

Scottish Construction Safety Group

Minutes of the meeting of 20th February 2020

There were 24 members and guests present. Robert Bradford informed the Group that it has been three years since we discussed Electrical as a topic and subsequently introduced Dave Forrester Director of Select.

SELECT is the trade association for the electrical contracting industry in Scotland. Founded in 1900 as The Electrical Contractors' Association of Scotland, SELECT became the first trade association in the world to serve the Electrical Industry. (Electrical Contract Association in England). SELECT is the largest Trade Association in Scotland with over 1200 member businesses who employ over 15,000 electricians. They operate the largest construction Modern Apprenticeship scheme in Scotland with the 2 main objectives being to:

- Protect public safety by driving up industry standards
- Provide for the future of the industry by training apprentices

The Current situation:

The SJIB (Scottish Joint Industry Board for the Electrical Contracting Industry) has a register of 15,000 electricians but independent research suggests there are around 23,000 electricians operating in Scotland. SELECT's own research suggests that around 3500 of those are not qualified. The work that they might be doing accounts for about 7% of all fires in Scotland (relates to 360 incidents) and costs £9.6m to rectify, usually through insurance claims which pushes all of our premiums up.

SELECT commissioned a report on the economic impact of regulating electricians in Scotland. The report estimated that the "human cost" of faulty electrical work in damage from electrical fires, human costs of injury and death caused by electric shock and the general costs of replacing poor or dangerous work is around £120m per year. That report also pointed out that regulation would offer an opportunity to grow the industry by attracting more aspirational entrants, where reward and reputation is enhanced, and the value of an electrical apprenticeship is more widely accepted.

As things stand at the moment, anywhere in the UK, anyone can call themselves an electrician. Buy a van, buy some tools, set up a trade account at a wholesaler and start trading as an electrician. No insurance, no comeback for the customer, perhaps dealing in cash only etc. These people generally charge less than qualified electricians and so undermine those who have got themselves qualified and keep their knowledge up to date.

British Standard BS 7671 "Requirements for Electrical Installations. ... The current version is BS 7671:2018 (the 18th Edition) issued in 2018 which came into effect 1 January 2019.

Unqualified electricians have little or no knowledge of up to date industry standards and as the majority of the installation is hidden in the fabric of the building, who's to know what dangers might be hidden?

In the Gas Industry there is a Gas Safe Register – this provides both business and individual registration. In other countries such as US and Canadian states who operate a licensing scheme. Stats show that there was a reduction in the number of injuries and deaths of electricians after licensing was introduced. Closer to home, European countries operate different types of schemes. One of the best known throughout Europe is the German "Meister" scheme which requires those who run businesses to hold technical and business skills qualifications.

The Scottish Government has therefore set up an Electricians Working Group and has committed to three things:

- *To first and foremost protect consumers*
- *Secondly, to protect scrupulous traders and create an inhospitable environment for miscreants i.e. the cowboys of the industry*
- *And finally, to maintain an environment that allows competition within the provision of electrical services to thrive*

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The benefits of implementing these are obvious. We estimate the net reward to the Scottish Economy of regulating the industry would be around £58m. There has been a great deal of support:



SELECT has been pursuing this goal for many years. The next steps is for Select to arrange a meeting with the new Minister responsible for Business, Fair Work and Skills, Jamie Hepburn. This will take place soon –

SGT has started two strands of the work

- (1) working with the sector to develop options for a consumer mark or register and
- (2) independently assessing the current risk and build a business case to determine if this is a proportionate response.

Alongside that Jamie Halcrow Johnston MSP is preparing a Motion for Debate in Scottish Parliament on the subject to gain further Cross Party Support. That motion asks *the Scottish Government to consider how the Parliament's powers over protection of title could be utilised to reassure the public of the safety of electrical work, in domestic and non-domestic premises.*

If you want to follow SELECT's campaign or indeed add your support, you can do so via the SELECT website <https://www.select.org.uk/safer/> or through the SELECT social media account #itsashocker.

Details of most recent amendments to British Standard **BS 7671** "Requirements for Electrical Installations, can be found in the Presentation on the SCSG website.

Part 7 – Section 704 - Construction & Demolition Site Installations

Section 704 prohibits the protective measures of obstacles and placing out of reach (Section 417), non-conducting location (Regulation 418.), and earth-free local equipotential bonding (Regulation 418.2). (IET, 10/2018)

A note in the regulation also refers the reader to BS 7375 (Distribution of electricity on construction and demolition sites. Code of practice.)

It is usually impracticable with Protective Multiple Earthing (PME) to comply with the bonding requirements of the Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR) on construction sites, and a PME earthing terminal should not be provided.

Where a construction site is part of an existing building and the building is supplied using a PME earthing facility the construction site will have to be separated from the PME building earth and be part of a TT system having a separate connection to earth that is independent from the PME building earth, unless the bonding requirements of Regulation 704.411.3.1 can be met.

Where the construction site earthing and the building earthing are separate the earthing arrangements must not be simultaneously accessible.

110 V reduced low voltage supplies, with the centre point of the secondary winding of the step-down transformer earthed, limit the voltage to Earth to 55 V for single-phase supplies and 63.5 V for three-phase.

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Limiting the voltage to 55 V or 63.5 V between a live conductor and Earth effectively eliminates the risk of dangerous electric shock from exposed-conductive-parts

The value of earth fault loop impedance at every point of utilisation, including socket-outlets, must be such that the disconnection time does not exceed 5 seconds. Consideration to be given to the risk of damage to electrical equipment by corrosive substances, movement of structures and vehicles, wear and tear, tension, flexing, impact, abrasion, severing and ingress of liquids or solids.

Cables on a construction site location should preferably not be installed across walkways or site roads as they are susceptible to mechanical damage. If cables are installed in this manner they would require the appropriate level of protection against mechanical damage and contact with construction plant machinery. Surface-run and overhead cables must be protected against mechanical damage, taking into account the environment and activities of a construction site. These cables remain flexible at lower temperatures than standard PVC cables. Commonly referred to as arctic grade cable sheathed yellow rather than blue.

Assembly for Construction Sites –

- (a) overcurrent protective devices;
- (b) devices affording fault protection; and
- (c) socket-outlets, if required.

Safety and standby supplies must be connected by means of devices arranged to prevent interconnection of the different supplies.

Equipment for external use should be at least IP44; however equipment installed in a weather protected location such as an office being refurbished, would have no specific IP requirement.

I&T every 3 months with RCDs tested daily by pressing the test button.

Robert thanked Dave for his presentation before moving on to other business. (Copy of the slide deck attached)

Any Other Business

One question was raised from the group in relation to Inspection, Testing of Installations in Temporary Accommodation. A good discussion was had – Please note Section 704 does not apply to installations in administrative locations of construction sites (for example, offices and canteens).

The next meeting will be on the 19th March 2020 at 13:30 in the Hilcroft Hotel Whitburn wen Susan Donnelly will give an update on the Control of Vibration at Work

March the 19th Susan Donnelly of HSE Vibration

April the 23rd Chris Steel of HSE Noise.

May the 21st.

More information can be found on the SCS Group website <http://www.scottishconstructionsafetygroup.org.uk/>

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