



COMPETENCY FOR PERSONS INVOLVED IN ELECTRICAL INSTALLATION WORK

by Jon Elliott

being an *electrician*. As such, the term is no indicator of a person's level of training, technical qualifications achieved, or the extent of relevant work experience accumulated - all factors which will affect a person's ability to do electrical work properly. The ability to perform a particular task properly is defined as competency. Generally speaking, a suitably qualified and competent electrician should be able to perform a wide range of installation activities in domestic, industrial and commercial installations. Persons wishing to employ an electrician should ask for some evidence of their *competency*. This might include production of certificates obtained from successful completion of recognised training at a technical or further education college, a Joint Industry Board Electrotechnical Certification Scheme card, or proof of membership/affiliation with a recognised industry body.

What are the legal requirements?

The Electricity at Work Regulations 1989 imposes duties on persons involved in electrical work commercially whether employers, the self employed or employees, including most trainees.

Regulation 16 (Persons to be competent to prevent danger and injury) states:

"No person shall be engaged in any work activity where technical

knowledge or experience is necessary to prevent danger or, where appropriate, injury, unless he possesses such knowledge or experience, or is under such degree of supervision as may be appropriate having regard to the nature of the work."

It is stated in the *Memorandum of guidance on the Electricity at Work Regulations 1989* (HSE: 1989) that "the object of the regulation is to ensure that persons are not placed at risk due to a lack of skills on the part of themselves or others in dealing with electrical equipment".

It continues: "the scope of 'technical knowledge or experience' may include: (a) adequate knowledge of electricity; (b) adequate experience of electrical work; (c) adequate understanding of the system to be worked on and practical experience of that class of system; (d) understanding of the hazards which may arise during the work and the precautions which need to be taken; (e) ability to recognise at all times whether it is safe for work to continue."

What qualifications are needed to become an electrician?

People have come into the electrical installation industry from a number of routes and may have a number of different electrically-biased qualifications.

Introduction

The IET technical advice line often receives calls relating to the competency of persons carrying out electrical installation, maintenance, inspection & testing and similar activities and what qualifications are required to be classed as an "electrician". The helpline often takes enquiries from persons currently working as electricians who have no formal qualifications who now wish to find an appropriate qualification, and from those who wish to enter the electrical industry from a wide range of backgrounds.

A number of typical questions relating to competency, qualifications and training for electricians are given below with appropriate answers.

What is an electrician?

The term *electrician* is generic, has no legal status and is in no way protected. Anyone may refer to themselves as

Concentrating on electrical installation work, typically persons wanting to become electricians complete a City & Guilds qualification. Over the years, City & Guilds has offered a number of qualifications which provided the knowledge evidence requirements for electrical trainees:

- 236 part “A” and “B” certificates (not available since the late seventies)
- 2360 part 1 (not available since October 2006) and part 2 (no longer available from October 2008)
- 2330 part 1 and 2 certificates (both available from September 2004)

All of the above could, and in the case of the 2330 can, be studied by persons not directly employed in the electrical installation industry.

What subject updating and further development qualifications are available?

For persons who have been employed in the electrical industry for some time and who have no electrical qualifications, or who qualified prior to the advent of the 16th Edition, the most appropriate subject updating or “refresher” course is probably the City & Guilds 2381 “16th Edition” certificate. Those wishing to refresh and/or improve their skills in relation to the inspection, testing and certification of an installation may choose to take the City & Guilds 2391 Inspection & testing certificate, which may also be beneficial to those wanting to be graded as an Approved Electrician on the Joint Industry Board (JIB) Electrotechnical Certification Scheme, or who wish to become a Qualified Supervisor for an NICEIC Approved Contractor or ECA registered company.

What about persons wishing to become electricians having qualifications that are not electrical installation work specific?

Many persons have entered the industry having successfully

completed electrically biased BTEC (and later Edexcel) National Certificate or diploma courses or other electrically related qualifications. In the case of qualifications other than those provided by City & Guilds listed above an assessment will have to be made of their suitability in terms of providing the necessary knowledge base for someone involved in electrical contracting if they wish to obtain a JIB grading or become affiliated with other electrical organisations. However, qualifications primarily relating to electronics and/or computing even if at a notionally higher level in the National Qualifications Framework may not be suitable without the addition of some electrical installation specific training/experience.

What is the National Qualifications Framework?

The National Qualifications Framework categorises all accredited qualifications on a scale ranging from entry level through to level 8. In the field of electrical installation work levels 2, 3 and 4 are of relevance. Broadly speaking, level 2 is “first certificate” level, will cover a narrow range of work activities and in many cases may be awarded as an interim stage on the way to becoming fully qualified in a particular occupation. Completion of part 1 of the City & Guilds 2360 or 2330 qualifications will result in the award of a level 2 certificate. Level 3 is “craft” level, or the level required to be competent in a particular occupation. Completion of part 2 of the City & Guilds 2360 or 2330 qualifications will result in the award of a level 3 certificate. Level 4 would equate to technician level and as such falls beyond the remit of this article.

What is a domestic installer?

In 2005 the Building Regulations as applied to England and Wales were modified to include requirements for domestic electrical installations.

Companies or persons carrying out electrical work in domestic premises were required to either notify the relevant Building Control department for the area where notifiable work was being carried out prior to starting work or to become registered as domestic installers. A qualified electrician generally met the requirements to become a registered domestic installer. However, many persons carrying out work activities in domestic premises requiring a degree of work on the electrical installation, such as central heating installers and kitchen fitters did not. As such there was a need for a recognised qualification to be developed that would provide “non electricians” with the necessary knowledge and skills to be considered competent for such work. The examination board EMTA Awards Ltd (EAL) developed a level 2 qualification for domestic electrical installers in conjunction with a



number of interested parties from the electrical industry. It should be remembered that due to the limited course content of this qualification, successful completion does not meet the requirements of any electrical organisation for grading as an electrician.

What is an Electrical Apprenticeship?

When school leavers wish to become electricians the best route into the industry is via an apprenticeship. This will normally take 3 to 4 years to complete. The apprentice will receive practical “on the job” work experience and training throughout this time and will be given opportunities to be more involved in work as time progresses and their skills and abilities develop. During the first three years, they attend a further education college on a day-release basis (that is, attending one day per week during college term time) where the knowledge obtained in the workplace is reinforced by instruction and training. They will also receive key skills training for communication, application of number, information technology, working with others, improving learning and performance and problem solving. On completion of their studies at college they receive a technical certificate and take the Achievement Measurement 2 (AM2) timed practical assessment and with the assistance of their employer compile a site based logbook in order to obtain their level 3 National Vocational Qualification (NVQ) or Scottish Vocational Qualification (SVQ) as appropriate.

What are the JIB Grading requirements? Electrician

In order to be registered as an electrician with the Joint Industry Board for the Electrical Contracting Industry (JIB) a person must:

- have been a registered apprentice or undergone some equivalent method of training and have had practical

training in electrical installation work, and

- have obtained an NVQ / SVQ Level 3 in electrical installation work (or approved equivalent such as successful completion of the City & Guilds 2360 part 2 certificate and have passed the Achievement Measurement 2 (AM 2), or be able, with the application for Grading and any other relevant supporting evidence (i.e. the City & Guilds Electricians' Certificate) which may be required, to satisfy the Grading Committee of his experience and suitability), and
- be 21 years of age (this requirement may be waived if the applicant has obtained a pass in the City & Guilds 2360 Electrical Installation Theory Part 2 Course or approved equivalent), in addition to the above
- Electricians are expected to be able to carry out electrical installation work efficiently in accordance with the National Working Rules for the Electrical Contracting Industry, the current IEE Regulations for Electrical Installations, and the Construction Industry Safety Regulations.

Approved Electrician

In order to be registered as an Approved Electrician with the JIB a person must have met the requirements to be graded as an electrician above and must additionally:

- have had two years experience as an electrician subsequent to the satisfactory completion of training and immediately prior to the application for the Approved Electrician grade, or be 22 years of age, whichever is the sooner, and
- have demonstrated competence and obtained a suitable qualification (such as the City & Guilds 2391 qualification) in the inspection, testing and commissioning of installations.

Approved Electricians are expected:

- to possess the practical, productive and electrical engineering skills with

adequate technical supervisory knowledge so as to be able to work on their own proficiently and carry out electrical installation work without immediate supervision in the most efficient and economical manner

- be able to set out jobs from drawings and specifications and requisition the necessary installation materials
- be able to accept responsibility for the proper completion of jobs and,
- if required, supervise other operatives.

References

Electricity at Work Regulations 1989 (HMSO: 1989)
Memorandum of guidance on the Electricity at Work Regulations 1989 (HSE: 1989)
Requirements for Grading of Electrical Operatives. (Joint Industry Board: 2006-2007)

Further Information

■ **Qualifications**

- In general*
- Qualifications and Curriculum Authority: www.qca.org.uk
 - *Electrical installation work*
 - City and Guilds: www.city-and-guilds.co.uk
 - *Domestic electrical installer*
 - EMTA Awards Ltd: www.eal.org.uk

■ **Apprenticeships**

- In England and Wales*
- JTL: www.jtlimited.co.uk
 - Modern Apprenticeships: www.apprenticeships.org.uk
- In Northern Ireland*
- The Electrical Training Trust: www.ett-ni.org
- In Scotland*
- The Scottish Electrical Charitable Training Trust: www.sectt.org.uk
 - The Scottish Enterprise: www.scottish-enterprise.com/modernapprenticeships

■ **Electrotechnical Certification Scheme**

- Joint Industry Board: www.jib.org.uk ■