

# Electrotechnical Trailblazer Apprenticeship Standards

## 1. Occupation

- Installation Electrician
- Maintenance Electrician

## 2. Duration

It is unlikely that a candidate coming to this apprenticeship without previous relevant experience would complete the apprenticeship in less than 42 months, and a typical completion time is likely to be 48 months. This may reduce if an apprentice is part-qualified or has relevant experience on entry.

## 3. Role profile (what the successful candidate should be able to do at the end of the apprenticeship)

Electricians install, maintain and repair electrical systems in industrial, commercial and domestic environments. Electricians might work in both indoor and outdoor settings. Electrical equipment and systems may include switchboards, motors, cables, fuses, thermal relays, fault current protection switches, heating, lighting, air conditioning and metering equipment as well as crime and fire alarm systems and renewable energy technologies. They are able to work on their own proficiently and work without immediate supervision in the most efficient and economical manner. They may contribute to the design of electrical systems. They are able to set out jobs from drawings and specifications and requisition the necessary installation materials. Electrical safety is an important area of Electricians' work. On completion of their work the electrical systems must be safe to use. They must adhere to safe working practices without endangering themselves or others.

*Installation Electricians* work on the installation, testing, commissioning and maintenance of low voltage (less than 1000v) electrical and electronic devices and appliances.

*Maintenance Electricians* work on the maintenance of electrical and electronic installations including automated production systems. Duties include the supervision of the equipment, its maintenance and necessary repairs.

## 4. Knowledge and Skills

Electricians will use engineering knowledge and understanding to apply their technical and practical skills. They will contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services. Electricians must:

- Understand and apply the principles, practices and legislation for the termination and connection of conductors, cables and cords in electrical systems
- Understand and apply the practices and procedures for the preparation and installation of wiring systems and electrotechnical equipment in buildings, structures and the environment
- Understand and apply the principles, practices and legislation for the inspection, testing, commissioning and certification of electrotechnical systems and equipment in buildings, structures and the environment
- Understand and apply the principles, practices and legislation for diagnosing and correcting electrical faults in electrotechnical systems and equipment in buildings, structures and the environment
- Understand and apply the electrical principles associated with the design, building, installation and maintenance of electrical equipment and systems
- Oversee and organise the work environment

In addition,

### **Installation Electricians must:**

- Understand and apply the principles of planning and selection for the installation of electrotechnical equipment and systems in buildings, structures and the environment

### **Maintenance Electricians must:**

- Understand and apply the practices and procedures for planning and preparing to maintain electrotechnical systems and equipment

In all of these activities, Electricians must understand and apply health and safety and environmental regulations, guidance notes and relevant codes of practice; and the requirements of the current edition of the Wiring Regulations.

## 5. Entry requirements

Individual employers will identify any relevant entry requirements in terms of previous qualifications, trainability tests, or other criteria. Most candidates will have English and mathematics at level 2 on entry, and all will have achieved that level by the end of the apprenticeship.

## 6. Behaviours

Electricians will be expected to:

- Work reliably and effectively without close supervision
- Accept responsibility for the work of themselves and others
- Accept allocate and supervise technical and other tasks
- Use oral, written and electronic methods for the communication of technical and other information
- Work effectively with colleagues, other trades, clients, suppliers and the public
- Undertake work in a way that contributes to sustainable development
- Maintain and enhance competence in own area
- Exercise responsibilities in an ethical manner.

## 7. Assessment

It is expected that the split between in-programme and end assessment, with at least two thirds being assessed at the end will be met. Basic Health and Safety elements will be assessed and certificated very early in the programme, and further Health and Safety assessed during the programme as required; behaviours will be assessed continuously during the programme; and the final assessment, which may take place over a period at the end of the programme, will be based around an extension of the AM2 assessment vehicle. This is an existing end of programme test that is well recognised and valued in the industry.

By the end of the apprenticeship the candidate will have satisfied the requirements for registration as Eng Tech by the Engineering Council.

## 8. Level

This is a Level 3 Apprenticeship

## 9. Review

This standard will be reviewed in three years

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