricians and the public on best practices, safety guidelines, and regulatory updates. I would like to think that my commitment to knowledge-sharing and industry compliance continues to make a significant impact on electrical safety in Ireland.



Agenda



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Introduction

In this presentation we would like to inform what may be required from your Registered Electric contractor (REC) prior to getting any additional electrical installations works carried out. Due to increased loads, it is a necessity that the existing installation is considered.

- PV system
- EV charger
- Heat pumps
- Home Extension



What is Safe Electric?

Safe Electric is the regulatory body responsible for overseeing the activities of electrical contractors in the Republic of Ireland. Its primary focus is on ensuring safety and compliance with national standards for electrical installations which is currently IS 10101 national rules for electrical installations.

Safe Electric maintains a register of all Registered Electrical Contractors (RECs) and conducts audits and inspections to ensure these contractors adhere to the relevant technical rules.





Regulation through certification

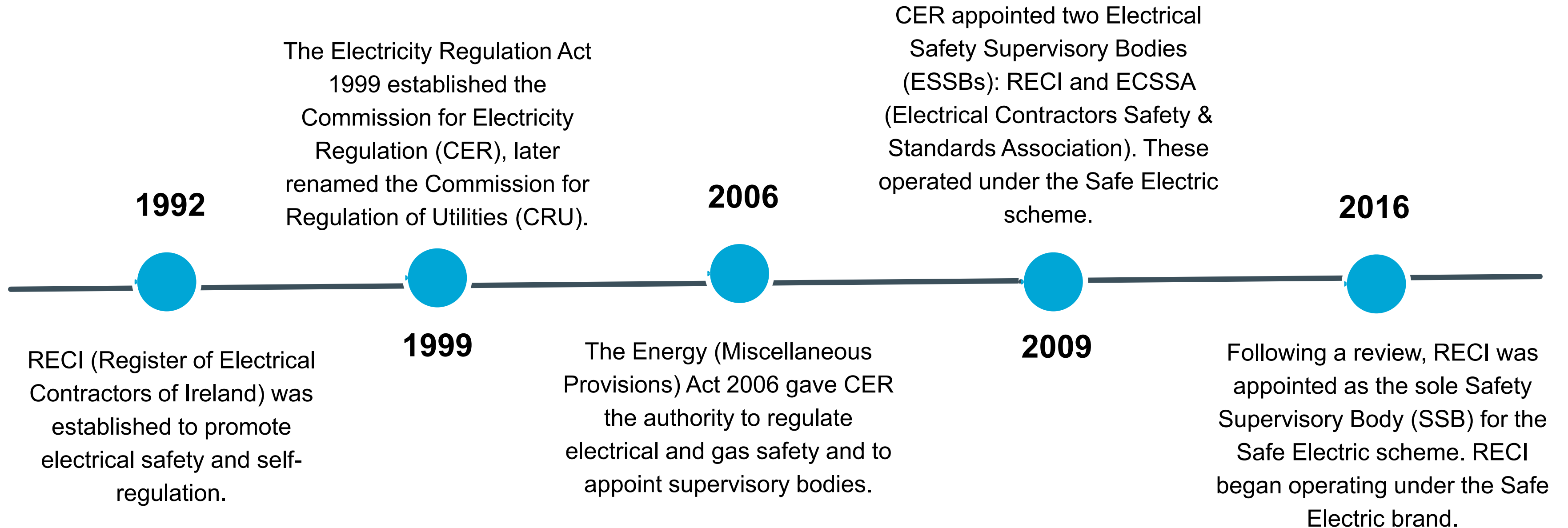
“Certification is fundamental to the effective operation of the Regulatory System, insofar as it is the thread that links the work of the REC on the ground to the overall regulatory objective and certifies that the Controlled Work has been carried out in accordance with the Technical Rules”.(Criteria Document)



Role of Safe Electric

- **Regulation and Oversight:** Safe Electric monitors the activities of electrical contractors to ensure they meet safety standards and comply with national regulations.
- **Registration:** It maintains a comprehensive register of qualified and insured electrical contractors, ensuring that only those who meet stringent criteria can operate legally.
- **Audits and Inspections:** Regular audits and inspections are conducted to verify that contractors are following the required technical rules and safety standards.
- **Disciplinary Actions:** When necessary, Safe Electric takes disciplinary actions against contractors who fail to comply with regulations, ensuring accountability and safety.
- **Customer Support:** Safe Electric provides support and guidance to customers, helping them find registered contractors and addressing any concerns related to electrical work.

Timeline



Timeline

Safe Energy Ireland, a new entity fully owned by SGS Ireland, officially began operating as the single Safety Supervisory Body (SSB) for both schemes. It now manages the Safe Electric and RGI schemes under CRU oversight. The contract is for 5 years, with two possible 1-year extensions.

September 2022

The CRU announced that, following a competitive tender, SGS Ireland was awarded the contract to operate both the Safe Electric and Registered Gas Installer (RGI) schemes.

January 2023

FUTURE OUTLOOK

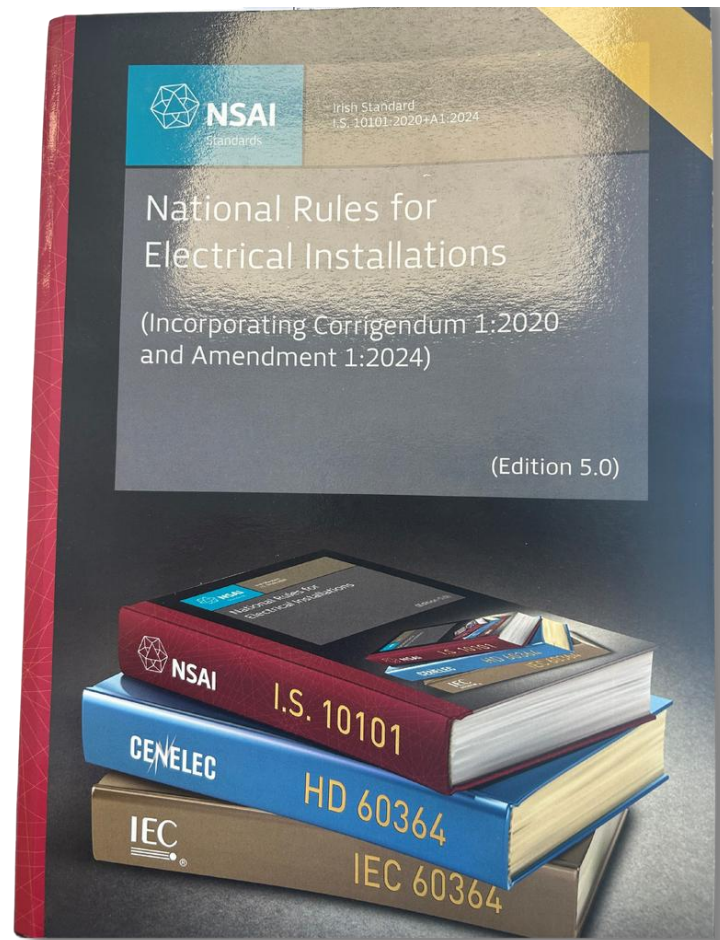
Under a CRU directive, the supervisory scheme must go to public tender every 7 years, with the possibility of extension and potential renewal through a new tender process.



Adding New Electrical Work to Existing Installations

- As Ireland continues to modernise its housing and commercial infrastructure, the demand for upgrading and expanding existing electrical installations has grown significantly.
- Whether it's for home renovations, energy efficiency upgrades, or integrating new technologies like EV chargers and solar PV systems, Registered Electrical Contractor (RECs) are increasingly tasked with adding new circuits or additional green appliances to existing installations.
- Under the **Safe Electric scheme**, all RECs must adhere to the **I.S. 10101 National Rules for Electrical Installations**. These rules emphasise **safety, compatibility and compliance** when modifying existing installations.

Adding New Electrical Work to Existing Installations Clauses from IS 10101



134.1.9: In the case of an addition or alteration to an existing installation, it shall be determined that the rating and condition of existing equipment, which will have to carry any additional load, is adequate for the altered circumstances. Furthermore, the earthing and bonding arrangements, if necessary for the protective measure applied for the safety of the addition or alteration, shall be adequate.


6.4.1.5: It shall be verified that an extension, addition or alteration to an existing installation complies with the I.S. 10101 and does not impair the safety of that installation, and that the safety of the new installation is not impaired by the existing installation”.

Date_____

Periodic Inspection Report for an Electrical Installation

PR No: _____

REGISTERED CONTRACTOR DETAILS :
Name _____
Address _____
Reg No. _____


Installation Approx Age _____

INSTALLATION DETAILS:
Occupant Name/Trading as _____
Address _____
Occupant In Attendance ? Yes No

PLEASE CIRCLE ANSWERS OR TICK BOXES AS APPROPRIATE

Installation Category? Domestic ☐ Commercial ☐ Industrial ☐ Other (specify) _____
Reason for Inspection? Insurance Inspection ☐ Safety Audit ☐ If Other (specify) _____
Extent of Installation covered by this report? Entire Installation* ☐ YES ☐ NO (see partial inspection details below)
* N.B. Cables concealed within trunking and conduits within the fabric of the building or underground have not been inspected unless stated otherwise.
If partial inspection Specify what part the report refers to _____

TYPE OF SYSTEM EARTHING : TNCS, TT, TNS, IT
Installation voltage Single Phase ☐ Three Phase ☐ L 1. v L 2. v L 3. v L 1-L2 v L2-L3 v L 3-L1 v
Max prospective S/C current ____ A Main Isolation** and overcurrent device type ? NONE ☐ SWITCH FUSE ☐ MCB ☐ MCCB ☐
Nominal rating _____ A ** If a main RCD is used as a main isolating device the following details are required Rated current I_n _____ A
Tripping current I_{Δn} _____ mA

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Periodic Inspection Report (PIR)

A **Periodic Inspection Report (PIR)** is a report outlining the condition of an existing electrical installation on the day the inspection was carried out.

Reports are based on requirements outlined in the National Wiring Rules for Electrical Installations

Reports can only be carried out by Safe Electric Registered Electrical Contractors

6.5.1.5

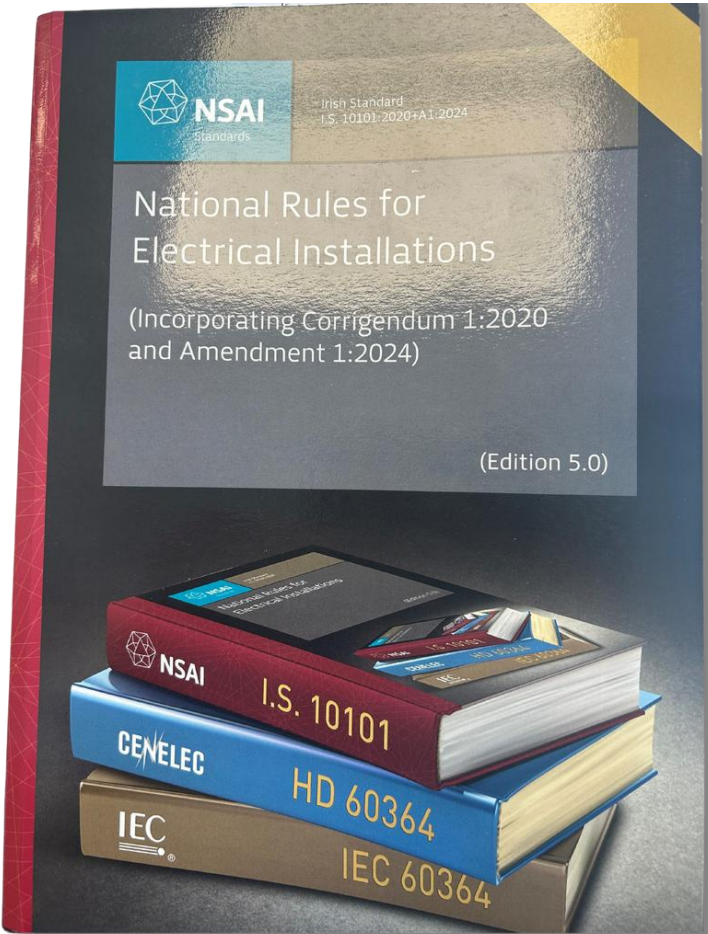
The verification shall be made by a skilled person, competent in verification.

NOTE

Requirements concerning qualifications are defined by the Commission for Regulation of Utilities (CRU).

The interval between reports may be based on recommendations outlined in the HSA “*Guidance-Note on Periodic Inspection and Testing of electrical installations*”.

The Rec shall inform the customer when the next periodic inspection is recommend based on their expertise and the condition of installation.



Guidance-Note on Periodic Inspection and Testing of Electrical Installations

required by the 2007 Safety Health and Welfare at Work (General Application) Regulations


November 2014


Introduction

Electrical installations, if not properly maintained, can kill, injure and cause serious property damage. In Ireland, people are killed almost every year from contact with, or as a result of electricity. This Guidance-Note aims to assist employers, employees and others put in place a suitable regime for periodic inspection and testing of electrical installations to reduce the possibility of harm arising from the electrical installation in a workplace.

What Aspects of the Electrical Installation are covered?

An installation could vary from a standard small 230 Volt single phase electrical wiring system with distribution boards, lighting and general services to, in certain instances, arrangements involving three-phase high-voltage switch-gear, transformers and associated parts of the electrical installation in a major industrial or commercial environment. Systems such as Fire Alarm, Emergency Lighting and Security Alarms have detailed requirements set out in Irish Standards IS 3217, IS 3218 and IS-EN 50131 respectively. These requirements should be adhered to and will not be covered further in this Guidance.





Guidance-Note on Periodic Inspection and Testing of Electrical Installations required by the 2007 Safety Health and Welfare at Work (General Application) Regulations

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HSA Guidance - Note: Suggested Period between Inspections

This Document is also referred to in the Wiring Rules

Guidance-Note on Periodic Inspection and Testing of Electrical Installations

required by the 2007 Safety Health and Welfare at Work (General Application) Regulations

November 2014

Introduction

Electrical installations, if not properly maintained, can kill, injure and cause serious property damage. In Ireland, people are killed almost every year from contact with, or as a result of electricity. This Guidance-Note aims to assist employers, employees and others put in place a suitable regime for periodic inspection and testing of electrical installations to reduce the possibility of harm arising from the electrical installation in a workplace.

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Type of Workplace	Suggested Period between Visual Check	Suggested Period between Inspection & Testing
Commercial	1 year	5 years
Educational establishments	1 year	5 years
Hospitals	1 year	5 years
Industrial	1 year	3 years
Residential accommodation	1 year	5 years
Offices	1 year	5 years
Shops	1 year	5 years
Laboratories	1 year	5 years
Agricultural / Horticultural	1 year	3 years
Cinemas	1 year	3 year
Leisure complexes(excluding swimming pools)	1 year	3 years
Restaurants / Hotels	1 year	5 years
Theatres	1 year	3 years
Public houses / Bars	1 year	5 years
Marinas	4 months	1 year
Laundrettes	1 year	1 year
Petrol stations	1 year	3 years
Construction sites	3 Months	6 Months



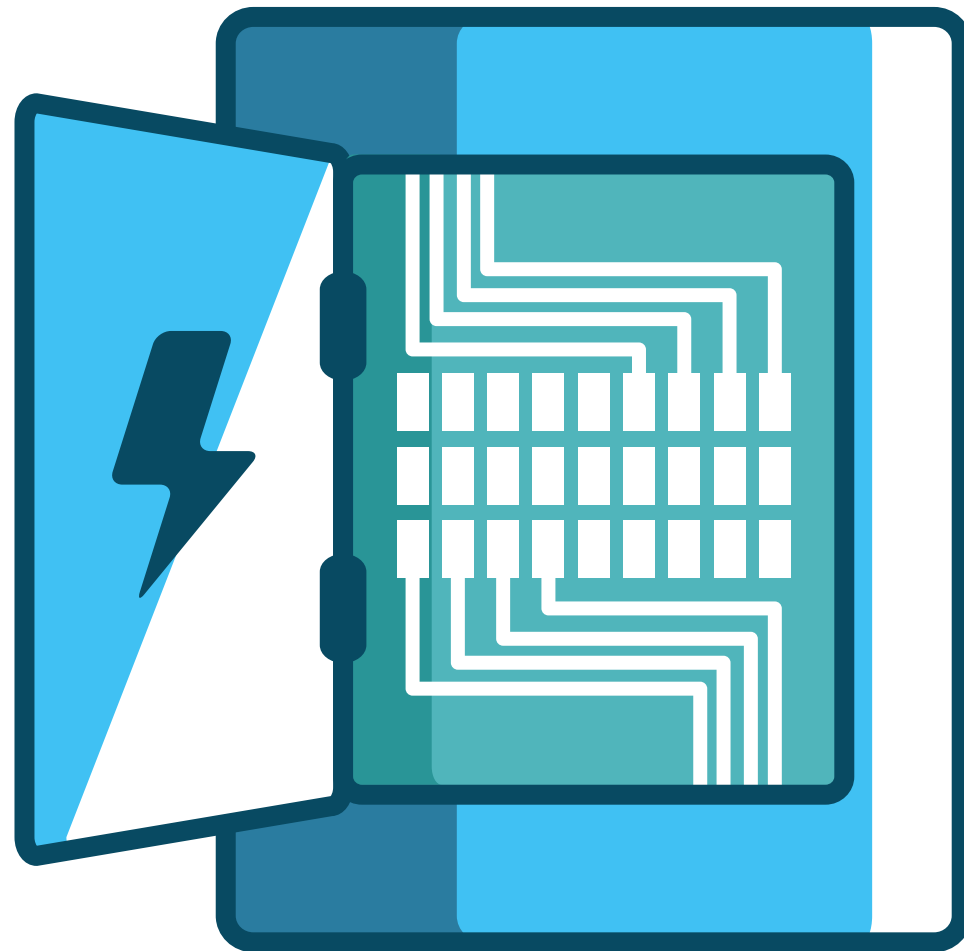
7 Reasons why an inspection may be necessary

To provide for: Extract taken from IS 10101 6.5.1.2



- a) the safety of persons and livestock against the effects of electric shock and burns,
- b) protection against damage to property by fire and heat arising from an electrical installation defect,
- c) confirmation of correct rating and setting of protective devices required by Part 41,
- d) confirmation that the installation is not damaged or deteriorated so as to impair safety,
- e) the identification of installation defects and non-compliances with the requirements of the relevant I.S. 10101, that may give rise to danger,
- f) confirmation of correct rating and setting of protective devices, and
- g) confirmation of correct rating and setting of monitoring devices.

Guidance for RECs on Modifications to Distribution Boards, Meter Tails and additions



- RECs working on installations which have not recently had a PIR shall issue a recommendation that a Periodic Inspection Report (PIR) shall be carried out. It should be noted in the comments box on the certificate that this recommendation has been issued.

Guidance for RECs on Modifications to Distribution Boards, Meter Tails and additions

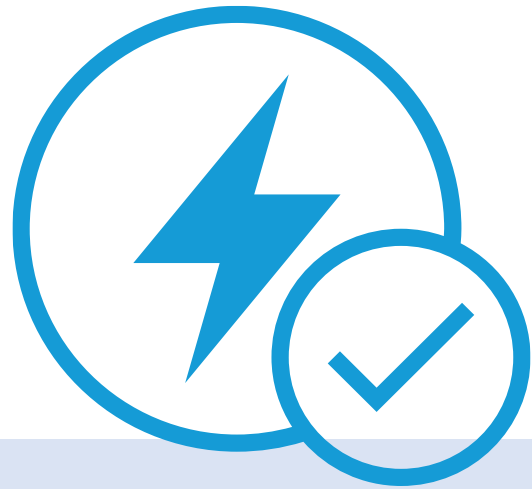
Installation-Wide Consideration

- RECs must assess the entire installation, not just the new or upgraded component.
- A completed Test Record Sheet is mandatory for the new works
- All results must be transcribed onto the completion certificate for the new works.



“6.4.1.5 It shall be verified that an extension, addition or alteration to an existing installation complies with the I.S. 10101 and does not impair the safety of that installation, and that the safety of the new installation is not impaired by the existing installation”.

Guidance for RECs on Modifications to Distribution Boards, Meter Tails and additions



Visual & Electrical Checks

- Visual inspection of the entire installation.
- Polarity verification of all circuits.
- Meter tails must be checked for correct size and suitability.
- Main protective conductor (neutralising link) continuity must be verified.
- Earthing conductor (to electrode) continuity confirmed.
- Confirm equipotential bonding (main, supplementary, local).
- Tighten terminals to manufacturer-specified torque.
- Confirm fuse carriers are tight and gauge rings fitted.
- Use top/rear cable entries—no panel cut-outs.
- Fit blanking plates in all voids.
- Replace all withdrawn or faulty devices (e.g., DZ3 fuses).
- Ensure RCDs/RCBOs are installed where required.
- Test trip times of all RCDs/RCBOs before re-energising.
- Conduct 250V insulation resistance test (Live + Neutral to Earth) per Rule 6.4.1.5.

Guidance for RECs on Modifications to Distribution Boards, Meter Tails and additions(NoPH)

Should any of the above or other hazards identified remain to be sub-standard, the REC shall either **rectify the problem or issue a Notice of Potential Hazard** form to the customer, as **per Section C clause 4.7 page 76** of the criteria Document, and proceed with the certification of the new works.

“4.7.1 Where the REC discovers what he/she considers to be an unsafe installation that REC shall inform the customer or the person responsible for the premises/installation and the SSB, by immediately issuing a “Notice of Potential Hazard” form”.

Safe Electric Certificates ECS

Cert 1

Page 3 of 4

Certificate No ARE:

SAFE ELECTRIC **ELECTRICAL INSTALLATION COMPLETION CERTIFICATE No. 1 <50kVA**
VERIFICATION FOR ELECTRICAL INSTALLATION – I.S. 10101 Chapter 6

Number of: Light Points Socket outlets Fixed Appliance outlets

POLARITY AND EARTHING OF ALL OUTLETS
OUTLETS VERIFIED (a tick indicates yes) ☐

MAIN EQUIPOTENTIAL BONDING VERIFIED FOR

tick all 3 boxes YES N/A
GAS ☐ ☐
WATER ☐ ☐
OTHER (specify) ☐

Pre-Connection Test Results

MAXIMUM RESISTANCE OF PHASE AND PROTECTIVE CONDUCTOR (Rp + Re)	<input type="text"/> Ω
MAXIMUM RESISTANCE OF PROTECTIVE CONDUCTOR (Re)	<input type="text"/> Ω

MINIMUM INSULATION RESISTANCE MΩ

Post-Connection Test Results

MAXIMUM FAULT LOOP IMPEDANCE Ω → RATING & TYPE OF THE ASSOCIATED PROTECTIVE DEVICE

OPERATION OF ALL RCDS VERIFIED (tick) ☐ Max Trip Time of RCD 1 x IΔn mS
Max Trip Time of RCD 5 x IΔn mS

DETAILS OF THE TESTS ARE GIVEN IN THE ATTACHED TEST RECORD SHEET.

Certification of Sub Systems YES ☐ NO ☐

DESCRIPTION OF THE WORK AND SERIAL NUMBER OF ANY SUBSYSTEM
CERTIFICATE NUMBER 3 PROVIDED BY A REGISTERED ELECTRICAL SUBCONTRACTOR.

To comply with Rule 6.4.4.2 following certification of service alterations or MIC upgrades to existing installations, please detail recommendations for repairs and improvements, as may be appropriate.

This Certificate is valid when Circuit Details outlined in associated Test Record Sheet is attached.

Cert 2

Page 3 of 4

Certificate No BRE:

SAFE ELECTRIC **ELECTRICAL INSTALLATION COMPLETION CERTIFICATE No. 2 >50kVA**
VERIFICATION FOR ELECTRICAL INSTALLATION – I.S. 10101 Chapter 6

TYPE	KW	TYPE	KW	OTHER EQUIPMENT	KW
LIGHTING LOAD	<input type="text"/>	TRANSFORMERS LOAD	<input type="text"/>		<input type="text"/>
SOCKET LOAD	<input type="text"/>	GENERATORS	<input type="text"/>		<input type="text"/>
HEATING LOAD	<input type="text"/>	LIFTS LOAD	<input type="text"/>		<input type="text"/>
MOTORS LOAD	<input type="text"/>				

POLARITY AND EARTHING OF ALL OUTLETS
OUTLETS VERIFIED (a tick indicates yes) ☐

MAIN EQUIPOTENTIAL BONDING VERIFIED FOR

tick all 3 boxes YES N/A
GAS ☐ ☐
WATER ☐ ☐
OTHER (specify) ☐

Pre-Connection Test Results

MAXIMUM RESISTANCE OF PHASE AND PROTECTIVE CONDUCTOR (Rp + Re)	<input type="text"/> Ω
MAXIMUM RESISTANCE OF PROTECTIVE CONDUCTOR (Re)	<input type="text"/> Ω

MINIMUM INSULATION RESISTANCE MΩ

Post-Connection Test Results

MAXIMUM FAULT LOOP IMPEDANCE Ω → RATING & TYPE OF THE ASSOCIATED PROTECTIVE DEVICE

OPERATION OF ALL RCDS VERIFIED (tick) ☐ Max Trip Time of RCD 1 x IΔn mS
Max Trip Time of RCD 5 x IΔn mS

DETAILS OF THE TESTS ARE GIVEN IN THE ATTACHED TEST RECORD SHEET.

Certification of Sub Systems YES ☐ NO ☐

DESCRIPTION OF THE WORK AND SERIAL NUMBER OF ANY SUBSYSTEM
CERTIFICATE NUMBER 3 PROVIDED BY A REGISTERED ELECTRICAL SUBCONTRACTOR.

To comply with Rule 6.4.4.2 following certification of service alterations or MIC upgrades to existing installations, please detail recommendations for repairs and improvements, as may be appropriate.

This Certificate is valid when Circuit Details outlined in associated Test Record Sheet is attached.

Cert 3

Page 3 of 4

Certificate No CRE:

SAFE ELECTRIC **ELECTRICAL INSTALLATION COMPLETION CERTIFICATE No.3**
VERIFICATION FOR ELECTRICAL INSTALLATION – I.S. 10101 Chapter 6
(This certificate cannot be used to obtain an ESN connection or reconnection)

Number of: Light Points Socket outlets Fixed Appliance outlets

POLARITY AND EARTHING OF ALL OUTLETS
OUTLETS VERIFIED (a tick indicates yes) ☐

MAIN EQUIPOTENTIAL BONDING VERIFIED FOR

tick all 3 boxes YES N/A
GAS ☐ ☐
WATER ☐ ☐
OTHER (specify) ☐

Pre-Connection Test Results

MAXIMUM RESISTANCE OF PHASE AND PROTECTIVE CONDUCTOR (Rp + Re)	<input type="text"/> Ω
MAXIMUM RESISTANCE OF PROTECTIVE CONDUCTOR (Re)	<input type="text"/> Ω

MINIMUM INSULATION RESISTANCE MΩ

Post-Connection Test Results

MAXIMUM FAULT LOOP IMPEDANCE Ω → RATING & TYPE OF THE ASSOCIATED PROTECTIVE DEVICE

OPERATION OF ALL RCDS VERIFIED (tick) ☐ Max Trip Time of RCD 1 x IΔn mS
Max Trip Time of RCD 5 x IΔn mS

DETAILS OF THE TESTS ARE GIVEN IN THE ATTACHED TEST RECORD SHEET.

COMMENTS FOLLOWING CERTIFICATION FOR ALTERATIONS OR ADDITIONS TO EXISTING INSTALLATIONS
To comply with Rule 6.4.4.2 please detail recommendations for repairs and improvements, as may be appropriate.

This Certificate is valid when Circuit Details outlined in associated Test Record Sheet is attached.

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Circuits least one sum to be completed)		Ring Circuit End to End			MIN INSULATION RES. (MEG OHMS) Rule 6.4.3.3			Phase (V)
+	Re**	L-L	N-N	E-E	Phase & Neutral to Earth (MEG)	Phase Neutral (MΩ)	Phase to Phase (MΩ)	
	.03	N/A	N/A	N/A	500	/	/	✓

Guidance for RECs on Modifications to Distribution Boards, Meter Tails and additions

Commercial / Industrial / Agricultural Electric Installations



RECs working on installations in the categories above, shall issue a recommendation that a Periodic Inspection Report (PIR) shall be carried out in accordance with IS 10101. It should be noted in the comments box on the certificate that this recommendation has been issued.

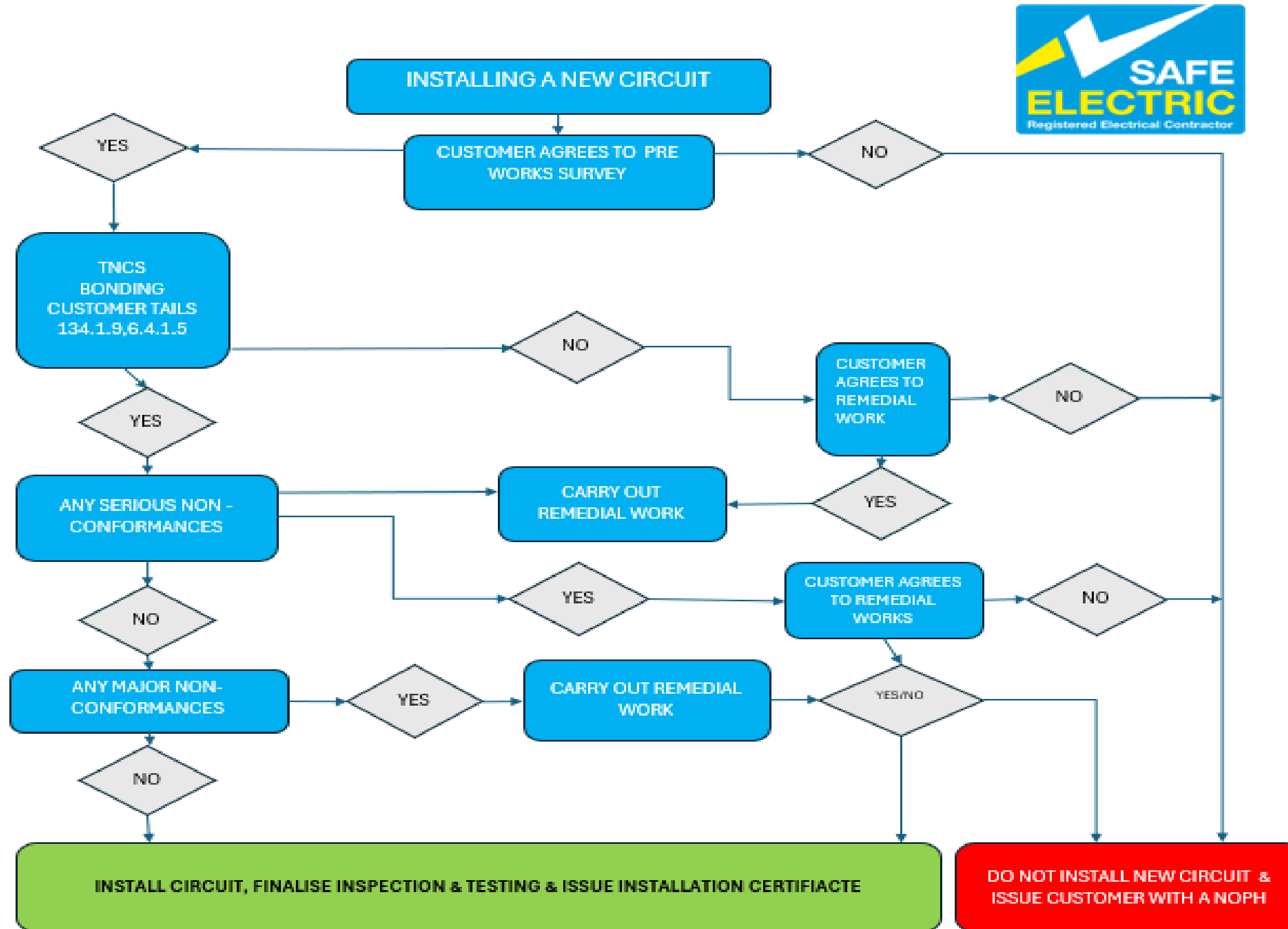
Guidance for RECs on Modifications to Distribution Boards, Meter Tails and additions



REC Duties & Safe Electric Oversight

Registered Electrical Contractors are required to comply with the listed requirements, which have been introduced in the interests of safety, and to assist the person responsible for the installation to be aware of potential pre-existing faults in the existing circuits. Safe Electric will oversee the implementation of these requirements to ensure full compliance.

Addition to existing installation matrix





Questions?

Thank you!

Do you have any questions? Reach out to us!

- info@safeelectric.ie
- (091) 480974
- www.safeelectric.ie

