News for the industry from Electrical Safety First

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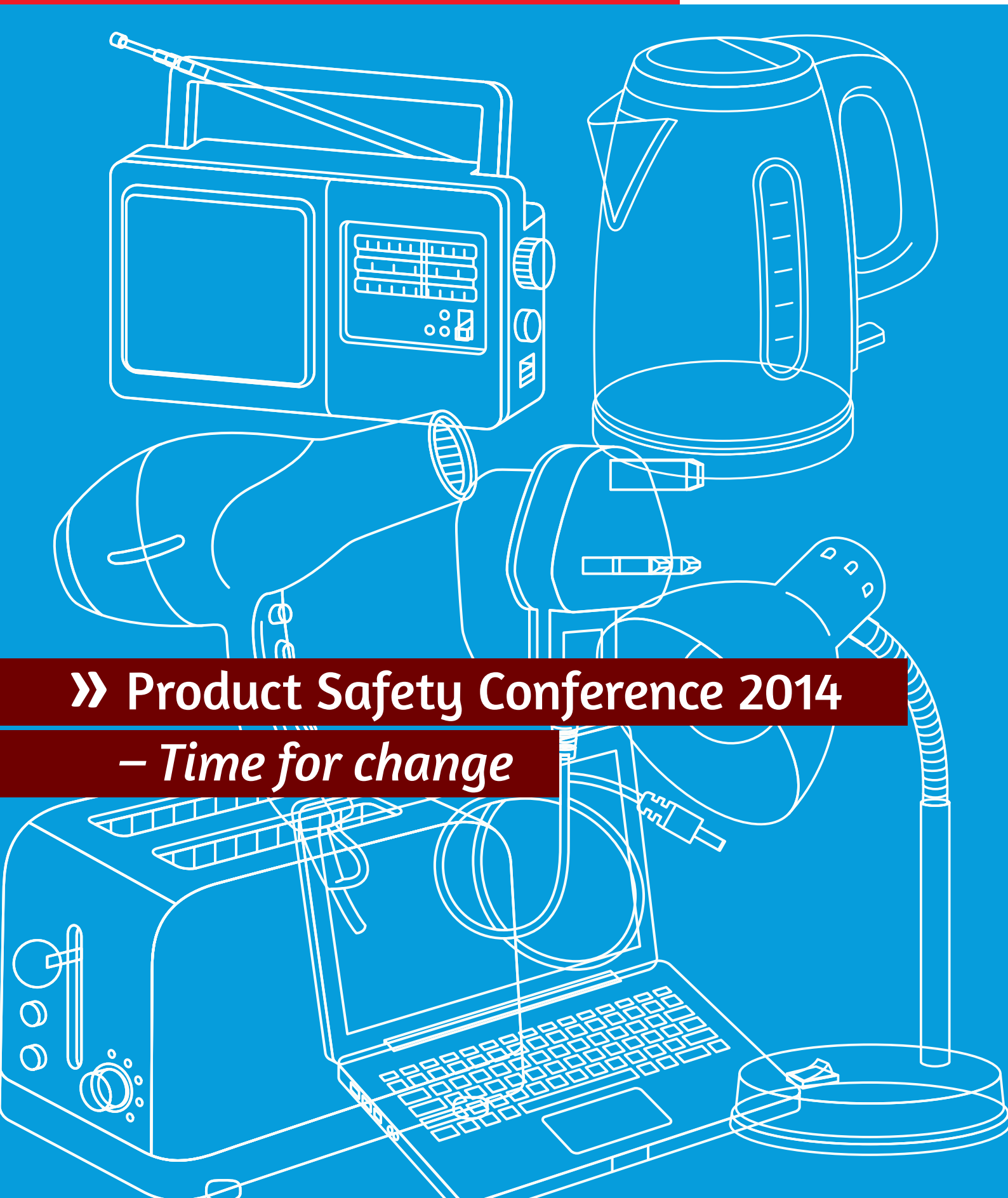
Switched On

Issue 35 Winter 2014-15

Electrical Safety First

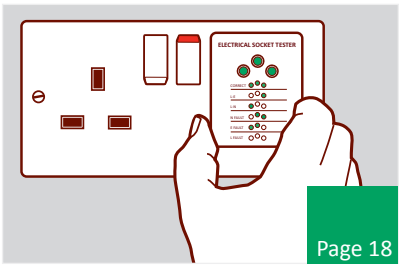
The UK's electrical safety experts



» Product Safety Conference 2014 – *Time for change*

Page 15


Page 10


Page 18

News

Feature

Technical

Letters

I'm sure that there are many within the electrical industry who will have strong feelings about some of the issues raised in Switched On. So feel free to shout about them.

Please email your letters to the Editor of *Switched On* at:
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From the DG's desk

It's been a busy end to what has been a successful year for Electrical Safety First.

The Charity recently attended the launch of AMDEA's '*Register My Appliance*' website – **www.registermyappliance.org.uk**.

The new website provides a single point for consumers to register their domestic appliances so that manufacturers can quickly contact them in the event of a recall.

Given our longstanding commitment to improving the product recall system in the UK, it's fantastic to see manufacturers responding to our concerns by offering consumers a place to leave their contact details simply as a safety precaution, without having to worry that they'll be used for marketing purposes.

Recalls and traceability was also a key theme at our recent Product Safety Conference. Hosted by former ***Working Lunch*** presenter and leading business journalist, Declan Curry, the event attracted a host of distinguished speakers, encompassing leading manufacturers, retailers, trade bodies, enforcement agencies and non-governmental organisations.

I'm delighted to say that the Product Safety Conference was again a great success, confirming its status as a key event in the industry's calendar.

Electrical Safety First's own position as industry experts has been further underlined by the decision of the Communities and Local Government Select Committee to commission us to conduct research into the awareness of householders in England of the requirements of Part P of the Building Regulations.

The results of the research will feed into the Committee's ongoing review of Part P and is a huge step for the Charity, demonstrating the high regard in which we're held by the political establishment. There's no doubt our tireless campaigning activity has helped the Charity reach such a position.

Using our recent success with the Scottish Housing Bill as a springboard, we're continuing to press the government in Westminster to introduce mandatory, five-yearly electrical checks for private rented accommodation across the rest of the UK.

Calls to improve standards more generally in the private rented sector are also growing louder, with the Electrical Safety Roundtable (ESR) recently adding their voice. The ESR used their fringe events during the Party Conference season to urge politicians to back 'Home Safety MOTs'.

Such cross-industry collaboration is vital for increasing the pressure on the government to bring in legislative change.

The private rented sector will play an increasingly important role as the UK population lives ever longer and we seek to provide more care for the elderly in their own homes. It is therefore becoming more important than ever to ensure that the older generation remains safe from the dangers that electricity can pose.

With this in mind, we recently held an evidence-gathering session for stakeholders and experts to help inform our forthcoming research into electrical safety in an ageing community.

The session was very informative and generated some interesting evidence. My thanks goes out to all of those who took part, and to London Fire Brigade which hosted the event.

For all of our success in 2014, it's vital that Electrical Safety First continues to grow and develop as a Charity.

To help ensure this, a number of our Trustees attended a conference focused on effective charity governance, where they honed their skills on managing responsibilities and demonstrating our impact.

They also learnt measures that can assist in supporting our beneficiaries. The skills the Trustees gained at the conference will serve to increase the Charity's effectiveness in the future.

With the year drawing to a close, it's worth turning our attention to one of the exciting prospects that lie ahead for Electrical Safety First. 2015 will see us take over the secretariat of Eurosafe, the European Association for Injury Prevention and Safety Promotion.

Eurosafe is a non-governmental organisation, representing organisations and individuals across Europe who are working to prevent injury and to promote safety. It plays a vital role in collecting injury data - something that is of huge importance in our own work - and also in managing interventions.

It's an exciting prospect to be part of an organisation that's helping to make Europe a safer place, and which ties in with the Charity's wider objectives to prevent deaths, injuries and damage caused by electricity.

As always, we would welcome feedback on the content of *Switched On*. Please email **feedback@electricalsafetyfirst.org.uk**

Phil Buckle
Director General

Switching on to the digital world!

Unless you're reading a printed copy, welcome to the seventh issue of the digital page-turning version of *Switched On*.

As previously announced, the paper version is now only available by individual subscription.

For an annual subscription costing only £18 including postage, you can continue to have four quarterly issues of *Switched On* delivered straight to your door.

Subscriptions for the paper version can be taken out at any time. However, as we're usually unable to supply paper copies of back issues, the sooner you subscribe, the better if you don't want to miss too many.

Should you wish to subscribe, please send us an email at **enquiries@electricalsafetyfirst.org.uk**

‘YouTube DIYers’ putting themselves at risk

According to new research by Electrical Safety First, the UK has become a nation of ‘YouTube DIYers’.

The research reveals that more than 21 million adults would happily use online ‘how to’ videos to help them carry out home improvements, even if they don’t have the necessary skills or experience[1].

With over three million videos now on YouTube featuring DIY in the home, it’s no surprise that more people than ever are relying on the internet for this kind of information, rather than seeking the services of a professional[2].

A major reason given for this growing trend is that we want to add value to our homes. The number of people carrying out DIY work to increase the value of their homes has trebled over the last two years, with half of them following YouTube instructions when undertaking the work[3].

But Electrical Safety First’s research reveals that, rather than adding value, around one in twelve people have caused significant damage to their home, or have had to pay for costly repairs due to botched DIY, after following advice they found online[4].

Electrical Safety First is also concerned that the type and availability of online instructions is putting people at risk.

For example, rewiring a house and fitting new electrics as part of a bathroom refurbishment are among the top five electrical home improvement tasks that adults say they would feel confident to carry out based online advice. But these are technically complicated and potentially dangerous tasks that are best carried out or checked by a registered electrician.

Furthermore, in order to comply with the law in England and Wales, certain electrical DIY work needs to be notified to the local Building Control office in advance of it being carried out.

Ignorance of this requirement, details of which can be found on our website at **www.electricalsafetyfirst.org.uk/guides-and-advice**, would not be an effective legal defence against prosecution for non-compliance with Building Regulations.

Some electrical work may appear straightforward but, as over a quarter of adults have found unhelpful or even incorrect instructions online, and with DIY blunders responsible for nearly half of severe electric shocks, one wrong move or skipped instruction could have serious consequences[5].

Emma Apter, Head of Communications at Electrical Safety First said: “The internet is a fantastic resource, and the new generation of YouTube DIYers shows just how much we have come to rely on it.

“But there’s only so much online videos and tips can tell you, and not everyone will have the skill or experience to safely carry out more complicated tasks.

“Ask yourself: ‘If I have to Google this, should I really be doing it?’ If in doubt, get a registered electrician in – it could save you a lot of time and money in the long run.”

Electrical Safety First recommends that householders always use a registered electrician to carry out electrical work. To find one in your area visit **www.electricalcompetentperson.co.uk**.

We do not endorse DIY electrical work, but offer these tips for safely following online DIY instructions:

- If something looks too complicated to do yourself, it probably is. You could save a lot of time and hassle by getting a registered electrician to carry out the work instead. It could be both safer and less expensive in the long run
- If you have any doubts about the type of electrical DIY you are thinking about doing, visit **www.electricalsafetyfirst.org.uk/DIY** for advice
- When doing electrical DIY, make sure you have RCD (residual current device) protection either in your consumer unit (fuse-box) or as a plug-in unit. An RCD is a life-saving device that provides additional protection against fatal electric shock.

For more information, visit **www.electricalsafetyfirst.org.uk/DIY**. There you can also view a number of spoof ‘how to’ videos created by Electrical

Safety First to highlight the reasons why we shouldn't trust everything we find on the internet.

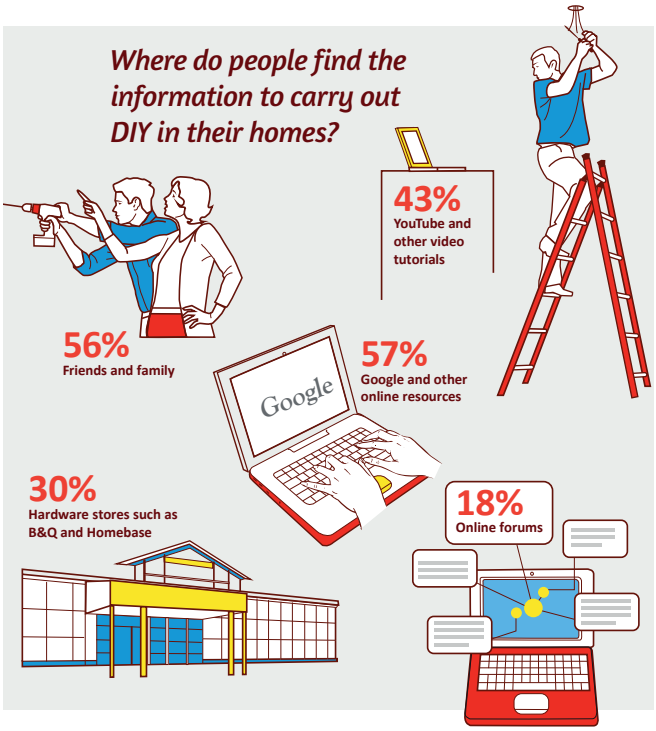
[1] Based on the UK adult population of 49.8 million. 43% of adults would consider using YouTube tutorials or other online 'how to' videos if they needed information or guidance on how to do something practical, or how to fix something in their home.

[2] In a July 2013 Electrical Safety First survey of 4,054 adults, 42% said they would use 'Google and other online resources' to gain knowledge about DIY compared to 57% in a September 2014 survey of 2,106 adults. In the same 2013 survey, 39% said they would seek advice in DIY stores and 29% from DIY television programmes, compared to 30% and 19% respectively in 2014.

*3 According to the European Home Report 2014, 68% of people said they invested in home improvements to increase their home's value, treble the number in 2012: **www.kingfisher.com/files/reports/2014/european_home_report/european_home_report.pdf**, 44% said they would use online advice to fix, restore or build something if it meant they could add value to their home.*

[4] 8% of adults have either caused significant damage to their home or had to pay for costly repairs because of botched DIY.

[5] 26% of adults have come across unhelpful advice or incorrect instructions online relating to DIY. DIY blunders cause half of all serious electric shocks according to research carried out by Electrical Safety First in 2013. Of the respondents who had received an electric shock, nearly half said they were caused by accidents relating to DIY.



Construction firm prosecuted after a labourer cuts through a live cable

In October 2014, a Liverpool-based construction company was prosecuted by the Health and Safety Executive (HSE) for failing to identify that a cable was live prior to clearance work being carried out on a construction site.

In August the previous year, a 22-year-old labourer was removing old pipes and cabling from the cellar of a building on Shaw Street, Liverpool, having been informed that the electrical supply to the building had been disconnected.

However, he was thrown across the room when the grinder he was using cut though an energised cable. He suffered injuries to an elbow and shoulder, but his protective clothing prevented him from suffering burns or being more seriously injured.

Vermont Capitol Ltd of Argyle Street, Liverpool, was fined £2000 and ordered to pay £980 costs after pleading guilty to a breach of the *Construction (Design and Management) Regulations 2007**.

Speaking after the hearing, HSE Inspector Chris Hatton said: "This young worker is extremely lucky to be alive after suffering an electric shock from a mains cable likely to be carrying at least 240 volts. The team on the site had been told all of the utilities entering the site had been disconnected and so the worker had no way of knowing he was actually cutting into a live electricity cable.

"It's vital that developers take the risks from gas pipes and electricity cables seriously and get written confirmation that supplies have been disconnected before starting work. Otherwise lives will continue to be put at risk."

Essential information about electrical safety at work can be found at: **www.hse.gov.uk/electricity**

* Regulation 34(1) of the *Construction (Design and Management) Regulations 2007* states: "Where necessary to prevent danger, energy distribution installations shall be suitably located, checked and clearly indicated."

Campaign aims to raise student awareness of electrical safety in rented accommodation

Thousands of students set off for university last autumn, many leaving home for the first time and going to live in rented accommodation.

So last September, to coincide with Freshers' Week, Electrical Safety First launched a campaign to engage with university students and to highlight some of the dangers that they should look out for in their rented accommodation.

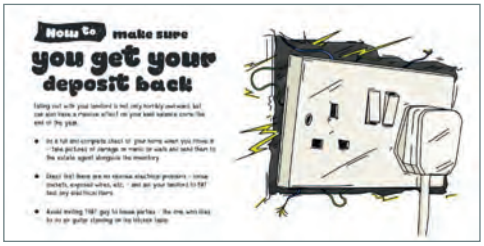
Electrical Safety First wanted to create a campaign to target those new students and to raise their awareness of the electrical hazards they might be faced with in their temporary homes.

Working alongside popular online magazine *Student Beans*, the campaign began with a competition that gave students a chance to win a hamper worth £150. All they had to do was to visit Electrical Safety First's Facebook page and tag a friend with a 'stupidest student's story'.

There was a good response, with some common electrical safety themes arising among the entries including using tin foil in the microwave, leaving the cooker on, and overloading sockets.

Student Beans also ran an article "17 mistakes all Freshers make" that provided some comical insights into university life.

Included in the article were a few electrical safety messages – simple things like checking the room for damaged equipment, avoiding overloading socket-outlets and checking that smoke detectors work.



Following on from the competition, Electrical Safety First launched a student survival guide for the home which doubled-up as a downloadable infographic.

This gave some key tips on things like getting on with housemates, saving money on food, and staying safe around the home.

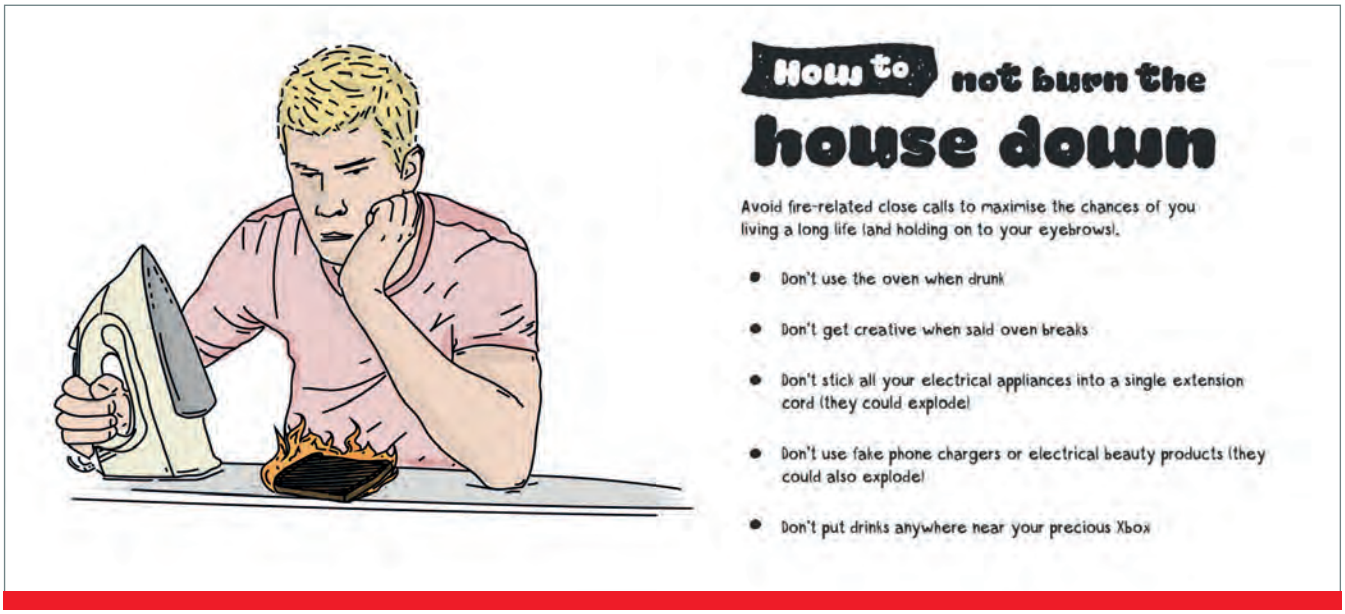
The campaign was shared on social media by universities including the University of Westminster, the University of Bradford Union, Edinburgh Napier University and Robert Gordon University, providing coverage in both England and Scotland.

The *Student Pocket Guide*, *Student Mundial* and *Student Life* also shared the content to their followers on Twitter.

With more than 70% of student accommodation being privately owned, it is important to get those key safety messages across as adequate safety precautions may not always be in place.

With this in mind, the campaign was aimed at raising awareness, and reminded students to take care in their rented accommodation.

Our student page can be viewed at **www.electricalsafetyfirst.org.uk/guides-and-advice/for-students**



Electrical Safety First at the 2014 Party Conferences

Last autumn, Electrical Safety First attended both the Labour and Conservative Party Conferences, participating in fringe events and hosting dinners to connect with politicians and stakeholders including other industry bodies.

The events presented a valuable opportunity to better understand the current political thinking on important issues, to raise our electrical safety concerns and potentially to shape future political policy.

Following on from the conclusions of our joint report with Shelter on electrical safety in the Private Rented Sector (PRS), featured in the previous issue of *Switched On*, our focus at the conferences was on the standard of electrical safety in that sector, and what the political parties could do to encourage improvement.

Dinner events – home improvement

Dinner events were hosted at both conferences to provide an opportunity for interested stakeholders to discuss key issues in a more informal, less hectic environment than at the conferences themselves.

A number of influential representatives attended, including from housing pressure group Generation Rent, Shelter - the UK's housing charity, the Royal Institution of Chartered Surveyors, the Residential Landlord's Association and the Association of Residential Letting Agents.

The discussions at both events were very wide-ranging, covering topics such as how professionalism amongst landlords can be fostered and built upon, and the need for them to use competent persons and maintain basic standards to provide a foundation for good business practice.

Roundtable events

Electrical Safety First was represented on the panel at the Electrical Safety Roundtable fringe events at both conferences. These events brought together representatives from the electrical industry, politicians and charities to discuss how homes across the UK can be made safer.

Discussions at both events included the possibility of mandatory five-yearly wiring checks for PRS homes, the introduction of restrictions on eviction proceedings when safety concerns are raised with the landlord, the use of registered electricians, and the "Home MOT" concept.

The Home MOT

The Home MOT is intended to create a means of assessing the safety of a house or flat, covering all the essential factors including electrical and gas safety.

This would allow potential buyers or tenants of a home to satisfy themselves that the home is fit for purpose, or to be made aware of hazards that might otherwise remain unnoticed until too late.

Widespread demand for Home MOTs would be expected to create pressure to provide higher-quality, safer homes.

This is because, if an MOT report indicated any significant defects, it could be used to drive down the asking price, which in turn would create a financial incentive for property owners to ensure their homes meet a decent standard.

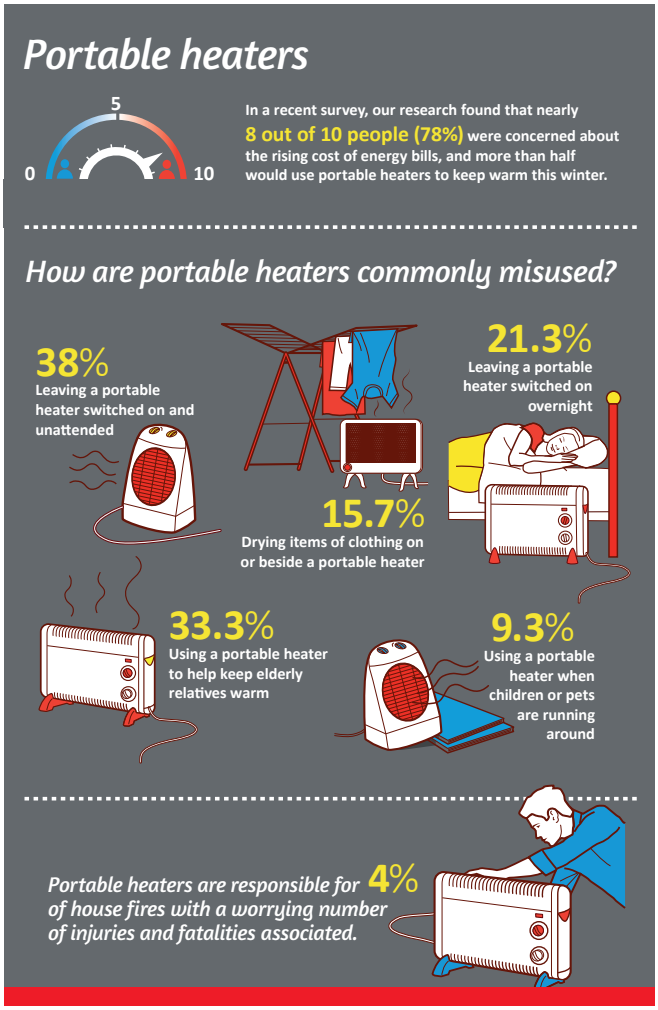
Summary

It was an interesting and successful conference season for Electrical Safety First this past year, and we look forward to building upon it at this coming year's post-election conferences.

Playing with fire

Consumers are risking lives and property by using portable electric heaters unsafely

The ever-rising price of energy is compelling many people to use portable electric heaters as a potentially less expensive way of keeping warm in their homes during winter.



Recent research by Electrical Safety First found that 78% of people were worried about the rising costs of energy bills, and that over half would use portable heaters as an alternative to keep warm this winter.

But the research also revealed that many of them are playing with fire, unaware of the dangers that such heaters can pose to them, their loved ones and their homes if used incorrectly.

38% of those surveyed said they would leave a heater switched on unattended, with over half of them (21% of the total) admitting that they would leave one switched on overnight.

The elderly are particularly vulnerable. Last year, those aged 80 or over accounted for nearly 40% of the fatalities caused by portable heater fires. But even so, 33% of adults would use a portable heater to keep an elderly relative warm.

With portable heaters having caused 73 deaths, around 1000 injuries and more than 3,800 fires since 2009/10,[1] the dangers that can be created by using them unsafely are real.

So, as part of Electrical Fire Safety Week last November, the Charity joined forces with the Department for Communities and Government's *Fire Kills* campaign to help warn householders of the risks associated with using portable electric heaters unsafely.

Electrical Safety First has issued the following simple guidelines to increase awareness of the risks from portable heaters and to help prevent further accidents:

- Buy good quality heaters from recognised manufacturers
- Avoid second-hand heaters
- Put the heaters on a level surface well away from anything that could knock them over
- Make sure they are at least a metre away from any combustible materials such as paper, furniture or curtains
- Never leave portable heaters unattended whilst in use
- Do not control them with an automatic timer
- Never leave them on whilst sleeping
- Do not cover any electric heater
- Never power an electric heater from an extension lead – such leads can be easily overloaded and cause fires
- Inspect heaters regularly for damage and deterioration. If they're not in good condition, don't use them!

Regarding this guidance and the dangers posed by portable heaters, Emma Apter, Head of Communications at Electrical Safety First said: "Having a warm home this winter is something everyone deserves, so we welcome portable heaters as a potentially lower cost option at a time when energy costs are spiralling.

"However, it's vital that the hazards associated with these products are understood – particularly as our research suggests that people are putting themselves and their loved ones at risk by using them in an unsafe way.

"By following our simple guidance, people can stay warm more safely this winter".

[1] *DCLG Fire Statistics Great Britain: www.gov.uk/government/collections/fire-statistics-great-britain*

All data, unless otherwise indicated, is derived from an Electrical Safety First survey conducted in November 2014. The statistics are representative of all UK adults.

Squaring the circle – *Product Safety Roundtable*

Electrical Safety First's roundtable on product safety, recalls and traceability last November attracted a distinguished audience comprising representatives from leading manufacturers, retailers, trade bodies and enforcement agencies.

Discussions at the event focused primarily on recall notices and traceability systems, and the impact of consumer behaviour on recall effectiveness.

One of the ideas arising from the roundtable was to produce a 'process map' to break down the complexity of product design, production and after-market processes, to enable specific issues to be identified, prioritised and addressed.

This approach would support an overall improvement in product safety, particularly recall and traceability outcomes.

Other discussions considered how new technologies such as Radio Frequency Identification (RFID) or Quick Response (QR) codes could be used to more easily identify both manufacturers and their customers in the event of a recall.

But, once again, the product owner/user issue took centre stage at the event – with previous research indicating that almost two million adults have deliberately ignored the recall of an electrical product.

"The need to improve consumer awareness of – and response to – product recalls is one we are acutely aware of", explains Martyn Allen, Head of Technical at Electrical Safety First.

"So we've commissioned a detailed consumer research project to help identify the best format and communication channels for recalls, and to help manufacturers and retailers understand the key motivators for consumers to act".

Update on the Scottish Private Rented Sector

Although achieving great success with the Scottish Housing Bill, as outlined in the previous issue of *Switched On*, Electrical Safety First's work to improve conditions in Scotland's private rented sector (PRS) continues.

A working group, independently chaired by Professor Douglas Robertson of the University of Stirling, has been established to look at a range of issues including giving increased security of tenure to private tenants.

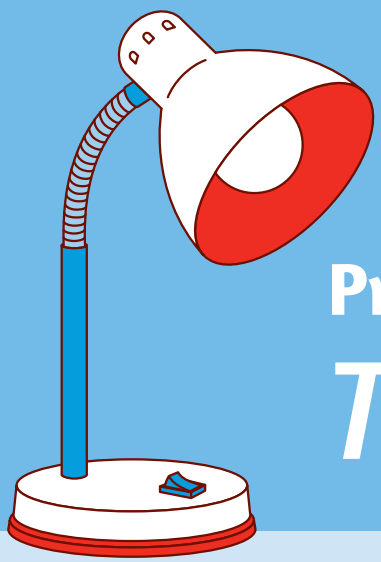
The working group comprises representatives from a wide range of interested bodies including:

- Association of Residential Letting Agents
- Association of Local Authority Chief Housing Officers
- Chartered Institute of Housing
- Citizens Advice Scotland
- Confederation of Scottish Local Authorities
- Scottish Association of Landlords
- Scottish Land and Estates
- Scottish Federation of Housing Associations
- Scottish Property Federation
- Shelter Scotland

Modelling itself on the type of coalition developed as part of the Scottish PRS campaign, the working group aims to develop an approach that will be mutually beneficial to both tenants and good landlords alike.

The Charity was also delighted to be invited to join a Scottish Government-led consortium which will look at developing a common, cross-tenure house condition standard.

Given that the standards for social housing are considerably more developed than those imposed on the PRS, the consortium will help to eliminate many safety hazards and progress Scotland's aim of sustainable and safe housing for all, something that reinforces Electrical Safety First's belief that everyone deserves to feel safe in their own home.



Product Safety Conference 2014
Time for change

In November, Electrical Safety First held its fourth product safety conference, an event that is now well established as the UK forum on electrical product safety and a highlight of the industry calendar.

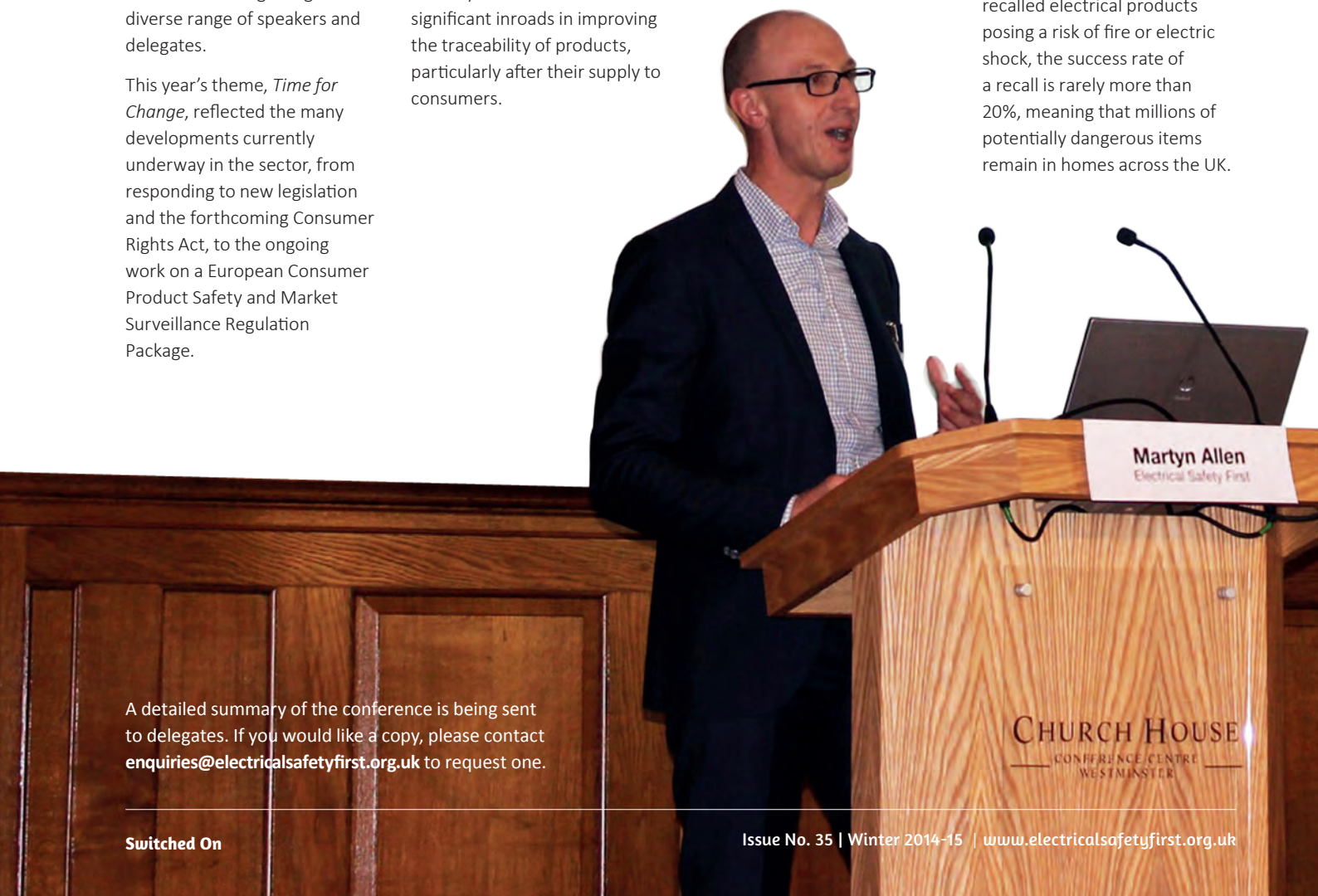
Hosted by award-winning writer and broadcaster Declan Curry and Ron Gainsford OBE, Vice President of the Trading Standards Institute, the conference brought together a diverse range of speakers and delegates.

This year's theme, *Time for Change*, reflected the many developments currently underway in the sector, from responding to new legislation and the forthcoming Consumer Rights Act, to the ongoing work on a European Consumer Product Safety and Market Surveillance Regulation Package.

Whilst presenting challenges, these developments are giving the sector an opportunity to unite in improving the effectiveness of the product recall system and to make significant inroads in improving the traceability of products, particularly after their supply to consumers.

Although RAPEX (the European Union's system for the notification of dangerous consumer products) has identified electrical products as the third most frequently notified product group, the product recall system in the UK is simply not working.

And despite the majority of recalled electrical products posing a risk of fire or electric shock, the success rate of a recall is rarely more than 20%, meaning that millions of potentially dangerous items remain in homes across the UK.



A detailed summary of the conference is being sent to delegates. If you would like a copy, please contact **enquiries@electricalsafetyfirst.org.uk** to request one.

This is not a just a problem within industry. Consumer indifference and a lack of awareness of the potential dangers of recalled products make a significant contribution to the low recall success rate.

The morning sessions at the conference discussed the new legislation, its impact on the supply chain and whether it goes far enough to protect the consumer. They also covered the key stages of a product recall, stressing the importance of pre-market assessment and of being 'recall-ready' to take swift action.

In the afternoon, the sessions considered effective communication strategies during a recall, and solutions for tracing products to their owners. They also reviewed product registration initiatives such as the 'Register my Appliance' initiative being developed by AMDEA (**www.registermyappliance.org.uk**), and the extended use of technology such as traditional barcodes, QR (Quick Response) codes and RFID (Radio Frequency Identification).

The afternoon also saw the launch of a new research report, *Consumer Voices on Product Recall*, which analyses consumer experience of product recalls, looks at the motivating factors that make a consumer respond to – or ignore – a recall notice, and outlines a number of simple but effective changes that manufacturers can implement to improve recall success rates.

Although the registration of all newly-bought products would instantly improve traceability, the research confirmed that people were not keen to register them, with over a third concerned that their details would be used for marketing.

Only a fifth of people surveyed had actually responded to a recall, with 5% of respondents saying they had knowingly ignored a recall notice.

Reasons given for not acting on a recall notice included:

- the cost of a product versus the perceived cost of returning it
- a lack of appreciation of the risk – many people think that a recalled product will just stop working if a fault occurs and if it doesn't, then it's fine to carry on using it
- the inconvenience of the recall process – such as having to take time off work so the affected item can be modified or repaired in the home.

However, 77% said that they would act if they knew the dangers.

The report highlights that effective use of language is key to a successful recall, together with the use of a variety of communications channels.

People under the age of 45 expressed a preference for digital communication but, generally, a mixture of digital and direct contact was popular.

A copy of the full report can be found at: **www.electricalsafetyfirst.org.uk/news-and-campaigns/campaigns/product-recall**

Electricity suppliers once again say NO to permitting electricians to access service cut-out fuses

Electricians currently have a number of options, authorised and otherwise, when needing to temporarily de-energise domestic properties in order to carry out certain work safely – such as replacing a consumer unit.

The two authorised options are for the electrician to arrange in advance for the electricity supplier or meter operator to withdraw and later replace the cut-out fuse, or for the supplier or meter operator to install, or enable the electrician to install, an isolator between the meter and the consumer unit.

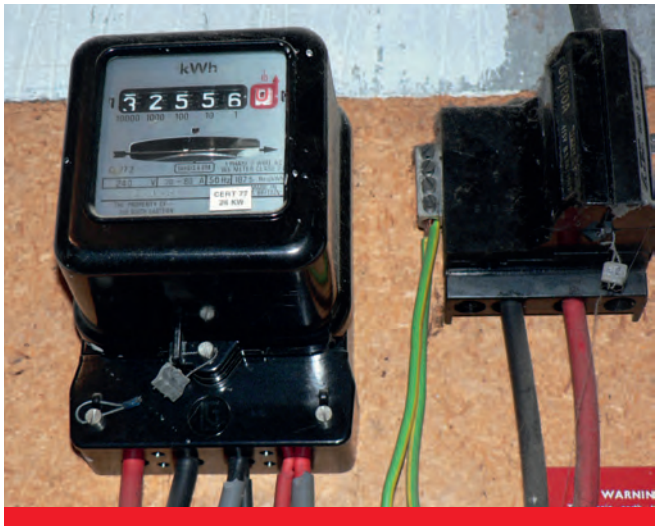
Both of these options incur additional costs for the customer. Both are also time-consuming and reportedly frustrating for electricians, adding unnecessary bureaucracy and costs to a task generally considered to be well within the ability of any competent electrician.

The unauthorised options for electricians are to remove and replace the cut-out fuse themselves (believed to be by far the most commonly used of all the options), or to work live – the most dangerous option.

With an estimated 400,000* or more jobs every year in British homes requiring temporary isolation of the electricity supply for safety reasons, thousands of electricians face this conundrum every day – either to try to make arrangements with the authorised parties in advance, or to take the far quicker, convenient and cost-free - but unauthorised - direct route of removing the cut-out fuse themselves.

It is easy to understand why many, if not almost all, electricians evidently continue to choose the unauthorised option.

With the government's smart meter programme aiming to replace the electricity meter in all British homes by 2020, Electrical Safety First, with the support of several key industry bodies, took the opportunity in 2011 to propose a simple engineering solution to the conundrum, which electricians had been faced with even then for well over a decade.



That solution was for the government to include a requirement for an integral isolator in their minimum technical specification for smart electricity meters.

But despite the clear business case presented, the proposal was rejected by the Department of Energy and Climate Change (DECC) – a sadly lost cost-effective opportunity. They did, however, give an assurance that they would work with the relevant regulatory bodies to help find an alternative solution to this protracted safety issue.

That assurance indirectly led to a renewed proposal to develop a scheme to authorise competent electricians to access service cut-out fuses in domestic premises for safe isolation purposes – an initiative primarily led by UK Power Networks (East), with the support of Electrical Safety First.

The implementation of such a scheme would require a change to the Distribution Connection and Use of System Agreement (DCUSA) – a multi-party contract between the licensed electricity distributors, suppliers and generators of Great Britain, which is overseen by the electricity regulator Ofgem.

In advance of a formal proposal being submitted to make the necessary changes to the agreement, it was considered prudent to make preliminary enquiries to flush out any significant issues.

UKPN therefore produced a discussion document which floated a proposal that aimed to address the objections electricity suppliers had made to a similar proposal about five years ago.

Subsequently, a 'request for information' was issued by the DCUSA secretariat to gauge the

acceptability of the proposal to all the DCUSA parties, including the distribution network operators (who own the service cut-outs) and the electricity suppliers.

Responses were also invited from non-DCUSA parties, including electrical installer scheme operators and Electrical Safety First.

The responses received from the electrical installation industry were overwhelmingly in support of developing a scheme. In a survey of 900 installers, over 90% said they would join an authorisation scheme, as it would overcome the difficulties of the current official process for arranging temporary isolation, and benefit their customers.

Sadly though, as with the previous efforts by the electrical installation industry to introduce an authorisation scheme, the proposal was opposed in principle by a large majority of the electricity suppliers – one supplier objecting vehemently to the idea of an authorisation scheme for electricians in any shape or form.

Given the lack of support from electricity suppliers, UKPN decided - with the support of Electrical Safety First – not to take forward a formal change proposal due to the almost certain negative vote by the suppliers.

Our continuing disappointment and frustration is shared not only by electrical installers, but also by the majority of the electricity distributors who were supportive of the development of a scheme.

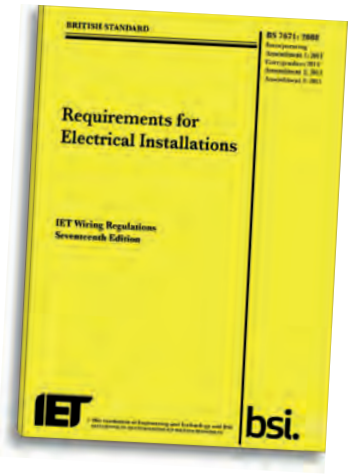
Our next step is to go back to DECC to remind them of their commitment to help find a satisfactory solution to this longstanding safety issue, and to seek their direction on how it can be progressed.

We will report further on the issue, including on what DECC has done to help find an alternative solution, in future issues of *Switched On*.

**Based on notification data produced in the operation of Part P of the Building Regulations for England and Wales*

Amendment 3 to BS 7671: 2008

The third amendment to *BS 7671: 2008 Requirements for Electrical Installations* is due to be published on 1 January 2015. Following a six month transition period, it will come into full effect for the design of installations on 1 July 2015.

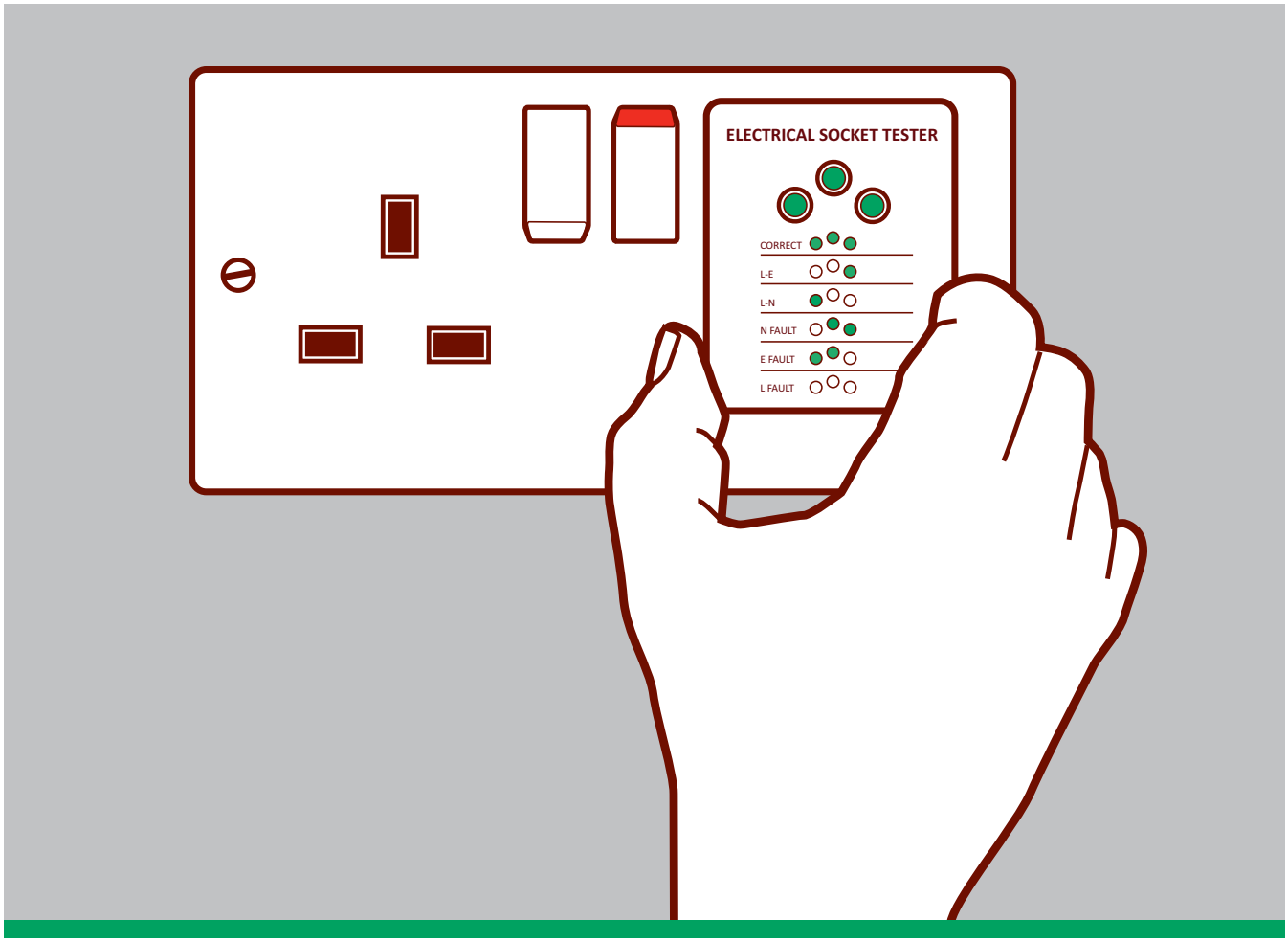


The changes have been incorporated in a new full version of the regulations which, in accordance with traditional colour sequence, has a yellow cover.

The new version incorporates the corrigendum to Part 7 Medical Locations issued in June 2013 together with Amendment 2, which was the new Part 7 for electric vehicle charging stations issued in July 2012.

Significant changes in Amendment 3 include:

- Additional protection by means of an RCD (that is an RCD having a rated residual operating current ($I_{\Delta n}$) not exceeding 30 mA) will be required for socket-outlets rated up to 20 A (and for mobile equipment rated up to 32 A for use outdoors) for **all** installations. However, for socket-outlets rated up to 20 A, there is an exception for RCD protection for a specific labelled or otherwise suitably identified socket-outlet provided for the connection of a particular item of equipment, or where, other than for an installation in a dwelling, a documented risk assessment determines that RCD protection is not necessary
- The enclosures of switchgear assemblies including consumer units will need to be manufactured from non-combustible material or be enclosed in a cabinet or enclosure constructed of non-combustible material. (See the article on page 16 for further details.) A note to this regulation states that the implementation date is 1 January 2016, but that this does not preclude compliance with the regulation prior to that date
- New requirements for the methods of support for wiring systems in escape routes. An article looking at these new requirements was published in Issue 34 (Autumn 2014) of *Switched On*
- Additional protection by means of an RCD will be required for cables concealed in a wall or partition at a depth of less than 50 mm for **all** installations, if other methods of protection including the use of cables with an earthed metallic covering or mechanical protection are not employed. This also applies to a cable concealed in a partition, irrespective of the depth of the cable, where the construction includes metallic parts other than fixings. There is still an exception for cables forming part of a SELV or PELV circuit
- Additional protection by means of an RCD is required for all low voltage circuits serving a location containing a bath or shower, or passing through zones 1 and/or 2 and not serving the location.



Plug-in socket-outlet test devices and their limitations

It is important to recognise that no socket-outlet test device, however sophisticated, can be relied on alone to provide full assurance that a socket-outlet is safe to use. This is because such devices cannot verify that all of the relevant requirements of the UK standard for the safety of electrical installations, *BS 7671*, have been met.

Following an assessment of a sample of simple* socket-outlet test devices, the Health and Safety Executive (HSE) expressed concern about them being relied upon by some as the sole means of checking that socket-outlets are 'safe' to use, either as part of the initial verification of newly-installed socket-outlets, or for the periodic testing of existing socket-outlets.

The reason for this concern is that, whilst such test devices are able to give a quick indication of some of the most basic electrical faults that can be detected at socket-outlets, the ability of many, and in particular the simpler versions, is significantly limited in terms of confirming that socket-outlets are 'safe' to use.

For example, most are unable to indicate whether neutral and protective conductors are transposed, and simple socket-outlet testers cannot prove the adequacy of protective earthing arrangements.

Following up on the HSE concern, Electrical Safety First, in cooperation with a number of industry bodies, produced *Best Practice Guide No. 8* to raise awareness of the limitations of plug-in socket-outlet test devices.

For ease of reference, the various types of device were placed in one of three categories: 'simple', 'advanced', and 'professional'.

Professional earth fault loop impedance test instruments are not discussed in this article as they are intended to be used only by competent persons familiar with their correct use and able to interpret the results obtained during testing.

A brief overview follows of the simple and advanced types:

Simple socket-outlet test devices

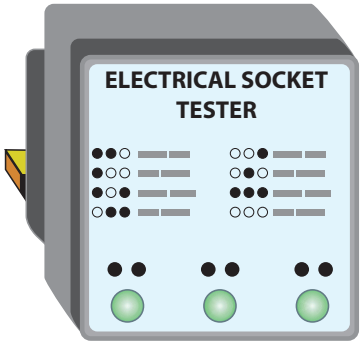
Simple socket-outlet test devices are usually similar in size and appearance to a 13 A plug, and typically cost less than £20.

Such devices give a general indication of whether a socket-outlet is functional and should be able to detect basic faults such as reversed line and protective conductors and the absence of a protective earth connection, both of which are potentially dangerous.

However, whilst simple devices are able to detect a complete absence of a protective earth connection, they cannot indicate a value of earth fault loop impedance. It is therefore possible for a user to assume that a socket-outlet is safe to use even where the earth fault loop impedance is dangerously high.

Users may be completely unaware of this significant functional limitation as it may not be declared on the device, its packaging or in the associated instructions.

If a test device does not display either a numerical value of earth fault loop impedance or the numerical range into which the loop impedance falls, then it is a simple socket-outlet test device and must not be relied upon to indicate whether a socket-outlet is safe to use.

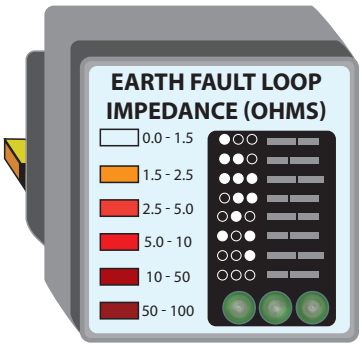


Advanced socket-outlet test devices

'Advanced' devices are more complex than simple ones in that they can determine and indicate earth fault loop impedance values – albeit in relatively broad bands. They typically cost between £50 and £100.

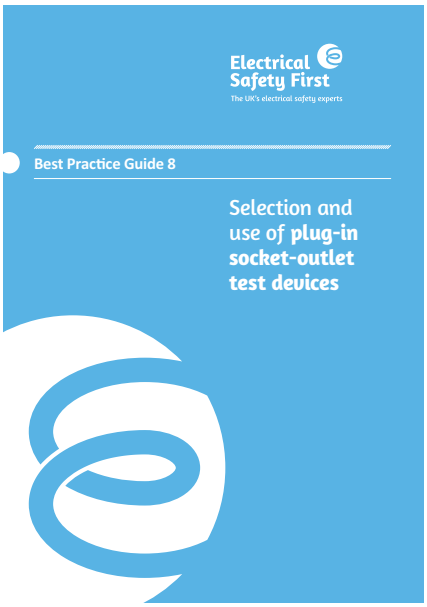
Advanced devices have all the check functions of simple test devices, including reversed line and protective conductor, and reversed line and neutral, but are also able to display the numerical range into which the circuit earth fault loop impedance falls.

However, this information is often insufficient to determine whether a socket-outlet is adequately earthed for safety, because such a determination requires knowledge of other parameters including the system earthing arrangement and the characteristics of the device protecting the circuit.



Best Practice Guide

Further detailed information and guidance about plug-in socket-outlet test devices, including a chart comparing their capabilities and limitations, is given in Electrical Safety First's *Best Practice Guide No. 8*, which can be downloaded free of charge from our website at: **www.electricalsafetyfirst.org.uk/electrical-professionals/best-practice-guides**



**It is important to distinguish between simple socket-outlet test devices that have been available for many years and are in widespread use, and certain more advanced designs. Most simple socket-outlet test devices indicate basic wiring faults. There are other, more sophisticated, socket-outlet test devices available which will, in addition, display either the range of numerical values into which the earth fault loop impedance falls, or the numerical value of the loop impedance. Such devices are considered to be either 'advanced' or 'professional', rather than 'simple', socket-outlet test devices for the purposes of this article.*

Preventing consumer unit fires – the way ahead

The third amendment to *BS 7671: 2008*, which is due to be published in January 2015, will include a new requirement that is intended to address the increasing number of fires in homes reportedly originating at consumer units.

With effect from January 2016, the enclosures of consumer units installed in domestic premises will have to be constructed of non-combustible materials or, alternatively, the consumer unit will have to be placed in a housing constructed of non-combustible material.

The deferred implementation date does not preclude earlier compliance with the new requirement.

The proposal in the Draft for Public Comment to permit the alternative use of consumer units or enclosures constructed of 'not readily combustible material' (meeting a 960 °C glow-wire flammability test) as a means of reducing the risk of consumer unit fires was not adopted in the final version of the amended standard.

The British Electrotechnical and Allied Manufacturers' Association (BEAMA) published a Technical Bulletin last October to explain the intent behind the new requirement for consumer units by means of answers to a series of questions likely to raised by those seeking the comply with it.

The full BEAMA Technical Bulletin, entitled *'Enhanced fire safety from consumer units',* follows this article for information.

Further fire safety issues

Whilst the new requirement in *BS 7671* will help prevent the spread of a fire originating at a consumer unit, it does not address a number of potential causes of the fire itself.

Evidence shows that many of the fires originating at consumer units are caused by inadequate internal connections and/or poor installation practice.

For a number of years, Electrical Safety First (and previously the Electrical Safety Council) has been looking into the issue of consumer unit fires. During this time we have worked to identify the causes of the problem and find practical solutions to make electrical installations safer.

We have commissioned research and compared our findings with those obtained in similar research by manufacturers, Fire and Rescue Service investigation teams and government departments.

Fig 1. *The aftermath of a consumer unit fire*

Workmanship

Poor workmanship by installers is often cited as a cause of bad connections. *BS 7671* contains a fundamental requirement for the application of good workmanship, taking account of manufacturers' instructions (134.1.1).

When considering good workmanship in relation to the installation of a consumer unit, particular points are that:

- appropriate measures are put in place to ensure conductor sheathing and insulation is not damaged at cable entry points
- any cable entries are made in a manner that least affects the integrity of the consumer unit in terms of its fire resistance
- cables are terminated in a way that does not place undue strain on the connections
- terminals are sufficiently tightened in line with manufacturers' recommendations.

In order for a connection to be effective, reliable and durable, consideration must be given to both the type and number of conductors being terminated, and the nature of the termination itself.

Care should be taken to ensure that terminal screws are not tightened onto insulation rather than bare conductor, that conductors are correctly placed (for example on the correct side of the moving plate in a cage-clamp terminal), and that the recommended number and size of conductors per terminal is not exceeded.

Changes to product design

Over time, the types of terminal used in consumer units have changed from simple tunnels with one or two screws directly gripping the conductor, to cage-clamp types (see Fig 2).

Cage-clamp terminals can provide a sound connection when used correctly, but there have been instances of overheating and fire where conductors have been fixed incorrectly in such terminals, for example on the wrong side of the moving plate.

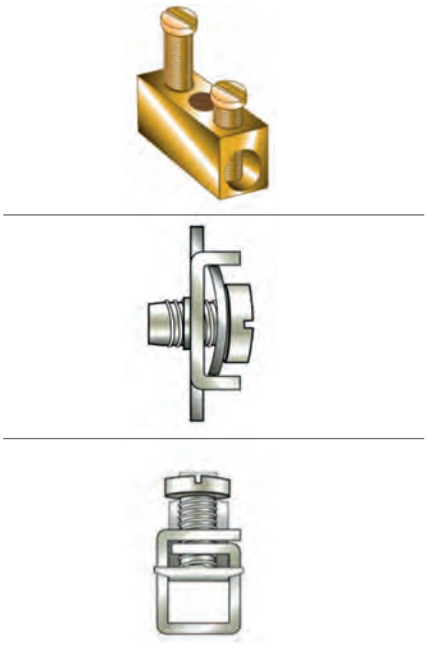


Fig 2. *Typical terminal arrangements. (Top, tunnel with direct gripping by screw or screws. Centre, basic clamp. Bottom, cage-clamp*

Cable preparation

Although not called for in product standards, a degree of preparation to conductors beyond simply removing the insulation can improve the effectiveness of connection for certain types of cable.

For example, doubling over of a, relatively speaking, small-sized conductor can help to 'fill' a terminal, and twisting a stranded conductor could minimise 'bedding-in' and so allow a more durable connection to be made.

Tightness of terminals

The various connections in the latest types of consumer unit might need to be tightened to five or more different torque settings.

This means that, where a torque screwdriver is used to tighten them, it will be necessary to change the torque settings several times during the installation of the consumer unit, which can be inconvenient and time-consuming.

Whilst accepting the correlation between minimum required torque settings and thread and screw-head sizes, Electrical Safety First would like to see the number of different settings reduced to only one or two for all the terminations in consumer units, to make correct installation quicker and easier.

Also, Electrical Safety First is concerned that the minimum required torque settings given in product standards - and reflected in manufacturers' instructions – might be too low to provide electrically sound and durable connections.

In tests[1] carried out for Electrical Safety First it was possible, with minimal effort, to pull out conductors terminated into some designs of switch disconnector that had been tightened to the minimum torque level specified in the relevant product standard.

Electrical Safety First would therefore like to see further investigation into the effectiveness and reliability of the minimum torque settings stated in product standards for components mounted inside consumer units, to confirm whether or not they are adequate for safety.

Manufacturers' instructions

A number of fire investigations have identified factory-made connections as the cause of consumer unit fires. Such poor terminations may have resulted from quality control issues, loosening in transit, or as a result of adherence during manufacture to inappropriately low torque settings given in product standards.

Regrettably, some manufacturers' instructions warn installers not to attempt to work on such factory-made connections and so the equipment will be energised with these connections left unchecked.

Electrical Safety First would like to see all such warnings removed and for manufacturers to instead instruct installers to confirm the tightness of **all** connections during the installation of a consumer unit.

Smart meter programme

When in the near future the main phase of the smart meter installation programme gets underway, some disturbance of the cables between the electricity meter and the consumer unit is likely in millions of homes across Great Britain.

In some situations, disturbance of the cables could detrimentally affect the tightness of their connection at the main switch in the consumer unit, which could eventually lead to overheating and an increased risk of fire.

At the present time, however, despite concerns raised by Electrical Safety First (see Issue 24 of *Switched On*), those responsible for fitting smart and other meters have no obligation to check the tightness of the connections they may have disturbed at the consumer unit main switch before leaving the property.

There is a requirement in the industry's *Meter Operation Code of Practice Agreement* for them to consider precautions such as clipping the cables or retightening the connections if in their assessment there is a "higher than normal risk of disturbance of customer equipment and terminations".

However, given the nature and size of the smart meter programme, only time will tell whether or not this on-site risk assessment approach is a sufficiently reliable precaution.

Looking ahead

Looking ahead, Electrical Safety First, in cooperation with other interested parties, will continue to look into the various safety issues raised in this article, and any developments will be reported in future issues of *Switched On*.

[1] *www.electricalsafetyfirst.org.uk/electrical-professionals/product-safety-unit/tightness-of-meter-tails/*

TECHNICAL BULLETIN

Enhanced Fire Safety from Consumer Units

Amendment 3 to BS 7671: 2008

Requirements for Electrical Installations (IET Wiring Regulations) will be published on 5th January 2015. These new and changed regulations will apply to all Electrical Installations designed after 1st July 2015*. Whilst there are many additions and changes being introduced through this Amendment, it is expected that there will be specific new regulations relating to the enhancement of Fire Safety.

One particular regulation, 421.1.201, is expected to address the selection of Consumer Units in domestic (household) premises and, as such, introduces a new enhanced functionality to this equipment. The regulation is expected to state:

"Within domestic (household) premises, consumer units and similar switchgear assemblies shall comply with BS EN 61439-3 and shall:

I. Have their enclosures manufactured from non-combustible material, or

II. Be enclosed in a cabinet or enclosure constructed of non -combustible material and complying with regulation 132.12.

Note 1: Ferrous metal e.g. steel is deemed to be an example of a non combustible material.

*Note 2:*The implementation date for this regulation is the 1st January 2016. This does not preclude compliance with this regulation prior to this date."*

The intent of regulation 421.1.201 is considered to be, as far as is reasonably practicable, to contain any fire within the enclosure and to minimise flames from escaping, caused mainly as a result of poorly installed connections. The following Q&A's cover the key points:

1. What is a definition of "non-combustible"?

There is no published definition for "non-combustible" that aligns with the intent of regulation 421.1.201. Ferrous metal, e.g. steel, is deemed to be one example of a non-combustible material that meets the intent of the regulation.

2. What constitutes a "non-combustible enclosure"?

A non-combustible enclosure includes base, cover, door and any components, e.g. hinges, covers, screws and catches, necessary to maintain fire containment; see Diagram 1. Blanks and devices are contained within the non combustible enclosure.

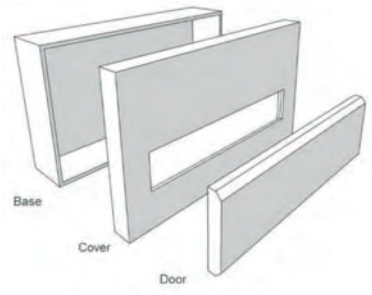


***Diagram 1.** Example of non-combustible enclosure components*

3. How is account taken of cable entries into a "non-combustible enclosure" with respect to containment of internal fire and escape of flames?

Good workmanship and proper materials must be applied by the installer. The cable installation entry method shall, as far as is reasonably practicable, maintain the fire containment of the enclosure. Account shall be taken of the manufacturer's instructions, if any.

4. What is meant by "Similar switchgear assemblies"?

"Similar switchgear assemblies" are assemblies used for the same fundamental application as consumer units.

5. Does regulation 421.1.201apply to consumer units and similar switchgear assemblies installed in domestic (household) garages and outbuildings?

Yes, the intent of regulation 421.1.201 is that it applies to consumer units and similar switchgear assemblies to *BS EN 61439-3* inside all domestic (household) premises including their integral/attached garages and outbuildings or those in close proximity.

It is important to note that this change in product specification will require changes and increased vigilance to installation practices and ongoing attention to reducing the root causes of the risk of fire. In this respect installation by a skilled person competent in electrical installations in households remains absolutely vital.

A single point of reference for consumers seeking an electrical contractor is now available in England and Wales in the form of the 'Registered Competent Person - Electrical' register **www.electricalcompetentperson.co.uk** and in Scotland in the form of the Scottish Government's Certification Register **www.certificationregister.co.uk**

If you require any further information on this subject, please do not hesitate to contact our members as listed in the directory of Members on the BEAMA website **www.beama.org.uk/en/our-members**

(Navigation: Members Directory>> Circuit Protection & Control>> Consumer Units)

If this Technical Bulletin was of interest. you may also be interested to read other BEAMA publications that can be accessed and downloaded via the BEAMA website:

- Part P FAQ's for multi-row consumer unit installation height
- Safe selection of devices used in assemblies
- Surge Protection device guide

The content of this Technical Bulletin is fully endorsed by the following organisations:

Have you ever been asked...

...should changes to the Wiring Regulations be applied retrospectively?

The answer is - not necessarily.

The content of *BS 7671 - Requirements for Electrical Installations* (also known as the IET Wiring Regulations) is reviewed and updated about every three years to keep pace with the continuing development of the international and equivalent European standard upon which the UK standard is largely based.

Some of the amendments have introduced significant step-changes to technical requirements that were considered quite satisfactory when previous versions of the Wiring Regulations were current.

Such changes can give rise to misunderstandings when installations are inspected and tested some years after they were put into service.

An example

By way of illustration, this article focuses on how the requirements for additional protection by means of an RCD have changed over recent years. Such additional protection requires RCDs having a rated residual operating current ($I_{\Delta n}$) not exceeding 30 mA.

There are now many more situations where additional protection by RCD is required for enhanced safety reasons.

In the 17th Edition of the Wiring Regulations including Amendment 2 of 2013, additional protection by RCD is required for:

- socket-outlets with a current rating not exceeding 20 A intended for general use
- mobile equipment with a current rating not exceeding 32 A for use outdoors
- cables concealed in walls or partitions at a depth of less than 50 mm from the surface which are not protected by an earthed metallic enclosure or mechanical protection sufficient to prevent penetration by nails, screws or other fixings
- all circuits of a location containing a bath or shower.

In the 16th Edition (circa 1991-2008), additional protection by RCD (then called supplementary protection) was required only for socket-outlets of rating 32 A or less that were reasonably likely to be used to supply portable equipment outdoors.

Looking back still further to the 15th Edition (circa 1981-1991), the requirement was only to provide at least one suitably located socket-outlet with supplementary (additional) protection by RCD, this socket-outlet in effect being the designated point of connection for portable equipment to be used outdoors.

Periodic inspection

When a periodic inspection is carried out on the electrical installation in a property, the installation needs to be assessed against the requirements of the version of *BS 7671* current at the time of the inspection, irrespective of the age of the installation.

However, as stated in the introduction to *BS 7671*, although installations designed and constructed in accordance with earlier versions of the standard may not comply with the current standard in every respect, this does not necessarily mean that they are unsafe for continued use or require upgrading.

But on the other hand, some aspects might require upgrading. For example, when a periodic inspection is carried out at this point in time – based upon the 17th Edition requirements - it would be reasonable for the person carrying out the inspection and testing to give a classification code C2 (meaning that the observed condition is potentially dangerous) where additional protection by RCD is absent for a low voltage socket-outlet:

- so located as to be reasonably likely to be used to supply portable equipment outdoors, or
- in a location containing a bath or shower (other than a shaver supply unit).

With the exception of a shaver supply unit, a low voltage socket-outlet within a distance of 3 m horizontally from the boundary of zone 1 in a location containing a bath or shower should be given a classification code C2, whether or not having additional protection by RCD. This is because the Wiring Regulations prohibit the installation of such socket-outlets there for safety reasons.

Even where just a single observation is classified as C2, the overall outcome of the periodic inspection must be 'unsatisfactory', meaning that appropriate remedial action needs to be taken by the installation owner.

But a classification code C3 (meaning that improvement is recommended but not strictly necessary for safety) would be appropriate where additional protection by RCD is absent for:

- a socket-outlet that is so located as to be unlikely to be used to supply portable equipment outdoors
- cables installed at a depth of less than 50 mm from the surface of a wall or partition, other than for those incorporating an earthed metallic covering or enclosed in earthed metalwork, or protected against penetration by nails and the like
- any circuits of a location containing a bath or shower where satisfactory supplementary bonding was found to be present.

Observations recorded as classification code C3 would not necessarily mean that the installation is unsatisfactory for continued use.

Further guidance on the use of electrical installation condition report classification codes can be found in Electrical Safety First's *Best Practice Guide No 4* which, together with all the other Best Practice Guides, can be downloaded free of charge from: **www.electricalsafetyfirst.org.uk/electrical-professionals/best-practice-guides**

New guidance to help protect consumers against the potential danger from recalled electrical products

Following a series of high-profile tragedies caused by faulty electrical products in homes, Electrical Safety First has produced guidance to help householders guard against potential danger from products they might be unaware have been recalled by the manufacturer because of known defects.

Because of the ineffectiveness of the current product recall system, Electrical Safety First recommends that, in order to stay safe, consumers should:

- always register electrical products they purchase using the card provided, or online. Whilst many believe that registration is simply for marketing purposes, the information has until now provided the best, if not the only, direct means of contact a manufacturer had with purchasers in the event of a product recall
- alternatively, to avoid being contacted for marketing purposes, register their electrical products on the new '*Register My Appliance*' website – **www.registermyappliance.org.uk**
- use Electrical Safety First's product recall checker at **www.electricalsafetyfirst.org.uk/recall** to find out if any of their electrical products have been recalled, and then to periodically revisit the website to check for updates
- disconnect a product immediately if it begins to make unusual noises, starts to smoke or shows other signs of overheating, and contact the manufacturer without delay.

"Faulty electrical products pose a real threat to consumers, their families and their properties, but following our simple guidance can help to significantly reduce the risks" says Martyn Allen, Head of Technical at Electrical Safety First.

"However, the greatest responsibility for keeping the public safe from products known to be defective lies with the manufacturers and authorities.

"The product recall system in its current state in the UK is simply not working. Recalls currently have a success rate as low as 10-20%, and consumers are confused about how to deal with faulty items[1].

"It is our hope that the manufacturers and authorities will continue to work more closely together, and with us, to make the product recall system far more effective.

"The focus has to be on reviewing industry guidance, improving traceability of products and, in particular, initiating better data sharing. These steps, coupled with consumers following our advice, will help to ensure that further tragedies caused by known defective products are avoided".

[1]*Statistics taken from Electrical Safety First's March 2014 report on Appliance Safety:* ***www.electricalsafetyfirst.org.uk/mediafile/100145067/Improving-Electrical-Appliance-Safety.pdf***

Back issues of *Switched On*

Previous issues of Switched On are available to read or download from our website.
www.electricalsafetyfirst.org.uk/switchedon