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ENDING 'SHOCK SILENCE'

CREATING A SAFER FUTURE FOR THE ELECTRICAL INDUSTRY

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ABOUT ETT

Established in 1997, the Electrical Training Trust (ETT) is a Northern Ireland based charity that aims to improve quality and raise standards within the electrical industry.

The charity support individuals, employers, and professionals in the sector to increase knowledge, enhance skills, and prove competence. They do this by providing advice, guidance, and training regarding electrical safety and standards.

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“Electric shocks can lead to severe and life-changing injuries or fatalities. The figures in this report represent real people and real families. It’s time to act.”

FOREWARD

In 2024, ETT undertook an NI-wide Electric Shock Survey, with the aim of examining the frequency, consequences, and reporting practices relating to electric shocks in the workplace. Key findings from the survey, as outlined in this report, reveal some very disturbing statistics, which the industry simply cannot ignore.

The survey revealed 80% of respondents have experienced an electric shock at work, with almost 40% reporting that they have experienced at least three electric shock incidents. Recent research indicates there are long-term health consequences from repeated electrical exposures - even from those deemed to be 'minor'. It is clear we need to take action.

> Electric shocks can lead to severe and life-changing injuries or fatalities. The figures in this report represent real people and real families. It is time to act.

Electric shocks can lead to severe and life-changing injuries or fatalities. Of those survey respondents who have experienced an electric shock, 89% have sustained an injury, with 95% having to take time off work. These figures represent real people and real families, and we thank those who were brave in sharing with us their experiences of painful and often life-limiting or life-changing physical and emotional consequences.

Our industry has a wealth of experienced workers, yet this report highlights even those with extensive experience face avoidable dangers. Most survey respondents reported feeling confident in their knowledge and understanding of the risks and dangers of electricity, yet 4 in 5 have experienced an electric shock at work, and only 26% reported it to their employer.

Our collective behaviour, attitudes, and actions must change. We must address the pressures that often lead to compromising on safety; time pressures and production demands should never outweigh the value of a human life.

This report includes a broad range of key findings and recommendations that have come directly from those in the electrical contracting industry. Through effective collaboration and engagement, we intend to use these findings to develop an industry-supported action plan.

ETT is eager to engage with as many stakeholders as possible to ensure the action plan is robust, practical, and effective to tackle the unacceptable number of electric shocks occurring in our industry and the challenges of underreporting, which we have termed 'shock silence'. Industry stakeholders – from employers to suppliers, and electrical workers to clients – are encouraged to actively engage with ETT to ensure all views are heard.

> Our collective behaviour, attitudes, and actions must change, and we must address the pressures that often lead to compromising on safety; time pressures and production demands should never outweigh the value of a human life.

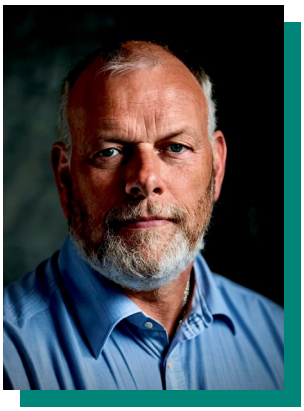
The findings outlined in this report should serve as a wake-up call to all of us. We must prioritise sensible procedures, the proper use of safety equipment, and a culture that encourages openness and reporting.

I urge everyone in our industry – from business owners to experienced electricians, and those in management roles to apprentices who are just starting out – to stop and act. We must invest in a future where every electrical worker can go home safely at the end of each day.

By working together, we can reduce the number of electric shock incidents that have the potential to end a life, and lead our industry towards a safer, more responsible future.

Charlotte Bamber
Chief Executive Officer - Electrical Training Trust

THE HSENI VIEWPOINT



The Health and Safety Executive for Northern Ireland (HSENI) is deeply concerned about the alarming number of electricians experiencing electric shocks and related injuries, as revealed by the findings of the Electric Shock Survey.

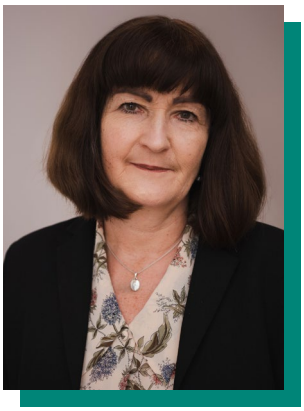
The high level of risk associated with electrical work underscores the urgent need for effective preventive measures. The need for employers to implement robust systems of work and for employees to protect their, and their colleagues, safety is enshrined in law and yet the statistics indicate that many are being subject to unacceptable levels of risk.

HSENI fully supports the Electrical Training Trust (ETT) in their vital work to highlight these dangers and implement strategies to prevent such incidents.

The requirement for employers to provide "information, instruction, and training" is also a key component of health and safety legislation and by raising awareness and providing essential training, ETT is instrumental in safeguarding electricians and promoting a culture of safety within the industry.

Dr. Bryan Monson
Deputy Chief Executive - Health and Safety Executive for Northern Ireland

THE ESF VIEWPOINT



Electrical Safety First (ESF) welcomes the ETT's Ending 'Shock Silence' report on workplace electric shocks and its recommendations to improve electrical safety across the sector. The research reveals a concerning statistic: 80% of respondents report experiencing an electric shock, with many considering these incidents to be an unavoidable occupational hazard - when, in fact, most are preventable with adequate safety practices.

A key finding from the survey was the failure to carry out safe isolation procedures, a significant contributor to workplace shocks. To help address this, ESF is pleased to partner with ETT to provide free lock-off kits to apprentices in Northern Ireland.

The survey also highlights the need for greater training and awareness around electric shock prevention, particularly for apprentices. By providing lock-off kits, we aim to embed safe working practices from the start of an electrician's career and establish safe isolation as an ingrained habit.

Over the past year, ESF has worked with SparkSafe, NICEIC, IET, NAPIT and ECA, along with brands like Super Rod, TIS, and Martindale, to raise awareness about the importance of safe isolation through trade shows, social media, educational videos, and awareness raising campaigns. This collective effort and the provision of lock-off kits are part of a broader suite of free support ESF provides electricians, including ten Best Practice Guides covering topics from Safe Isolation to Electrical Installation Condition Reporting and cross-industry consensus advice on the Wiring Regulations. You can access these resources here: electricalsafetyfirst.org.uk/professional-resources/

Lesley Rudd
Chief Executive Officer - Electrical Safety First

INTRODUCTION

Electricity is an essential part of our everyday lives. From powering homes and businesses to enabling advancements in technology, electricity plays a vital role in our society.

The electrical contracting industry is a significant contributor to Northern Ireland's economy, employing thousands of individuals, from electricians and apprentices to electrical engineers and project managers. These roles are not just found in electrical contracting. Apprentices and qualified workers in electrical-related installation and maintenance roles are common in the diverse manufacturing and engineering sectors, amongst others.

As we work towards a low carbon future and net zero emissions by 2050, electricity will become even more important. However, with our increased reliance on electricity, the potential dangers associated with its usage are often overlooked. Electrical safety is a critical issue that impacts workplaces, homes, and public spaces.

In 2023, ETT teamed up with Super Rod to help raise awareness of the 'Save Our Sparks' safe isolation campaign. The campaign was inspired by 'Michael's Story'. Michael Adamson was a 26-year-old experienced electrician who tragically died in a preventable workplace electrical incident in 2005.

Whilst undertaking the campaign, it became apparent there was a lack of data and information relating to electric shock incidents, the reporting of incidents, and the consequences of electric shock – especially as it relates to Northern Ireland.

To better understand the situation, ETT developed and launched an Electric Shock Survey in 2024, which asked electrical workers to provide their insights and feedback in relation to electrical safety procedures and practices. The findings of the survey are presented in this report.

Some of the findings from the "Save Our Sparks" 2023 NI Safe Isolation survey are highly concerning:

- **Over 30% of respondents say they rarely or never use a Lock Out Kit to isolate the electrical supply they are working on.**
- **1 in 60 don't use any test equipment to ensure there is no charge.**
- **Even more worrying - almost 50 respondents stated they were experienced enough to not make mistakes, so don't feel the need to isolate and test.**

Discussions with employers and apprentices have highlighted issues regarding complacency, poor workplace practices and culture, and the view that electric shock incidents are an expected consequence of the work of an electrician. This is a false narrative that must be challenged.

Electrical safety should never be taken lightly, yet electric shocks often go unreported. Understanding the reasons behind this silence is critical for improving safety and ensuring a safer working environment.

Electric shocks, no matter how minor they may seem, can be indicative of serious underlying electrical issues. Encouraging improved electrical safety procedures and practices and ensuring the prompt and accurate reporting of electric shock incidents can prevent severe injuries and potentially fatal accidents.

PURPOSE OF THE ELECTRIC SHOCK SURVEY

Electrical safety is paramount in the electrical contracting industry, and for electrical workers employed in other sectors.

ETT is committed to working with industry partners and stakeholders to promote best practice; helping to improve safety and protect lives.

In July 2024, the ETT, supported by the HSENI, conducted an NI-wide survey to obtain insights and feedback on:

> How often workers in the electrical industry in Northern Ireland experience electric shocks.

> The impact of electric shocks including physical injury and mental health/well-being.

> The culture around reporting of electric shocks.

> Actions taken by employers and workers to prevent electric shocks from happening.

> How to improve awareness and understanding of the risks and dangers associated with electric shock, including actions that could be taken to support electric shock prevention.

ETT would like to acknowledge the support received from local employers, FE Colleges and local training providers, the Construction Industry Training Board for NI (CITBNI), and the Northern Ireland Safety Group (NISG) for sharing the survey and encouraging participation within their networks.

HEADLINE FINDINGS

Of the 342 survey respondents, **80%** have experienced an electric shock while working

40% revealed they have experienced 3+ shocks during their career to date.

89% reported they had sustained an injury because of the shock

74% Did not report the electric shock incident to their employer.

The six most common reasons for an electric shock occurring:

1. Incorrect cable identification.
2. Not carrying out safe isolation.
3. Inexperience (as an apprentice).
4. Borrowed neutral.
5. Previous poor-quality work, or through faults/damage.
6. Lack of care or concentration.
7. Back feed.

Common reasons for not reporting an electric shock:

1. Company culture.
2. Ineffective reporting procedures or documentation.
3. Time pressures and deadlines.

Only **52%** Follow proper safety procedures *'all of the time'.*

40% admitted to taking shortcuts that could potentially lead to an electric shock

90% feel more electric shock prevention training is required

HEADLINE FINDINGS

Despite 97% of survey respondents stating they have at least 'good awareness' of electric shock risks, incidents remain alarmingly frequent, suggesting significant gaps between understanding the dangers of working with electricity and adherence with safety measures in practice.

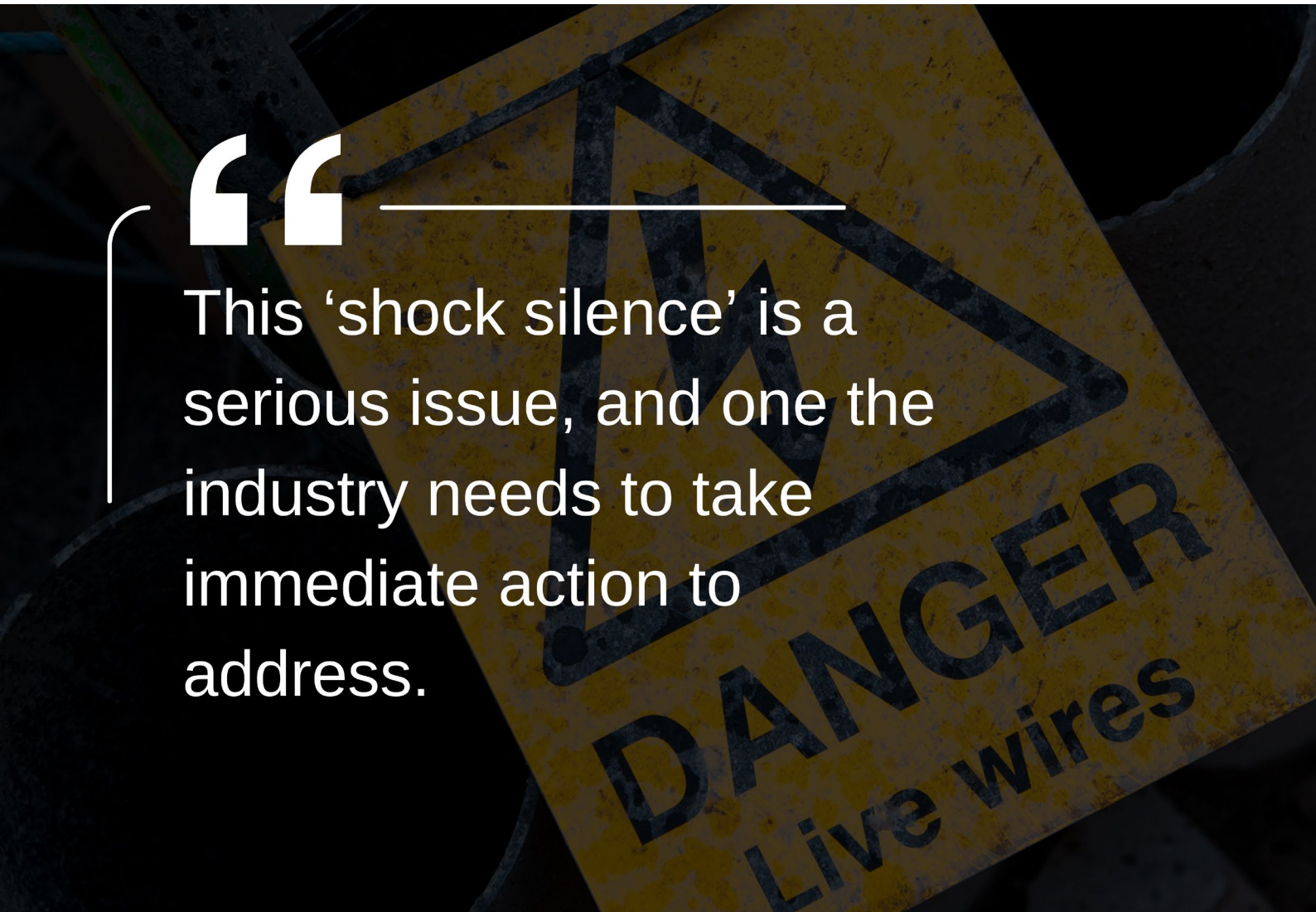
It would be irresponsible to ignore the concerning data in relation to near misses that have come to light as part of this survey. It's time to stop and act.

Respondents expressed an alarming sentiment that *'quick jabs'* or *'small shocks'* are not very serious, and in many ways have come to be viewed as part of the job. We must change this mindset, which is dangerous and potentially life-threatening – not only for electrical workers but for clients and the wider public.

89% of those who have experienced an electric shock sustained an injury. This paints a terrifying picture and must act as a warning to all in the industry. It's also alarming to note that almost all (95%) of those who experienced an electric shock at work had to take time off. This highlights the severity and impact such incidents can have on a person's life and livelihood.

The fact 74% of those who experienced an electric shock did not report it represents a huge underreporting culture, which we have termed 'shock silence'. It's a serious issue and one the industry needs to take immediate action to address.

Whilst 70% of respondents stated they had received electrical safety training at some stage during their career, a huge 90% feel more electric shock prevention training is required. This highlights an urgent need to targeted training and Continuous Professional Development (CPD) to support a stronger safety culture, adherence to implement safety procedures, and compliance with safe isolation practices.



> This 'shock silence' is a serious issue, and one the industry needs to take immediate action to address.

SUMMARY OF RECOMMENDATIONS

Health, Safety & Workplace Culture

- Foster a workplace culture that prioritises and values workplace safety over the 'blame game' and productivity pressures to encourage transparency and address the issue of underreporting electric shocks. Reporting is a vital component of electrical safety; every report of an electric shock is a step towards a safer working environment for everyone.
- It is essential to create an environment where safety concerns are respected and valued by all team members. All incidents, no matter how minor they may seem, should be investigated with appropriate corrective and preventive actions taken.

Electrical Safety Equipment & Procedures

- Ensure electrical safety equipment is both readily available and affordable. This is crucial for maintaining a safe working environment and encouraging the practice of safe isolation.
- Reinforce the importance of safe isolation procedures to ensure electrical safety onsite. We must get to a point where everyone identifies safe isolation as the number one safety measure to prevent electric shock.
- Improve systems, processes, and procedures to make reporting an electric shock incident more straightforward, and without fear of disciplinary action or 'being punished'.
- Develop and communicate clear workplace reporting procedures, ensuring there are no negative consequences for reporting incidents. By tackling these barriers, workplaces can become safer and more responsive to potential hazards.
- Implement a 'safe approach to work' rather than a 'quick approach to work', reducing time pressures and the culture of putting deadlines before safety.

Education, Training & Awareness

- Challenge the view that electric shocks are a normal risk to an electrician. This mindset is dangerous and potentially life-threatening - not only for electrical workers, but for clients and the wider public.
- Educate industry on electric shock prevention, including the risks, dangers, and consequences of electric shocks both in the short and longer-term.
- Deliver electrical safety workshops, seminars, talks, and 'road shows', as well as more frequent toolbox talks in the workplace on electrical safety and electric shock prevention.
- Create standardised training with the increased use of digital resources, case studies, and 'real life' examples of electric shocks, including how and why they occurred and the consequences.
- Encourage more specific training in electrical safety and electric shock prevention for Health & Safety Officers, as well as managers, supervisors, and other trades on sites.
- Implement ongoing safety training programs that emphasise the importance of reporting all incidents.

Apprenticeship Development & Support

- Standardise electrical safety and electric shock prevention training across all apprenticeship programmes and apprentice training providers.
- Improve the quality and frequency of electrical safety training for electrical installation apprentices.
- Review the apprenticeship framework and the National Occupational Standards (NOS) to include a unit or module linked specifically to electric shock prevention.
- Provide free Safe Isolation Lock Off Kits for all 1st year apprentices at the start of their apprenticeship programme to help make safe isolation an ingrained habit. It could be the difference between life or death.

Industry Collaboration

- Share the Ending 'Shock Silence' report and Electric Shock Survey findings with wider industry stakeholders, seeking their feedback and input to build positive relationships and adopt a collaborative approach to electric shock awareness raising and prevention.
- Seek opportunities for industry collaboration, specifically in relation to the standardisation of equipment and safety devices by manufacturers.
- Work closely with NIE Networks to review electrical safety and safe isolation procedures.
- Consider implementing mandatory electric shock prevention training, potentially connected to the SparkSafe Licence to Practise or other schemes such as CSR for electrical workers.
- Further develop links with the HSENI to review reporting requirements, as well as having a point of contact to report dangerous occurrences or conditions to in relation to electrical systems.
- Create an industry led working group to develop an action plan with input from employers, apprentices and stakeholders to agree next steps and SMART targets..

HOW TO GET INVOLVED

Through industry engagement, we intend to use these recommendations to develop an industry-supported action plan.

It is envisioned the action plan will include:

- Reviewing apprentice training in relation to electric shock prevention.
- Advocating for mandatory electric shock prevention training for experienced workers.
- Providing resources and support to industry in relation to electrical safety procedures.
- Ensuring every electrical worker, including those in management and supporting roles such as health and safety professionals, understand that taking shortcuts is never worth the risk.
- Ensuring electrical workers are provided with effective safety procedures and the proper safety equipment.
- Lobbying for all electrical apprentices to be issued with a 'safe isolation lock off kit' at the start of their four-year Level 3 Apprenticeship Programme.

Please contact the ETT team to get involved and be part of the industry led working group. Email **info@ett-ni.org**.

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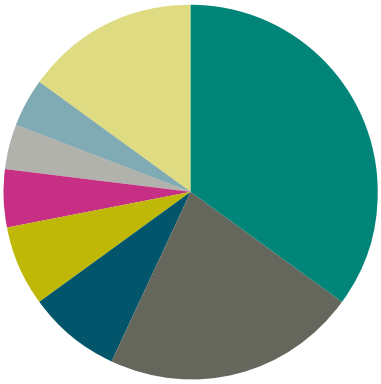
SURVEY RESPONDENT DEMOGRAPHICS

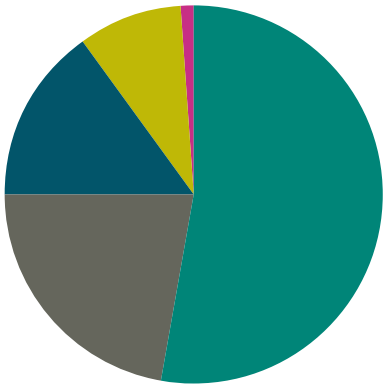
Most respondents (35%) described themselves as an Electrician, with Electrical Apprentices (inclusive of 1st to 4th year) accounting for almost one quarter of responses (22%).

Other job titles provided included: Approved Electrician, Alarm Engineer, Compliance Services Officer, Electrical Installation Lecturer, PAT Tester, Safety Engineer, Trainer/ Assessor, and Inspection & Testing Engineer. Responses were representative of a broad range of job roles across various electrical-related professions.



JOB ROLE

- 35% - Electrician
- 22% - Electrical Apprentices
- 8% - Electrical Engineer
- 7% - Director
- 5% - Site Supervisor
- 4% - Maintenance Engineer
- 4% - Project Manager
- 15% - Other



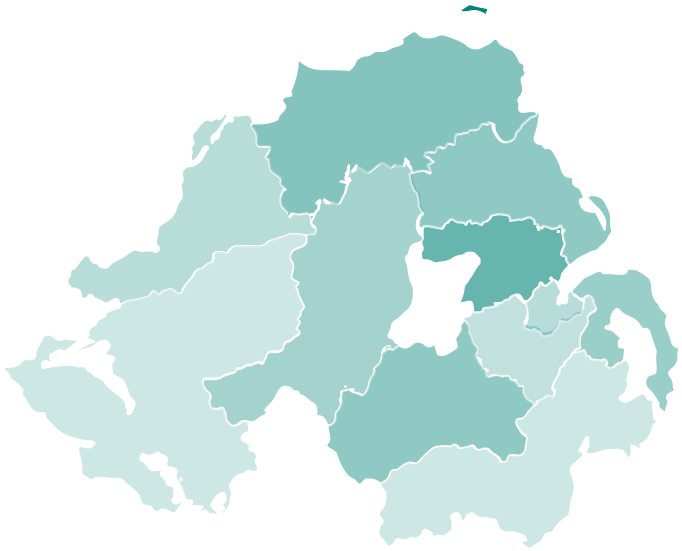
EXPERIENCE

Response Option	# of Responses	% of Responses
15+ years	180	53%
1-4 years	77	22%
5-9 years	51	15%
10-14 years	31	9%
Less than 1 year	3	1%
Total	**342**	**100%**

Over half of respondents (53%) have been in the industry for at least 15 years. Overall, responses cover a breadth of years of industry experience.

COUNCIL AREA

Response Option	# of Responses	% of Responses
Antrim & Newtownabbey	51	15%
Causeway Coast & Glens	42	12%
Armagh, Banbridge & Craigavon	39	11%
Mid & East Antrim	38	11%
Ards & North Down	34	10%
Mid Ulster	31	9%
Derry City & Strabane	25	7%
Belfast City	24	7%
Lisburn & Castlereagh	19	6%
Fermanagh & Omagh	18	5%
Newry, Mourne & Down	16	5%
Prefer not to say	5	2%
Total	**342**	**100%**



Participation in the survey was encouraging across all Northern Ireland's eleven local government jurisdictions.

ELECTRIC SHOCK INCIDENTS

Despite the majority of survey respondents (97%) feeling they have at least a 'good awareness and understanding' of the risks and dangers associated with electric shock, this conflicts with the number of individuals who have experienced an electric shock.

80% **of respondents revealed they have experienced an electric shock at work.**

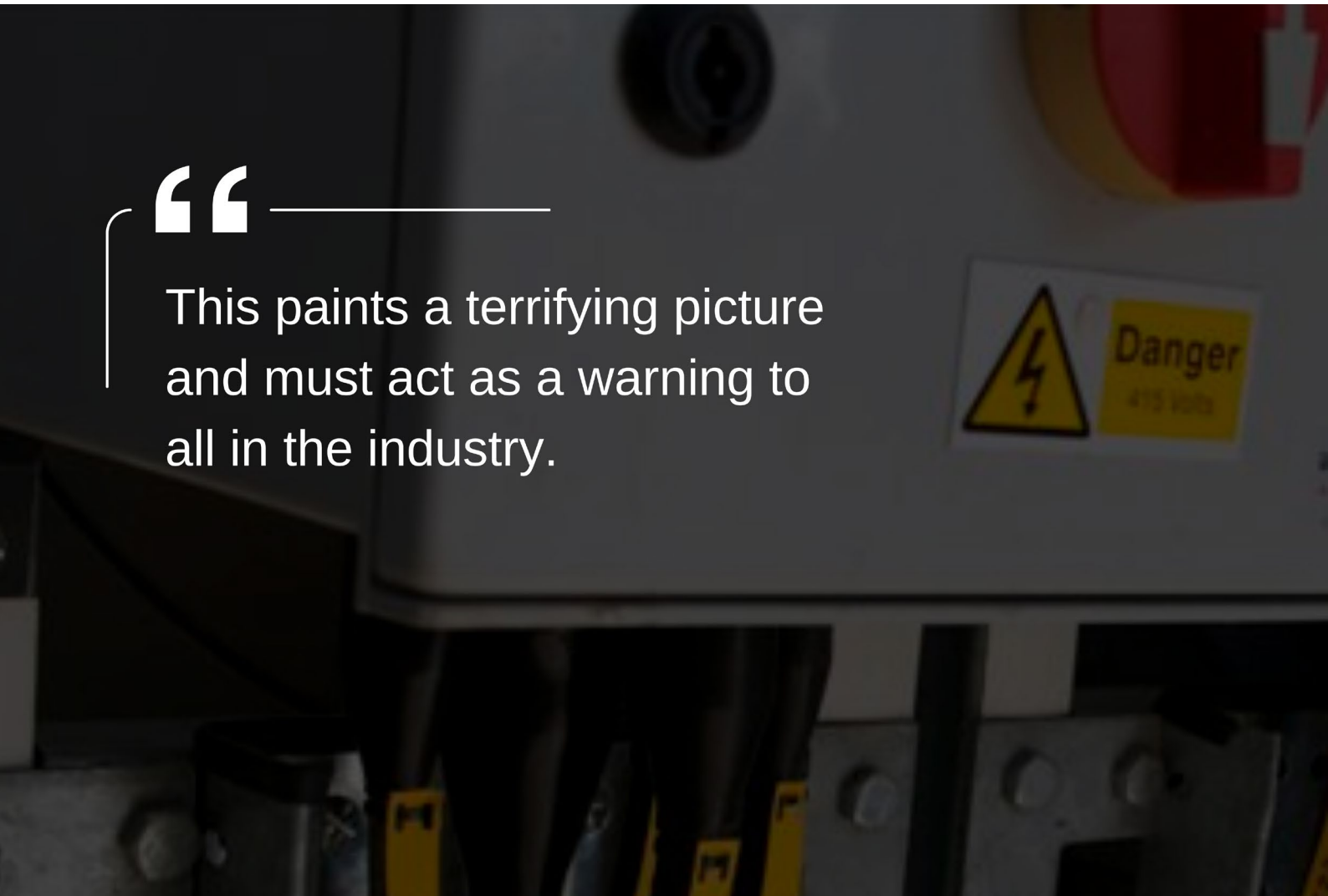
40% **report experiencing 3+ electric shocks during their career to date.**

No employer plans to cause an employee to experience an electric shock, or any associated injuries, but clearly there is something wrong if 80% of electrical workers have experienced an electric shock at work.

It would be irresponsible to ignore this data in relation to the number of near misses that have come to light as part of undertaking this survey. It's time to act. We must work towards creating a safe working environment for all electrical workers.

> These electric shock incidence frequency figures are disturbing and a real cause for concern.

Repeated or prolonged exposure to electric shocks – even at low voltage or of a nature that may be considered 'minor' by some - can cause permanent damage to the nervous system, resulting in chronic pain and neurological disorders. In addition, electric shocks can cause cumulative injuries resulting in long-term health issues such as memory loss, depression, and even an increased risk of cardiovascular diseases.



> This paints a terrifying picture and must act as a warning to all in the industry.

ELECTRIC SHOCK INJURIES

It takes very little current to cause damage to the human body. The severity of an electric shock depends on several factors such as the voltage, duration of exposure, and current pathway. In some cases, electric shock can cause muscle spasms, burns, and even loss of consciousness. In more severe cases, it can lead to cardiac arrest or respiratory failure, which can be fatal if not treated immediately.

Of the 273 survey respondents who stated they have experienced an electric shock at work, the majority (88.6%) noted they had sustained an injury because of the shock.

Of those who experienced an electric shock incident at work and described their injuries:

> 46% received some form of a burn.

> 16% noted different physical symptoms citing it as a 'painful experience'.

> 7% referred to the physical symptoms of shock.

Many respondents took time to describe in detail the nature and severity of the injuries.

'Severe burns to hands. Pain in both hands for a long time. Hands did not heal for a long period of time due to deep burns caused by molten metal at high temperature burning deep into skin.'

'The second electric shock was more serious, the whole body trembled and vomiting.'

'Arm ligament damage, out of work for six weeks, burnt two thumbs and finger.'

'Broke front teeth, hole in hand.'

'Broken heel. Left with constant pain and permanent limp.'

'Irregular heartbeat and other cardiovascular issues post-shock.'

'Reduced dexterity and coordination, making work more challenging.'

'The physical damage caused may require lengthy rehabilitation. The shock stayed with me the whole day. There was a long period of sweating at work with nervous retching.'

'The electric shock left me with severe muscle spasms, making it difficult to move my limbs for a while.'

CAUSE OF ELECTRIC SHOCKS

As well as seeking to determine the frequency of electric shock incidents, the survey sought to understand the reasons why the electric shock incident occurred.

The most common causes for an electric shock incident occurring were:

1. Incorrect cable identification / labelling.
2. Not carrying out safe isolation / working live.
3. Incident occurred as an Apprentice / due to inexperience.
4. Borrowed neutral.
5. Previous poor-quality work or faults / damage.
6. Lack of care / concentration.
7. Back feed.

It's alarming to note that **almost all (95%) of those who experienced an electric shock at work had to take time off.** This statistic highlights the severity and impact that such incidents can have on a person's life and livelihood.

It's clear that the consequences of electric shocks extend beyond physical injuries; they can also impact productivity and morale within companies. By investing in effective safety measures and fostering a culture of awareness and proactive reporting, employers can take steps to protect their employees and reduce the likelihood of such incidents occurring.

MENTAL HEALTH & WELLBEING

While the physical effects of electric shock are well known, there is less awareness of the impact electric shock can have on a person's mental health and well-being, including potential longer-term effects from cumulative exposures.

In relation to non-physical impacts for those who experienced an electric shock incident at work:

23% **said an electric shock incident at work made them more cautious.**

9% **disclosed feeling anxious for some time following an electric shock incident.**

Many respondents provided more detailed insights into their experiences:

'Initially it was laughed off, but it was only as I got older the severity of an electric shock hit home.'

'Afraid to touch cables for a while.'

'At the time I suffered nightmares. Developed a fear of electricity.'

'Emotional trauma and PTSD-like symptoms after particularly frightening shocks.'

'Feelings of vulnerability and loss of confidence in performing my job duties.'

Some responses expressed an alarming sentiment that 'quick jabs' or 'small shocks' are not very serious, and in many ways have come to be viewed as part of the job.

With 80% of survey respondents reporting having experienced an electric shock at work - the cultural attitude that this is normal - is a concern.

This should be a moment of truth for all of us – from employers to electricians and apprentices, and the wider industry as a whole.

For anyone in the electrical industry to believe that an electric shock is a natural consequence of their chosen career, then that is a serious indictment on the industry.

We must change this mindset, which is dangerous and potentially life threatening for electrical workers, as well as clients and the public.

Electric shocks are not part of the day job. We must change this mindset.

It is crucial for electrical workers to have a thorough understanding of the potential dangers and effects of electric shock, both in the short and longer-term.

Studies have shown that individuals who have sustained an electric shock, are at a higher risk of developing disorders such as anxiety, depression, and post-traumatic stress disorder (PTSD). These can have long-lasting effects on a person's overall well-being if not addressed properly.

By prioritising electrical safety and taking the necessary precautions, electrical workers can protect themselves and ensure their mental health and well-being throughout their career and their lives.

ELECTRIC SHOCK REPORTING

A worryingly low number of respondents (59%) stated they would 'always' report an electric shock incident and seek medical attention, if necessary. The survey also revealed:

Only 26% of respondents who have experienced an electric shock incident at work reported it to their employer.

It is worth noting the figures from this survey do not factor the frequency of electric shock incidents versus the frequency of reporting i.e., an individual may have received 3+ shocks and reported only 1 of them, but would respond positively that 'yes', they have reported an electric shock to their employer. Therefore, it is expected the actual level of reporting may be lower than 26%.

This 'shock silence' is a serious issue, and one the industry needs to take immediate action to address.

Most employers aim to provide a high level of care and interest in the safety of their workers. However, some appear to be unaware of - or are perhaps in denial about - the occurrence and frequency of electric shock incidents their employees are experiencing. There is no excuse. Electricians have no special immunity to the effects of electric shock. No one can predict what voltage/current will hurt, damage, or kill a person. The truth is it is often only a 'lucky break' that prevents serious injury or loss of life.

CHALLENGES IN REPORTING

Survey findings raised significant concerns in relation to the underreporting of electric shock incidents. Only 4% of respondents identified 'no issues' with reporting electric shocks to their employer. Most respondents revealed a range of challenges and barriers in reporting practices, the most common three were:

1. Company Culture

Many responses identified the potential for disciplinary action or *'fear of being punished'* as a key factor in why electric shock incidents go unreported.

In addition, the fear of being perceived as incompetent, or feeling embarrassed , was identified as a concern.

In some cases, lack of reporting was attributed to resistance by supervisors and colleagues to take the time to complete a report, others not taking shocks seriously, and believing that electric shocks that have not resulted in a physical injury do not need to be reported.

2. Ineffective Reporting Procedures

Many responses highlighted the reporting process is not streamlined or straightforward, with a lack of awareness of how to report an electric shock or who to report it to.

Further, concerns were raised of inadequate training, awareness, or resources for conducting effective incident investigations, as well as a sense that reporting incidents does not result in any changes in procedures or corrective/ preventive action, therefore feeling the reporting process is a *'waste of time'.*

3. Time Pressures / Deadlines

Whilst this was referred to under company culture, time pressures to *'get the work done'* and meet project deadlines was raised frequently and separately by many respondents.

Individuals expressed concern that reporting an electric shock would *'hold up the job'*, or aggravate their colleagues, or a client.

It is essential to encourage and support workers in reporting incidents, no matter how minor they may seem. Every electric shock should be taken seriously, as they can have severe and long-term consequences for both individuals and organisations.

Encouraging the reporting of electric shocks is a vital component of electrical safety.

Every report of an electric shock is a step towards a safer working environment for everyone.

> We must work towards creating a safety-conscious culture where all electric shock incidents are reported, investigated, and prevented in the future.

ELECTRICAL SAFETY AWARENESS

The electrical industry plays a pivotal role in our society. From powering homes and businesses to enabling advancements in technology, electricity plays an essential role in our daily lives.

As such, it is imperative that those who work in the electrical industry have the necessary training and qualifications to ensure they can perform their jobs safely and effectively.

90%

of respondents think there should be more electric shock prevention training and more awareness raising activities throughout industry.

The six most common suggestions included:

1. Developing more and improved training that is delivered more frequently i.e., refresher training.
2. Developing mandatory and/or certified electrical safety / electric shock prevention training.
3. Providing electric shock prevention training for both apprentices and experienced workers.
4. Digital and online resources such as videos on electrical safety and electric shock prevention.
5. Conducting more frequent toolbox talks on electrical safety and electric shock prevention.
6. Delivering electrical safety workshops, seminars, talks, and 'road shows'.

ELECTRICAL SAFETY TRAINING

It was also frequently highlighted that electrical safety and electric shock prevention training should be developed and delivered to all trades working on site, and for management and non-technical staff such as health and safety professionals.

Reasons for this included:

> Ensuring a thorough understanding of the risks of electric shock throughout the workforce.

> Supporting the implementation of mitigation measures to prevent electric shock throughout a company, with the aim of ensuring effective safety procedures and reducing time pressures through increased understanding of the dangers of taking shortcuts.

The industry's health and safety statistics indicate gaps in competency can lead to significant risks, such as electric shocks and injuries, particularly among those with insufficient training or who are under pressure to cut corners. Therefore, comprehensive and ongoing safety training, which includes modules on safe isolation, Lock Out, Tag Out (LOTO) procedures, and emergency response is critical.

By having proper training and qualifications, workers are equipped with the knowledge and skills to identify potential hazards, follow safety protocols, and use equipment correctly. This significantly reduces the risk of accidents and promotes a safe working environment for both workers and the general public.

SAFETY PROCEDURES & EQUIPMENT

Despite 97% of respondents self-reporting they have at least a *'good awareness and understanding'* of the risks and dangers of electric shock, only 52% follow safety procedures *'all of the time'*. Worryingly, 13% *'sometimes', 'rarely'* or *'never'* follow safety procedures.

Alarmingly **40%** of survey respondents revealed they have taken a shortcut that could have lead to an electric shock.

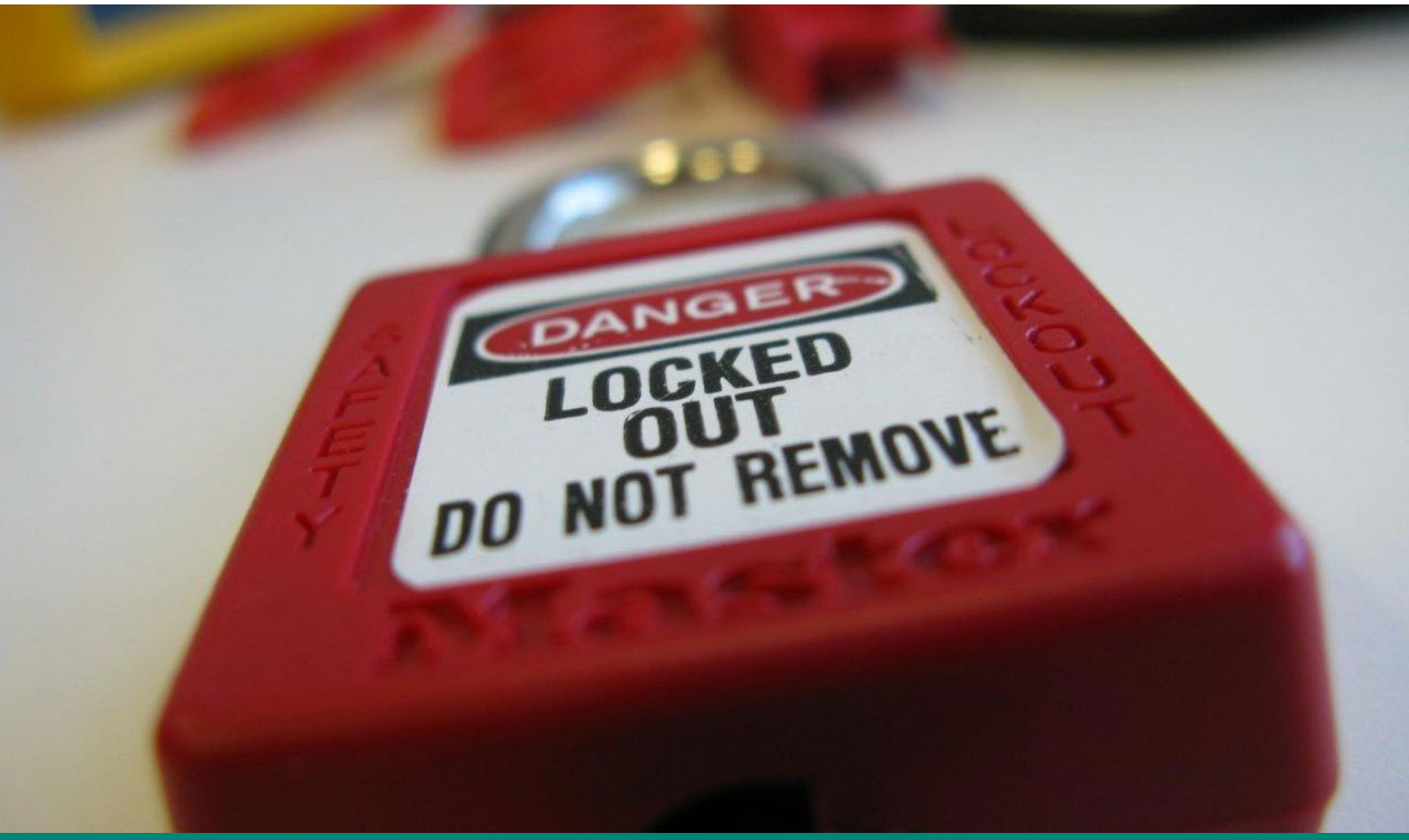
The top three reasons provided for not following safety procedures and/or taking shortcuts were:

62% expressed 'time pressures' as the most significant factor.

27% stated 'it was impossible to follow the safety procedures.'

24% advised 'no isolation equipment was available.'

Further analysis of written responses revealed overconfidence, complacency or *'laziness',* and a lack of experience during time as an apprentice as additional factors as to why safety procedures were not followed, or why shortcuts are sometimes taken.



Stay safe with NAPIT

The essential guide to safe isolation

1 Dutyholder/Authorised person to confirm it is acceptable to isolate circuit/equipment for work to commence.

2 Carry out Risk Assessment Method Statement and where required a Permit to work

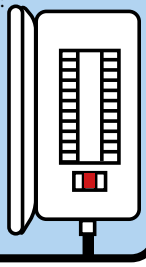
3 Identify the type of supply system:

TN-S – linked main switch

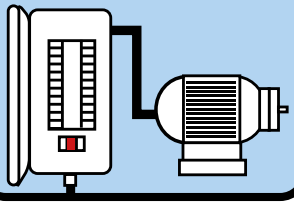
TN-C-S – linked main switch

TT – all pole Isolation:

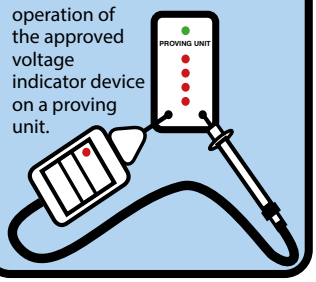
All circuits and equipment



4 Locate and identify the circuit/ equipment to be isolated including any alternative sources.

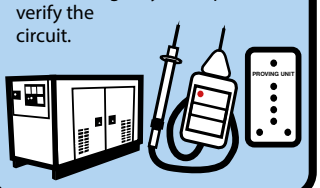


5 Confirm correct operation of the approved voltage indicator device on a proving unit.



6 Verify the circuit/equipment is functional.

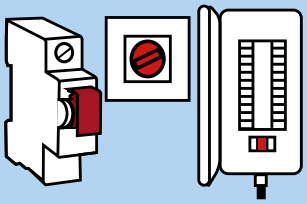
If the circuit is not operational, dead testing may be required to verify the circuit.



NO SATISFACTORY

YES

7 Identify suitable means of isolation.

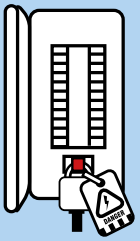


8 Carry out isolation process for equipment by:

- Switching off
  - Double-Pole/ three-phase Isolator
  - Circuit-Breakers
  - Withdrawing fuse

9 Fit appropriate lock off devices including multi-hasps.

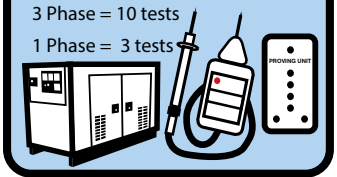
Person carrying out works to retain key. Fit warning label for isolation and identified work.



10 Verify the circuit/equipment is isolated. Use the approved voltage indicator device to verify circuit is dead. Test between all conductors: Earth-Neutral. Earth-Line, Neutral-Line, Line-Line.

3 Phase = 10 tests

1 Phase = 3 tests

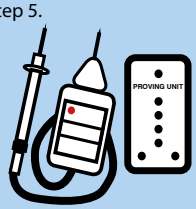


NO SATISFACTORY

YES

11 Re-check the approved voltage indicator device is still functional

- On the same proving system as Step 5.

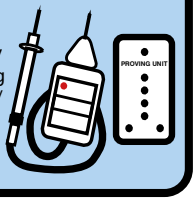


NO SATISFACTORY

YES

12 Circuit/equipment should be safe to carry out the work.

Always remain vigilant and re-check with voltage indicator and proving device when moving away and returning to the circuit/ equipment.



Process for re-energising the circuit/system

Step 1: After completing the work inspect and test in accordance with Part 6 BS 7671 (dead tests).

Step 2: Cancel permits (if issued), remove locking off devices, locks & labels and restore electrical supply.

Step 3: Complete testing (live tests). Commission circuit equipment.

Step 4: Complete and issue appropriate test certificates/reports.

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MOST IMPORTANT SAFETY MEASURES

Survey respondents were asked to identify the safety measures they felt were most important in preventing electric shock. The top four responses were:

SAFE ISOLATION **68%** **of respondents identified safe isolation as the primary safety measure to prevent electric shock.**

A broad variation of words and phrases were uses such as *'Lock Out, Lock Off', 'make dead', Lock Off'*, and *'test before touch'.* As an industry, we must get to a point where 100% of respondents identify safe isolation procedures as the number one safety measure to prevent electric shock.

It is worth noting the inconsistency in language used, particularly in relation to phrases such as 'test before touch'. This would be important to address to prevent any potential misunderstandings in relation to what this phrase means in practice.

CORRECT EQUIPMENT **26%** **identified the correct safety equipment as being an important safety measure to prevent electric shock.**

Whilst a *'Lock Off Kit'* and *'voltage indicator'* or *'proving unit'* were most frequently identified, other *'correct equipment'* identified included *'insulated tools'.*

It is commonly known in industry that some individuals use *'insulated tools'* incorrectly, believing doing so without – or in place of – safe isolation will help to prevent an electric shock. Industry messaging in relation to such practices must be clear and concise, with no room for misinterpretation.

TRAINING & AWARENESS **22%** **of respondents identified training and awareness of electric shock prevention as being an important safety measure.**

Whilst 70% of respondents report they have received training in relation to preventing electric shock incidents at some stage during their career, an overwhelming 90% feel more electric shock prevention training is required.

Respondents also often commented that industry should ensure only those who are trained and competent are permitted to work on electrical systems.

SAFETY PROCEDURES **20%** **identified suitable safety procedures as being an important safety measure to prevent electric shock.**

Respondents made reference to Risk Assessments and Method Statements (RAMS), Safe Operating Proecures (SOPs), Safe Systems of Work (SSOW), and a Pertmit to Work (PTW), where required, as beng important safety measures to prevent electric shock.

Additional answers included Personal Protective Equipment (PPE) and no lone working. It is important to note that while these responses are relevant, they should not be considered effective protection against electric shock while used in isolation.

Electrical Safety with ETT

ett
TRAINING | SKILLS | STANDARDS

- Safe Isolation Workshop
- Electricity at Work Regulations
- Electrical Safety Awareness Training

Training, Skills & Standards

SCAN ME

www.ett-ni.org 02825650750 info@ett-ni.org

NET

City & Guilds

LCL AWARDS APPROVED CENTRE

bmtrada SYSTEM CERTIFICATION ISO 9001 CERTIFICATION

OPPORTUNITIES FOR IMPROVEMENT - THE VIEWS OF ELECTRICAL WORKERS

Survey respondents were asked to provide feedback in relation to improvements that could be made to help prevent electric shocks at work. Highly engaged and detailed responses were received, providing a broad range of suggestions. The most common responses have been grouped thematically:

Health, Safety & Workplace Culture

Respondents provided a range of suggestions to improve workplace culture, which included:

- The provision of more Health & Safety Officers.
- More specific training in electrical safety and electric shock prevention for Health & Safety Officers, as well as managers, supervisors, and other trades on sites.
- Increased site inspections and compliance checks.
- Increased and improved internal communications, with emphasis on carrying out safe isolation and not taking shortcuts.
- Improving safety procedures to make them easier to follow and implement.
- Improving systems and processes to make reporting an electric shock incident more straightforward, and without fear of disciplinary action or 'being punished'.
- Using only qualified and competent electrical workers for work with electrical systems.
- Implementing a 'safe approach to work' rather than a 'quick approach to work', reducing time pressures and the culture of putting deadlines before safety.

Electrical Safety Equipment & Procedures

The provision of adequate and better-quality safety equipment was a frequent response, including making safety equipment such as 'Lock Off Kits' cheaper and more accessible. Several responses referred to making the use of 'Lock Off Kits' *'less of a stigma'* through improved awareness of their importance and ensuring compliance in relation to their use.

Many responses highlighted the need for more simple and straightforward safety procedures that are effective, including a more simplistic reporting process in the event of an electric shock incident or near miss, with appropriate corrective or preventive actions taken.

Broad support was also expressed for ensuring compliance and adherence to safety procedures, and the standardization of safety procedures, particularly in relation to the safe isolation process.

Education Training & Awareness

Responses highlighted broad support for more specific and regular training in relation to electrical safety and electric shock prevention, including more training for apprentices, experienced workers, managers, supervisors, health and safety professionals, and other trades working on sites.

In addition to various suggestions for increased training, several comments referred to better quality training, more standardized or consistent training, and the increased use of digital resources, case studies, and 'real life' examples of electric shocks, including how and why they occurred and the consequences.

Survey respondents expressed significant support for awareness raising campaigns through a broad range of channels, including social media, publicity, advertising, flyers and posters – particularly in locations such as wholesalers – marketing campaigns, 'road shows', and the provision of more information and resources – both physical and digital – to make the topic of electric shock more open to discussion and to increase the frequency with which it is talked about in industry.

The concept of case studies or 'real life' experienced was suggested by many respondents to make the consequences of electric shock a reality and serve as a 'powerful warning'.

Apprenticeship Development & Support

Whilst many respondents stated increased training and awareness raising is required for all electrical workers, including other trades and related staff such as health and safety professionals, there was a clear demand for specific training in relation to electrical safety and electric shock prevention for apprentices.

Suggestions included:

- Issuing all apprentices with a free 'Lock Off Kit' at the start of their programme.
- Dedicating a unit/module of the apprenticeship to electric shock prevention.
- Standardising electrical safety and electric shock prevention training across all colleges and programmes.
- Improving the quality and/or frequency of electrical safety training for apprentices.

Industry Collaboration

Several responses referred to better industry collaboration, specifically in relation to the standardization of certain equipment and safety devices by manufacturers, as well as with organisations such as Northern Ireland Electricity (NIE) Networks.

This was highlighted in relation to a mandatory safe isolation point between the NIE meter and consumer unit, and every home having a switch fuse for board changes or for the inclusion of additional boards.

Several suggestions related to implementing mandatory electric shock prevention training, potentially connected to the SparkSafe Licence to Practice or another mandatory scheme such as CSR Cards for electrical workers, which would encompass the requirements for refresher training for Licence or Card renewal.

Suggestions also included legislation to ensure only qualified electrical workers are permitted to work on electrical systems, to make all electric shocks reportable to HSENI - not only those that would be reported under RIDDOR - as well as a point of contact with HSENI to report dangerous occurrence or conditions in relation to electrical systems.

NOTES

TRAINING | SKILLS | STANDARDS

This report has been carefully prepared based on the findings of a Northern Ireland wide survey into the frequency, circumstances, and reporting of electric shocks at work. This report cannot be relied upon to cover specific situations, and you should not act, or refrain from acting, upon the information contained therein without obtaining specific advice. ETT NI, its partners, employees, and agents do not accept or assume any liability or duty of care for any loss arising from any action taken or not taken by anyone in reliance on the information in this report or any decision based on it.

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