

# Pre-Competition Activity 2025



## What's this Document For?

**This Pre-Competition Guide will help you identify your most suitable candidate(s) for the SkilleLECTRIC / WorldSkills UK Electrical Installation competition. Within this guide you'll find:**

1. The **Talent Spotting Checklist** which defines the ideal personal attributes and other characteristics a competitor should have.
2. The **Core Competencies** that competitors are expected to meet at each stage of the SkilleLECTRIC competition journey, starting from the Entry Stage through to world-class international standards.
3. The **Pre-Competition Task** can be used as an in-house competition from which you can identify your most suitable candidates to register for SkilleLECTRIC.

## What's Next?

Once you have worked through these guides to identify the candidate(s) that meet the standard, please [register them for SkilleLECTRIC](#) – the registration window is open between 03 March - 28 March 2025.

## Other Useful Documents

Please refer to the separate **Training Provider Guide** which contains comprehensive information on the competition process, important dates and how you can best support your competitor.

| Step | GET STARTED!  |
|------|---|
| 1    | Use the <b>Talent Spotting Checklist</b> (pg 3) to identify candidates with the key attributes  |
| 2    | Check they've got the <b>Core Competences</b> (pg 4) to progress to further stages  |
| 3    | Set up and carry out the <b>Pre-Competition Task</b> (pgs 5-6) using the supplied marking guide with your shortlisted candidate to see who excels in a practical test   |
| 4    | <b>Register your chosen candidates</b> between 03 March - 28 March 2025 on the WorldSkills UK website   |
| 5    | <p>Once your candidate has accepted the WorldSkills UK terms and conditions, they will receive an email to take part in the <b>'Entry Stage'</b> of the competition which involves a 1-hour, app-based, timed and interactive online task. This will be available until 17:00 on Friday 04 April.</p> <p><b>The SkilleLECTRIC entry stage will require competitors to download an Android/iOS app to a device which operates at least Android 10 or iOS 12. An internet connection will also be required to submit their results.</b></p> |

## 1. Talent Spotting Checklist

Use this checklist to identify your most appropriate candidate(s) to register for the competition from 03 March - 28 March 2025. It would be ideal if they have as many of these personal attributes as possible.

Competitor Name

Date

College and Campus

|  | <i>Please tick</i>       |
|--|--------------------------|
| Has achieved S/ NVQ level 2 and is either working towards or has completed level 3 | <input type="checkbox"/> |
| Has a supportive employer  | <input type="checkbox"/> |
| Can work well under pressure   | <input type="checkbox"/> |
| Has a high level of ability and flexibility  | <input type="checkbox"/> |
| Good communication and interpersonal skills  | <input type="checkbox"/> |
| Self-motivated and can self-reflect  | <input type="checkbox"/> |
| Has a good level of practical skills and knowledge                                 | <input type="checkbox"/> |
| Uses theoretical knowledge to its full potential                                   | <input type="checkbox"/> |
| Consistent high performer in the work place and in their place of learning         | <input type="checkbox"/> |
| Can adapt to different working environments  | <input type="checkbox"/> |
| Is accurate in measurements  | <input type="checkbox"/> |
| Possesses mental and physical stamina  | <input type="checkbox"/> |
| Able to assess task and plan before they act                                       | <input type="checkbox"/> |
| Good time management and can work to a tight time schedule                         | <input type="checkbox"/> |
| Self-confident, but not over confident   | <input type="checkbox"/> |

## 2. Core Competencies

The table below clearly lists the core competencies and the expected standards at each stage of the SkillELECTRIC competition journey, starting from the entry stage through to world class international standards.

|                   |  | Entry Stage | National Qualifier | National Final | WorldSkills / Team UK |
|-------------------|--|-------------|--------------------|----------------|-----------------------|
| <b>Competency</b> | <b>Health and Safety</b>   |             |                    |                |                       |
| Level 3           | Tidy work area   | No          | Yes                | Yes            | Yes                   |
| Level 3           | Correct PPE being used   | No          | Yes                | Yes            | Yes                   |
| Level 3           | Safe working practices being observed                                      | No          | Yes                | Yes            | Yes                   |
| Level 3           | Safe isolation of electrical supply  | Yes         | Yes                | Yes            | Yes                   |
| Level 3           | Theory knowledge   | Yes         | Yes                | Yes            | Yes                   |
| <b>Competency</b> | <b>Positioning</b>   |             |                    |                |                       |
| Level 3           | Mark horizontal and vertical datum lines                                   | No          | Yes                | Yes            | Yes                   |
| Level 3           | Correctly position electrical components in relation to the given drawings | No          | Yes                | Yes            | Yes                   |
| Level 3           | Ensure all equipment is fitted level                                       | No          | Yes                | Yes            | Yes                   |
| <b>Competency</b> | <b>Wiring and Terminations</b>   |             |                    |                |                       |
| Level 3           | Correctly select the correct type and size of cable                        | No          | Yes                | Yes            | Yes                   |
| Level 3           | Correctly fit and secure cable glands                                      | No          | Yes                | Yes            | Yes                   |
| Level 3           | Correctly and securely terminate conductors                                | No          | Yes                | Yes            | Yes                   |
| <b>Competency</b> | <b>Quality</b>   |             |                    |                |                       |
| Level 3           | Install cable containment to industry standards                            | No          | Yes                | Yes            | Yes                   |
| Level 3           | Correctly support cables with clips or cleats where required               | No          | Yes                | Yes            | Yes                   |
| Level 3           | Correctly install cables within containment                                | No          | Yes                | Yes            | Yes                   |
| <b>Competency</b> | <b>Inspection and Testing</b>  |             |                    |                |                       |
| Level 3           | Correctly carry out the following tests:                                   |             |                    |                |                       |
|                   | 1. Continuity  | Yes         | Yes                | Yes            | Yes                   |
|                   | 2. Insulation resistance   | Yes         | Yes                | Yes            | Yes                   |
|                   | 3. Earth fault loop impedance  | No          | No                 | Yes            | Yes                   |
|                   | 4. RCD operation   | No          | No                 | Yes            | Yes                   |
| <b>Competency</b> | <b>Function</b>  |             |                    |                |                       |
| Level 3           | Installation operates as specified   | No          | Yes                | Yes            | Yes                   |

In addition to core electrotechnical skills, an electrician's role in low carbon installation will be embedded throughout the competition.

### 3. Pre-Competition Activity Task

**This task is designed to be used as an in-house competition from which you can identify your most suitable learners/ employees to register for the SkilleLECTRIC competition.**

**The competitors are expected to:**

- Comply with all Health and Safety legislation and requirements for the competition
- Install the competition piece to industry standards in a safe and orderly manner
- Eye protection must be worn for all drilling and cutting
- Complete the exercise with the materials provided
- Work to the dimensions included on the diagram with a tolerance of +/- 4mm
- Determine all necessary wiring for the correct installation and operation of equipment as described in the specification
- Carry out dead electrical safety tests and record your readings on the test results sheet to prove the installation is safe to energise prior to requesting live testing.
- Work under pressure and remain calm by setting a time limit for this task.

### Materials

Please supply all the tools and equipment for which to complete this task including; hand tools, test equipment, bending springs, cutting blocks, handsaws, draw tapes, spare blades etc. Competitors can use their own tools if they prefer. The supply to energise needs to have its protection when the assessment is complete. You are welcome to use RCBO in line with the domestic expectations of the current edition of BS7671 if you wish.

\*Please note the use of MCB was considered in order to keep costs down for this stage of competition and that there is no requirement for "live" testing.

Below is the suggested materials list you will require per competitor:

| Material                               | Quantity   |
|--|------------|
| Metal clad 4-way DB                    | 1          |
| 6A MCB *or RCBO                        | 1          |
| 16A MCB *or RCBO                       | 2          |
| MCB Blank                              | 1          |
| 2 gang 2-way switch                    | 1          |
| 2-way switch                           | 1          |
| Switch pattress PVC with 20mm knockout | 2          |
| 13A fused connection unit              | 1          |
| Pattress for above with 20mm knock out | 1          |
| Metal clad socket outlet with backbox  | 1          |
| 20mm PVC conduit tee box               | 2          |
| 20mm PVC conduit angle box             | 1          |
| 20mm PVC conduit end box               | 1          |
| Batten lamp holder                     | 2          |
| 20mm PVC conduit                       | 3 metres   |
| 20mm conduit saddles                   | 6          |
| 2.5mm T&E PVC/ PVC                     | 3 metres   |
| 2.5 clips                              | 10         |
| 2.5mm 3core SWA                        | 3.5 metres |
| 20mm SWA glands                        | 2          |
| SWA cleats                             | 8          |
| PVC conduit box lids                   | 2          |

We suggest that you set a time limit by which to complete this task so that your candidate can get used to working under pressure. The task consists of a PVC conduit, PVC/ PVA and a SWA installation with the following 3 circuits:

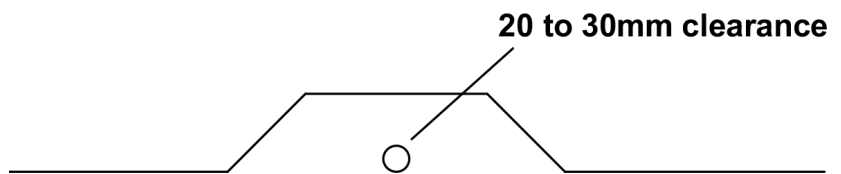
**Circuit 1:** 20A radial circuit feeding a switched fused connection unit (CU1) wired in PVC/ PVC insulated cable.

**Circuit 2:** 20A general power circuit feeding one single metal clad switch socket outlet (SO1) wired in 2- core SWA cable.

**Circuit 3:** 6A lighting circuit wired in a single PVC insulated cable enclosed in PVC conduit. The circuit consists of 2 lighting points. LT1 is controlled by two-way switching, SW1 and the left-handed side of SW2. LT2 is controlled by a one-way switch, right-hand side of the two-gang switch (SW2).

**Note 1**

The PVC conduit must bridge an obstruction (20mm PVC conduit) using a double set with a minimum clearance of 20mm and a maximum clearance of 30mm.

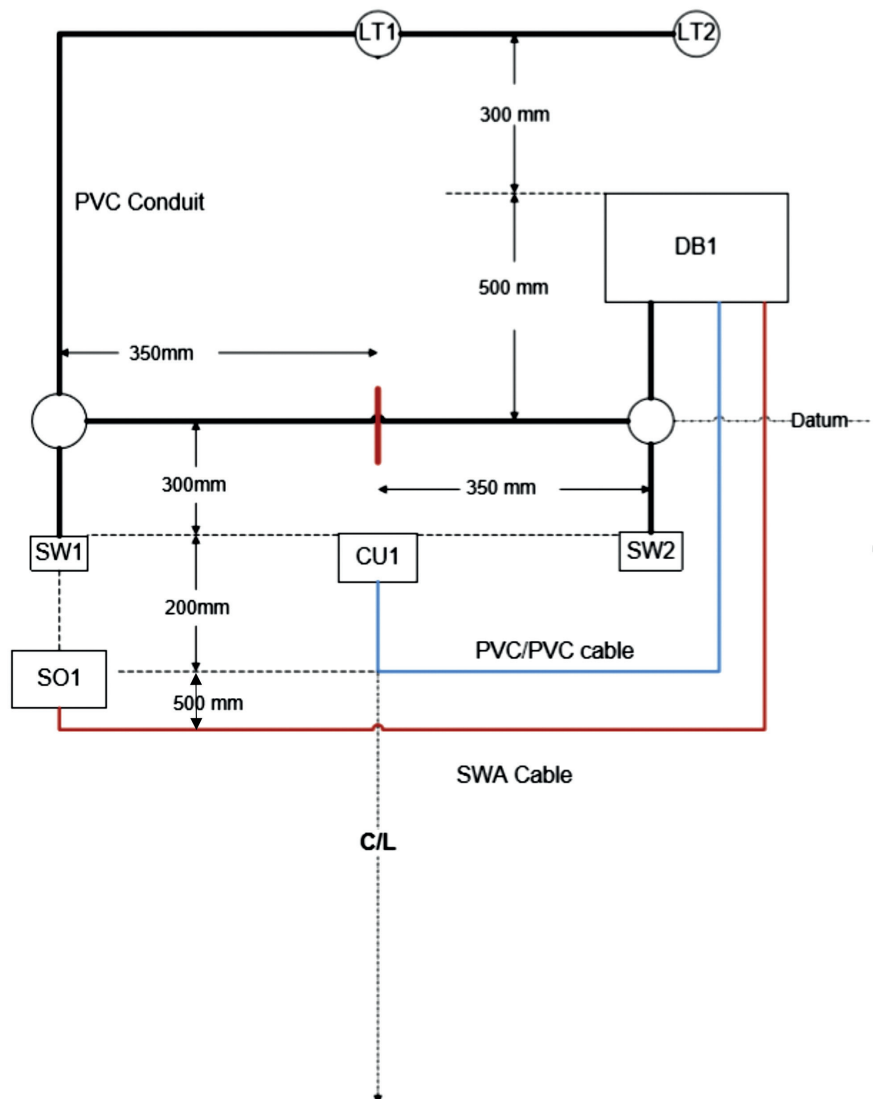


**Note 2**

3 core flex and 13A plug top to be supplied by organisation for connection to a RCD protected supply using trailing socket.

**Key for diagrams**

- DB1** Metal clad consumer unit
- LT1** BC baton lamp holder
- LT2** BC baton lamp holder
- SW1** 1 gang 2-way light switch
- SW2** 2 gang 2-way light switch
- SO1** 13A single metal clad switched socket outlet
- CU1** 13A switched fused connection unit



## Marking Guide for Pre-Competition Activity

Competitor Name

Date

College and Campus

| Aspect ID                | Description   | Maximum mark allocated | Mark awarded |
|--------------------------|---|------------------------|--------------|
| <b>A1</b>                | CU1 circuit completed in the correct cable as per the specification   | <b>1</b>               |              |
| <b>A2</b>                | SO1 circuit completed in the correct cable as per the specification   | <b>1</b>               |              |
| <b>A3</b>                | LT1 and LT2 circuit completed in the correct cable as per the specification   | <b>1</b>               |              |
| <b>A4</b>                | Conductors securely terminated at DB1 with no exposed copper when viewed at 90 degrees. Pull test on all terminations. No damage to insulation or reduction in conductor CSA (1 mark per circuit to include supply) | <b>3</b>               |              |
| <b>A5</b>                | SWA gland terminated correctly (1 mark per gland)   | <b>2</b>               |              |
| <b>A6</b>                | Conductors securely terminated at CU1 with no exposed copper when viewed at 90 degrees. No damage to insulation or reduction in conductor CSA. Pull test on all terminations  | <b>2</b>               |              |
| <b>A7</b>                | Conductors securely terminated at SW1 with no exposed copper when viewed at 90 degrees. No damage to insulation or reduction in conductor CSA. Pull test on all terminations  | <b>2</b>               |              |
| <b>A8</b>                | Conductors securely terminated at SW2 with no exposed copper when viewed at 90 degrees. No damage to insulation or reduction in conductor CSA. Pull test on all terminations  | <b>2</b>               |              |
| <b>A9</b>                | Conductors securely terminated at SO1 with no exposed copper when viewed at 90 degrees. No damage to insulation or reduction in conductor CSA. Pull test on all terminations  | <b>2</b>               |              |
| <b>A10</b>               | Conductors securely terminated at LT1 with no exposed copper when viewed at 90 degrees. No damage to insulation or reduction in conductor CSA. Pull test on all terminations  | <b>2</b>               |              |
| <b>A11</b>               | Conductors securely terminated at LT2 with no exposed copper when viewed at 90 degrees. No damage to insulation or reduction in conductor CSA. Pull test on all terminations  | <b>2</b>               |              |
| <b>A12</b>               | CPCs and Neutral conductors connected in correct sequence at DB1 for all circuits (1 mark per circuit and 1 mark for Earthing conductor)  | <b>3</b>               |              |
| <b>Total marks for A</b> |   | <b>23</b>              |              |

| Aspect ID                | Description   | Maximum mark allocated | Mark awarded |
|--------------------------|---|------------------------|--------------|
| <b>B1</b>                | PVC conduit bridge set and offset acceptable as per specification and drawing                   | <b>3</b>               |              |
| <b>B2</b>                | PVC conduit bend acceptable and inner radius at least 2.5 times outside diameter of the conduit | <b>3</b>               |              |
| <b>B3</b>                | PVC/ PVC cable securely clipped horizontally and vertically. Bending radii satisfactory         | <b>3</b>               |              |
| <b>B4</b>                | SWA cable securely clipped horizontally and vertically. Bending radii satisfactory              | <b>3</b>               |              |
| <b>B5</b>                | Additional material used <b>(-1 mark for each item issued)</b>                                  | <b>0</b>               |              |
| <b>Total marks for B</b> |   | <b>12</b>              |              |

| Aspect ID                | Description  | Maximum mark allocated | Mark awarded |
|--------------------------|--|------------------------|--------------|
| <b>C1</b>                | DB1 level, centred horizontally and vertically within 2mm of measurements taken from datum lines (500mm)           | <b>1</b>               |              |
| <b>C2</b>                | LT1 centred, horizontally and vertically within 2mm of measurements taken from datum lines (350mm and 1000mm)      | <b>1</b>               |              |
| <b>C3</b>                | LT2 centred horizontally and vertically within 2mm of measurements taken from datum lines (1000mm)                 | <b>1</b>               |              |
| <b>C4</b>                | SW1 level, centred horizontally and vertically within 2mm of measurements taken from datum lines (350mm and 300mm) | <b>1</b>               |              |
| <b>C5</b>                | SW2 level, centred horizontally and vertically within 2mm of measurements taken from datum lines (350mm and 300mm) | <b>1</b>               |              |
| <b>C6</b>                | Centre of set within 2mm of measurements taken from datum (500mm)  | <b>1</b>               |              |
| <b>C7</b>                | SO1 level, centred horizontally and vertically within 2mm of measurements taken from datum lines (350mm and 800mm) | <b>1</b>               |              |
| <b>C8</b>                | CU1 level, centred horizontally and vertically within 2mm of measurements taken from datum lines (300mm)           | <b>1</b>               |              |
| <b>C9</b>                | PVC/ PVC cable horizontal and vertically within 2mm of measurements taken from datum line (500mm)                  | <b>1</b>               |              |
| <b>C10</b>               | SWA cable horizontal and vertically below datum lines within 2mm of measurements (1000mm)                          | <b>1</b>               |              |
| <b>Total marks for C</b> |  | <b>10</b>              |              |



| Aspect ID                | Description   | Maximum mark allocated | Mark awarded |
|--------------------------|---|------------------------|--------------|
| D1                       | Personal protective equipment used at all times       | 1                      |              |
| D2                       | Work area kept free from hazards at all times         | 1                      |              |
| D3                       | Safe working practices employed when using hand tools | 1                      |              |
| D4                       | No faults or dangers found when work tested           | 1                      |              |
| D5                       | Due consideration to others safety demonstrated       | 1                      |              |
| <b>Total marks for D</b> |   | <b>5</b>               |              |

| Aspect ID                | Description   | Maximum mark allocated | Mark awarded |
|--------------------------|---|------------------------|--------------|
| E1                       | Correctly carries out continuity testing on each circuit            | 3                      |              |
| E2                       | Correctly carries out insulation resistance testing on each circuit | 3                      |              |
| E3                       | Correctly carries out polarity testing on each circuit              | 3                      |              |
| E4                       | Correctly completes schedule of test results for each circuit       | 3                      |              |
| <b>Total marks for E</b> |   | <b>12</b>              |              |

| Aspect ID                | Description             | Maximum mark allocated | Mark awarded |
|--------------------------|-------------------------|------------------------|--------------|
| F1                       | CU1 functions correctly | 1                      |              |
| F2                       | S01 functions correctly | 1                      |              |
| F3                       | LT1 functions correctly | 1                      |              |
| F4                       | LT2 functions correctly | 1                      |              |
| <b>Total marks for F</b> |                         | <b>4</b>               |              |

**Total marks awarded for Pre-Competition Activity**

## Pre-Competition Activity assessed by:

Name

Date

## Next Steps

Once you've identified your candidates go to the SkilleLECTRIC website for more information on how to register: [www.skillelectric.org.uk/register](http://www.skillelectric.org.uk/register)

Follow NET and SkilleLECTRIC on social media:  National Electrotechnical Training  @skill\_electric  @NET\_Assessments @skillelectric