



Safe Electric, the statutory regulatory scheme for electrical contractors is operated by the Register of Electrical Contractors of Ireland (RECI) on behalf of the Commission for Regulation of Utilities (CRU).

RECI was appointed as a Safety Supervisory Body by the CRU and will operate on a not-for-profit basis under the CRU's Safe Electric brand for the duration of their appointment, 2016 – 2022.

2019

SAFE ELECTRIC DECEMBER NEWSLETTER

Newsletter

Message from the General Manager, RECI

Each day we work to ensure that customers who engage the professional services of a Registered Electrical Contractor can rely on the electrical works completed to be safe in operation and to be commissioned to comply with the regulated national wiring standards.

Our customers rely on the Safe Electric Scheme to underpin that commitment to safety and standards. Recent national surveys undertaken show that customers have confidence and trust in Registered Electrical Contractors, working under the Safe Electric brand, to complete electrical works safely and to the strict requirements of the national regulations. This is heartening news indeed.

A key part of the professional service that customers expect from Registered Electrical Contractors is their ability to commission and test electrical installations competently and to maintain records of these tests, as evidence that all safety measurements and checks were performed correctly. This is why Safe Electric inspectors put such an emphasis on these tests, checks and records when conducting the National Inspection Programme each year. Thank you for playing your part in this by cooperating in making nominated examples of electrical works, and records, completed by you available for inspection and audit, when requested.

The coming year, 2020, will see a new edition of the National Rules for Electrical Installations (I.S. 10101) launched. It also coincides with new policies being introduced by government to transition existing energy systems and fuels supplying Irish households, businesses, industries and transportation to meet the growing challenges of Climate Change.

I wish to assure Registered Electrical Contractors that we will be working to keep you abreast of these developments as they impact on the safety and regulation of electrical works that you commission and complete for customers.

Finally, on behalf of the RECI Board of Directors and all of us in RECI/ Safe Electric, I wish you, and your loved ones, a safe and peaceful Christmas. Nollaig Shona Daoibh.

Pierce Martin,
General Manager

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Christmas Schedule

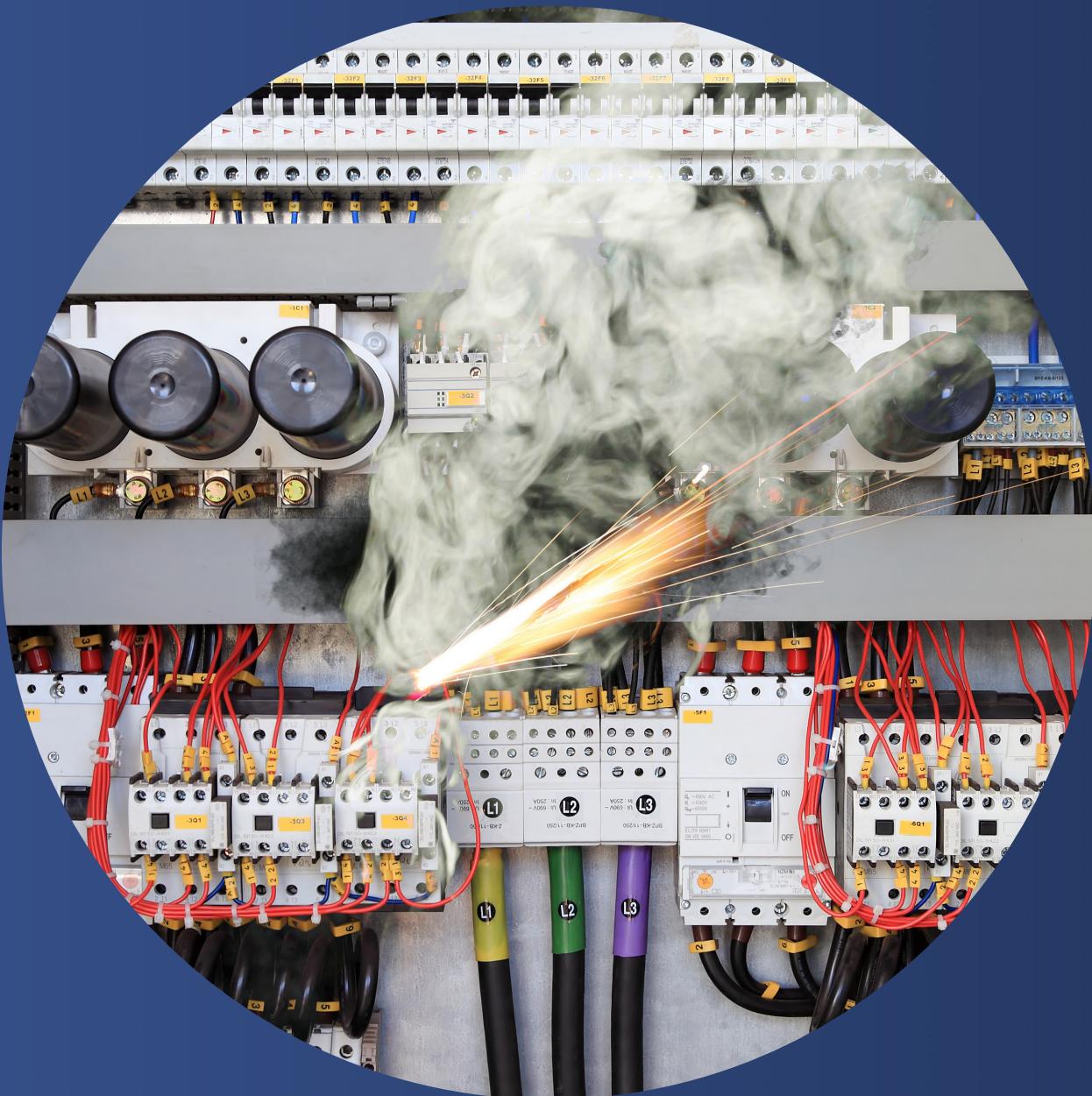
Safe Electric Office will:

Close on Monday 23rd of December at 16:00 pm

AND

Re-open on Thursday 2nd of January 08:30 am





ALWAYS TEST YOUR ELECTRICAL INSTALLATION

The tests outlined in the wiring rules are specifically in place to help the installer identify underlying safety issues that can be lurking in the background and not be easily detectable.

A TESTED INSTALLATION IS A SAFE INSTALLATION



POST CONNECTION TESTING

Part 6 of the wiring rules (Currently ET 101 2008) outlines the specific tests that all Registered Electrical Contractors (RECs) are required to carry out following the completion of any electrical installation. Rule 611.1 states that these tests are also required for any "Subsequent extensions and additions". The results of these tests are then required to be recorded on a Test Record Sheet (Rule 514.5.1) and transferred to the Completion Certificate.

According to the CRU Criteria Document (Section 2) the certification process is not complete unless these Post Connection tests have been carried out and the results submitted to the SSB (Safe Electric). The Criteria Document allows 35 days following connection to complete this process. Please see below extract from Common Procedure 1 of the CRU Criteria Document (Page 128).

Criteria Document Common Procedure 1

(2.9) The Certificate may only be considered fully completed, following return of a copy to the Body with post-connection tests successfully completed and recorded.

(2.10) Common Procedure No 5 - Enforcement will be followed in the event of failure to return a copy of the Certificate with the post-connection tests recorded to the Body.



Currently the REC's Qualified Certifier (QC) is required to carry out 2 Post Connection tests:

- Fault-Loop impedance measurement (613.13)
- Verification of operation of RCDs (613.14)

It is important to understand that the purpose of these Post Connection tests is to verify that in the event of a

future fault, the primary systems for automatic disconnection (MCBs and Fuses) will operate effectively.

Where additional automatic disconnection systems are installed (RCDs and RCBOs) the REC is also obliged to test and verify the operation of these devices.

613.13 LIVE to EARTH FAULT LOOP TESTING

The Fault Loop Impedance test is done between the Live and Earth conductors at the furthest point on each circuit. It is assumed that if the value at the end of the circuit is satisfactory and within limits, it is also within limits for all outlets or points on the circuit. Notwithstanding this it would always be good practice to test all points on a circuit.

The test equipment will measure the Impedance / Resistance back through the circuit to its source which is

the Network Transformer. Impedance is the equivalent of Resistance for AC circuits. Most modern test meters can carry out this test using a low current to avoid tripping RCDs. Because of "Ohms Law" which states that the Voltage, the Resistance / Impedance and the current are proportionally interlinked, we can then ensure that enough current is generated to automatically disconnect the circuit by blowing the fuse or tripping the MCB. There is a chart in the rules which specifies the limits for all common devices.

**TABLE A61C-1: MAXIMUM VALUES OF FAULT-LOOP IMPEDANCE Z_L FOR 230 V A.C.CIRCUITS WITH RATINGS NOT EXCEEDING 35 A
Maximum disconnecting time: 0.4 s (Table 41A)**

MCBs AND RCBOs

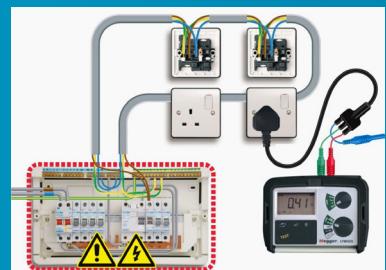
(An RCBO is a combined MCB and RCD)

Type B: General Purpose, Instantaneous tripping current 3 - 5 In.

Type C: Instantaneous tripping current 5 - 10 In.

Type D: Instantaneous tripping current 10 - 20 In.

In is the nominal current setting of the MCB or RCBO



MCB Type B (I.S. EN 60898) and RCBO Type B (I.S. EN 61009-1)

Rating A	6	10	16	20	25	32
Z _L Ω	7.67	4.60	2.87	2.30	1.84	1.44

These values are measured for each circuit and recorded on the RED Section of the Test Record Sheet. We can now be confident that in the event of a future fault the circuit will disconnect automatically in the required time.

This time is specified under the rules and must be a maximum of 0.40 of a second. For MCBs and Fuses

exceeding 35 amps the required disconnection time is 5 seconds or less.

It would naturally be expected that the highest reading would be achieved on the circuit which has the longest run of the smallest cables.

613.14 RCD TRIP TIME TESTING

In many electrical installations additional levels of protection are provided by Residual Current Devices (RCDs). An RCD compares the current on the outgoing and incoming conductors and if it detects an imbalance of more than the “Rated Current” it automatically disconnects the circuit or circuits.

1. Times $\frac{1}{2}$ the Rated Current of the RCD (15 millamps for a 30 millamp RCD) RCD should not operate (No Trip)
2. Times 1 The Rated Current of the RCD (30 millamps for a 30 millamp RCD) RCD should trip in less than 0.3 of a second (300 milli seconds)
3. Times 5 The Rated Current of the RCD (150 millamps for a 30 millamp RCD) RCD should trip in less than 0.04 of a second (40 milli seconds)

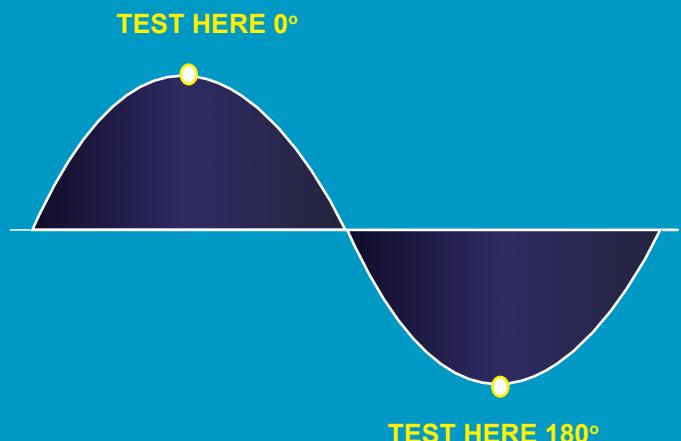
For a 100 millamp RCD these test values would be 50, 100 and 500 millamps but the required trip time limits are always the same.

Test current	$0.5 \times I_{\Delta n}$	$1 \times I_{\Delta n}$	$5 \times I_{\Delta n}$
Maximum operating times	∞ (must not operate)	0.3s (300 ms)	.04s (40 ms)



As we are dealing with AC and the RCD, response time can vary at different sides of the sine wave, we are obliged to carry out each test at both the top and the bottom of the sine wave. Therefore, we are required to test the device twice at each parameter and record the highest (Worst Case) reading. This is done by using the 0- and 180-degrees function on the test equipment. These requirements are outlined in Annex 61G of the current wiring rules.

The “Rated Current” of most RCDs is 30 millamps. The effectiveness of automatic disconnection of supply by the RCD needs to be verified by testing the response time of the RCD. This response time is checked using three parameters:



EFFECT OF INTRODUCTION OF I.S. 10101 5TH EDITION

While the wording requiring completion and recording of Post Connection tests will be different in the future Fifth Edition of the Wring Rules (I.S.10101), the test procedures and required results will in effect remain the

same. The Loop impedance maximum values will be contained in Rule 411.3 and the Tables attached to this section of the new rules. The is also a new requirement to test the phase rotation in three phase installations.

IMPORTANT

No Registered Electrical Contractor can be 100% sure that an Electrical Installation is safe until the Post Connection Tests have been completed and the results have been confirmed to be in compliance with the Wiring Rules.

CURRENT DELAYS BECAUSE OF POST CONNECTION TESTS

Safe Electric have procedures in place to inform RECs when Post Connection Test Results have not been recorded against Completion Certificates. No new Completion Certificates will be processed until all outstanding Post Connection Certificates have been returned within the required timeframe.

Many RECs are currently experiencing delays when attempting to introduce new Certificates into the system as they need to return to installations, carry out the required Post-Connection Tests and submit the test results to Safe Electric. Experience has indicated that the longer the installation has been left live, without the

Post Connection tests being done, the more difficult it can be to obtain access to finish the tests.

RECs can avoid these delays, and further guarantee customer safety by carrying out the Post Connection Tests on the same day as they connect the Meter Tails and make the installation live. This ensures that it would be impossible for your customers to be using an electrical installation in which the Safety Devices might not be operational.





EXAMPLES OF INCOMPLETE INSTALLATIONS WHERE RECs HAVE SUBMITTED COMPLETION CERTIFICATES

Criteria Document Common Procedure 1

One of the key elements of the Regulatory System is the establishment of a Certification System for Electrical Works.

Section 9(D)(5)(b)(vii),(13),(14),(15),(18),(19),(21)(b) and (28) of the Electricity Act 1999 inserted by section 4 Energy (Miscellaneous Provisions) Act 2006 relate to or refer to Certification. Under the Act, Certification is mandatory for all Controlled Works. Also, in the context of new connections/re-connections, Certification is mandatory before the DSO, will connect or energise the connection point.





IMPORTANT NOTICE



To all Registered Electrical Contractors,

We are receiving large numbers of Completion Certificates into the office for installations which are not actually complete.

According to the Criteria Document Common Procedure 1, "Completion Certificates" should only be issued when the entire installation has been actually "completed". Also, it is required that the pre-connection tests have been carried out and the results recorded on a test record sheet.

Safe Electric Inspectors are arriving onto sites where completion certificates have been issued and finding only one or two sockets installed.

The extent of this issue is becoming clear as we move towards focusing our annual inspections on actual certificates submitted. Of course, there will be rare occasions where electrical installations contain only one or two socket outlets, but this will not be the normal.

RECs need to be aware that there is a specific system in place to facilitate Temporary Supplies for construction sites and one-off building projects.

In the rare occasions where a Temporary Supply MPRN number has been applied for and issued, the installation must comply with part 704 of ET 101 2008 and also with the requirements on page 45 of the ESB Customer Interface.

All Registered Electrical Contractors need to be aware that certification is at the core of the system of regulation that we operate in the electrical contracting industry, for the protection of customers and in the interests of public safety.

This regulation ultimately ensures that all electrical works are carried out by Registered Electrical Contractors, protects our customers' and the public's safety interests and enhances our professionalism in the industry.

We are aware that RECs can be put under pressure by their customers and sometimes other industry partners to submit completion certificates early. Please contact your local inspector for advice if pressure is being applied and he will confirm to your customer that the Certificate cannot be issued until the installation is finished. Please be aware that inspections will be increasingly focused on submitted completion certificates.

Following this email notice RECs who are found to submit Completion Certificates for incomplete or untested works could face disciplinary proceedings.

Please note that once the certificate is received by Safe Electric it can take up to 7 working days to be reviewed and processed.

KNOW THE RULES!



Each REC Can Only Issue Certs for Work Carried Out By That REC

In accordance with Common Procedure 1 of the CRU Criteria Document Version 3.0: Completion works Certificate shall be purchased by the Registered Electrical Contractor (REC) from Safe Electric (The Body) and then issued by the REC to the customer for the controlled works carried out by that REC.

Certificates may only be used by the REC to whom they are sold for Controlled Works carried out by him/her, except in exceptional circumstances where prior written approval is given by the Body.

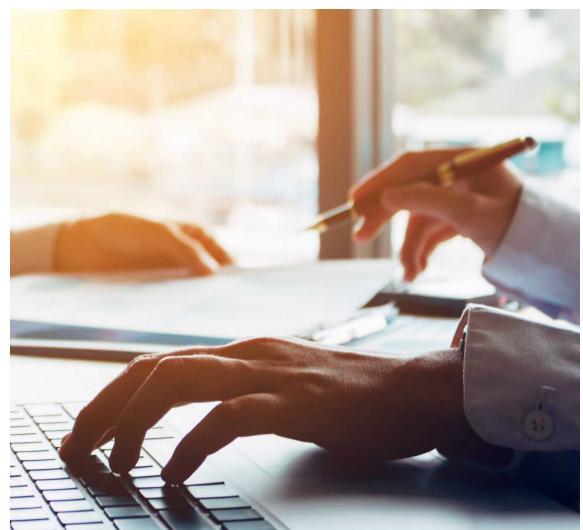
A REC shall not under any circumstance sell, or transfer Certificates to anyone else (including their employees) whether they are a REC or Non-REC. To do so would be in breach of the Rules of Registration and the REC may be subject to the sanctions described in the criteria document and within Safe Electric's rules of registration. Certificates cannot be used for personal use and can only be issued by the REC who purchased the Cert.

Focus on High Risk RECs

One of Safe Electric's Strategic goals is to improve the rate of compliance of a REC with Electrical Safety Regulations, when carrying out Electrical Works. There is currently a particular focus on improving test procedures and improving correct completion of test record sheets.

A new and improved Risk-Based model (RBM) for inspecting electrical wiring installations will be implemented in January 2020. Safe Electric will closely monitor high-risk REC's.

RECs will have a risk level assigned to them based on criteria such as the number of points attained during the last routine inspection. You can avoid being included in the high-risk category by ensuring that your installations fully comply with the rules and also by correctly completing the required paperwork.





Q A person has had their Brother in Law rewire their house and has asked me to test only and certify the installation?

A The CRU Criteria Document requires that each Registered Electrical Contractor is only permitted to certify work which they have carried out themselves. There are two exceptions to this rule:

- (i)Reconnection of an installation which has been disconnected for more than 6 months.
- (ii)The customer has applied for and been granted a change of contractor.

Q I am rewiring a premises and the homeowner wants to keep the light switches at the original height which is above 1200 mm?

A The current wiring rules require that light switches are located between 400mm and 1200mm. There are no exceptions allowed in the wiring rules. The REC has no discretion and must lower the light switches to below 1200mm.

Q Will I get a reminder from Safe Electric warning me that my Qualified Certifier (QC) number is about to expire?

A There is no obligation on Safe Electric to remind RECs that they need to repeat the QC course every 5 years.

Q My Routine Inspection was carried out in September this year, should I expect it be carried out in September again next year?

A Your Annual Routine inspection can be scheduled for any time during the year and might not necessarily occur in the same month the following year.

Q My inspector has found a number of non-conformances during my inspection, a total of 12 points have accrued, will I be charged for the follow up Inspection?

A Your inspector is obliged to carry out a chargeable follow up inspection if you exceed 10 points or more on any inspection.

Q While pricing an attic conversion I have identified that the existing Electric Shower in the premises is not RCD protected.

A You are required to inform the householder that there is a safety issue with their electrical installation. If the householder is willing to pay you to make the installation safe by installing RCD protection that's fine. If not, you should issue a Notice of Potential Hazard.

Top Non-Conformances 2019

Rule Number	Breach
613	Results recorded on the Test Record Sheet do not match readings taken during the inspection. Testing not complete.
613.2.1	Protective Earth conductor not tested, not tested on all circuits, or value recorded not consistent with cable length.
Common Procedure 1	No Safety Supervisory Seal (SSB) seal fitted at ESBN interface.
544.2.8	Metal Sink Draining Board not bonded.
613.3	Insulation Resistance fault identified during inspection, Test not done / not correctly done.
537.5.5	Two circuits at light-switch requires warning notice.
462.2.1	Main isolation not correct.
514.5.1	Test Record Sheets not available / not completed/ not consistent with installation.
530.5.12	Distribution Boards-circuits not correctly identified
526.5.3	Sheaths removed from cables with no mechanical protection
527.2.1	Distribution Boards to be Fire Sealed
613.13	Loop Impedance test not completed / not correctly completed / values not consistent with sample values taken during inspection. REC does not know that limits apply and what the limits are based on.
613.14	RCD tests not correctly done / REC does not know max trip times X1/2 times X1 and times X5

New Subscription Fees

Fee Structure

The Registered Electrical Contractors of Ireland, the Safety Supervisory Body for the Safe Electric Scheme, is introducing its first increases in subscription (annual registration) fees for 11 years in 2020. The increases have been approved by the Commission for the Regulation of Utilities (CRU).

The new fees, set out below, fall due on 1st January 2020 and are payable by credit/debit card, cheque, bank transfer or at the Safe Electric offices at KCR, Kimmage.

Safe Electric look forward to working together with REC's to ensure the safety and standard of electrical work continues to meet the highest safety requirements. We wish to sincerely thank REC's for their valued support and commitment to the scheme over the years. We

are excited to see the scheme continuing to evolve with input from all stakeholders, using new technologies and sound proven practices to meet the highest safety standards in the electrical industry.

Safe Electric would like to take this opportunity to acknowledge the excellent contribution to electrical safety on a daily basis from all Registered Electrical Contractors.

We look forward to continuing to work together regarding our shared goal to deliver the highest safety standards across the industry for the benefit of all our customers.

2020 Fees	New	Increase
1 to 10 Electricians	€354	€59
11 to 50 Electricians	€558	€93
Over 50 Electricians	€834	€139

How to Renew Your Annual Subscription

The format for paying the annual subscription has changed. Please read carefully on how to renew your subscription. Please note that a text message including the invoice number is communicated to each Registered Electrical Contractor, if you have not received this please contact 01-4929966 or email reciinfo@reci.ie.

To Pay:

1. Have your credit/debit card details, your registration number and invoice number on handContact Safe Electric on 01-4929966.
2. Quote the invoice number received via text message
3. Once payment is completed, your membership will be renewed for 2020.
4. If you require a soft or hard copy of the invoice, please contact reciinfo@reci.ie.

Payment Deadline

The deadline for paying the annual subscription fee is **31st January 2020**.

Please make sure that you provide your payment by the deadline, otherwise your registration will be suspended temporarily until the subscription fee is paid.

It is the role of Safe Electric to ensure that all Registered Electrical Contractors (RECs) are operating to the relevant national standards and technical rules. This includes inspecting their work on an ongoing basis and carrying out disciplinary actions where necessary.

Safe Electric hold a register of all RECs. Safe Electric is responsible for the day-to-day operation of the scheme.

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