



# Electrical Construction Wiring

## Career Competition

**Career Cluster:** Architecture and Construction

**State Qualifying Exam:** Yes

**National Contest:** Yes

**Participation:** Individual

### Competition Description

Working from drawings and specification sheets, competitors are required to install an electrical system common in most residential projects. Judging is based on general workmanship, accuracy of layout and installation, and adherence to the current national electrical code and standard industry safe practices. A written test is also included.

### Tasks To Be Evaluated

Contest consists of two parts: conduit bending and residential wiring. Contestants are required to bend four 1/2 inch EMT conduit into specific common trade bends. The second part, wire a sub panel and devices according to the plan provided. Contest time is four hours. One hour for lunch, judging takes place, and contestants return to tear down stations. Total time 6 1/2 to 7 hours.

### Clothing Requirement

**National Requirement:**

**Class C: Competition Specific —**

**Manufacturing/Construction Khaki Attire**

- Official SkillsUSA khaki short-sleeve work shirt
- Khaki pants
- Black, brown or tan leather work shoes

**State Requirement:**

**Class C: Competition Specific —**

**Manufacturing/Construction Khaki Attire OR**

- Khaki short-sleeve work shirt
- Work pants of any kind are acceptable dress (no jeans)
- Black, brown, or tan leather work shoes.
- Any embroidered names or school patches must be covered if applicable.

### Provided by Competitor

- Bender for 1/2 in. EMT conduit, torpedo level, tape measure, marker and conduit reamer or deburrer.
- For the residential portion you will have to drill holes and mount electrical boxes to a 2x4 wood frame.
- Corded tools are not allowed a “charged up” battery drill or impact driver with a min. 5/8 in. a wood-boring bit and a Magnetic Phillips driver tip are suggested.
- Hand tools needed to cut and remove the jacket and insulation from “NM cable” commonly known as 12-2 and 14-2 romex.
- Side cutting pliers, knife, wire strippers, slip-joint pliers to tighten lock rings, screwdrivers, diangle, needlenose, and any other tools may be used to complete the project.
- Safety is top priority so eye protection is a must, hard hats will be required. Work gloves are recommended but not required.

### Provided by Technical Committee

- Work stations, panel, devices, wire, conduit, and all associated hardware.



## Career Competition

### **Additional Information**

Understand basic conduit bends. A 90 degree bend with a kick, an offset bend, a back to back 90 bend, and a saddle bend. Residential wiring that includes wiring a panel, electrical devices, and their proper uses, follow NEC code and safe wiring procedures. The competition is four hours long. Then there is a one-hour break for lunch and contest judging, contestants then may take pictures before tearing down their work and returning all materials. When the area is cleaned, the contestants are allowed to leave.