



# Provincial Scope Document

## *ELECTRICAL WIRING 2011 (Post-Secondary)*

**Contest Length: 6 hrs**

**Registration at site: 7:30am**

**Orientation & documentation: 7:30 to 8:00 am**

**Contest Start: 8:00 am**

### **Purpose of the Challenge:**

Assess the contestant's skills and abilities performing various installation tasks in the field of residential and commercial electrical wiring.

### **Skills & Knowledge to be tested:**

Throughout the contest, contestants can expect to be evaluated in one, two, three or all of the following areas:

- Installing residential, commercial wiring and control systems;
- Installing branch circuit components;
- Installing heating equipment and controls;
- Installing motor starter and controls;
- Installing communication systems, warning devices and various types of detectors;
- Fault finding and trouble shooting using test instruments

### **Pre-requisites:**

- Contestants must demonstrate mastery of the following technical skills:
  - Measuring and marking dimensions on a on a work surface using scale plans and drawings based on the metric measuring system;
  - Installing electrical equipment, cables, conduit, tubing and raceways;
  - Measuring and bending tubing and conduit;
  - Assembling components using screws, staples and bolts;
  - Linking lines and equipment to control panels and their components;
  - Wiring and connecting electrical components;
  - Identifying and marking conductors according to plans and drawings;
  - Complete a fault finding and troubleshooting exercise using test equipment.
- Contestants must demonstrate mastery of the following theoretical skills:
  - Reading, interpreting and executing plans, drawings, diagrams and schematics in compliance with standards;

- Reading, interpreting and executing manufacturer's technical specifications for the electrical components to be installed;
- Knowledge and application of electrical materials and work methods;
- Knowledge and application of basic electrical circuits;
- Knowledge and application of basic electrical devices and equipment;
- Knowledge and application of occupational health and safety regulations;
- Knowledge and application of electrical code requirements in Canada and installation to comply with the current Canadian Electrical Code Book (21<sup>st</sup> Edition 2009).

### **Equipment, Tools, Supplies, Clothing, Safety Equipment**

- Contestants should have the following tools and equipment available in their toolkits:
  - Supplies for drawing and writing (i.e. paper, pencil, eraser, ruler.)
  - Set of screwdrivers (Robertson, flat, Phillips)
  - Electrician's pliers (linesman pliers)
  - Cutting pliers (diagonal)
  - Wire strippers
  - Knife
  - Needle-nose pliers
  - Hammer
  - Adjustable wrench
  - Set of hex wrenches (Allen keys)
  - 1 set of manual knock-out punches for 1/2", 3/4", 1" conduit (not hydraulic)
  - Wire markers / Tape dispenser
  - Tapping screwdriver or set of taps (6/32 - 8/12 - 10/32 - 10/24 - 1/4x20).
  - File or conduit reamer
  - Hack saw
  - Torpedo level
  - Multimeter
  - Adjustable pliers (water pump pliers)
  - 1 Unibit metal bit
  - Wood bit (3/8" chuck)
  - Robertson and Phillips screw bits for cordless drill
  - Canadian Electrical Code Book (21<sup>st</sup> Edition 2009)

Contestants may bring tools other than those listed above. Any tools not on the list will have to be approved by the judges prior to use.

- Equipment provided by Technical Committee at event
  - Manual 1/2" EMT pipe bender
  - Cordless drill (3/8" chuck)
  - Ladder if needed
- Safety & Clothing provided by contestant
  - CSA approved safety gear hard hat, safety footwear, safety glasses, hearing protection, gloves.
  - Safety equipment must be worn at the competition site
  - Contestants must wear the appropriate safety gear in accordance with health and safety regulations

- Neat and clean clothing is required – torn clothing is not allowed

### Project Documents:

There will be no more documentation available to the competitors before the day of the event.

### Judging Criteria:

POINT BREAKDOWN	TOTAL 1000
A Operation	300
B Equipment and component installation	100
C Use of supplies	50
D Measurement	100
E Cable installation	100
F Tubing and conduit installation	100
G Connection of conductors to components and equipment	100
H Compliance with health and safety rules	100
I Fault finding	50

- There are no ties allowed, the tie break procedure will be based on the following criteria:
  - First criteria – operational & fault finding combined score
  - Second criteria – completion time
  - Third criteria – safety score

### Technical Committee:

Rod McLeod      Technical Chair  
 Miles Andrew  
 Ben Kilmer  
 George Razzo

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**Gold medal winners at the BC Skills Competition are eligible to compete at the Canadian Skills Competition June 1-4, 2011 in Quebec City, Quebec.**

**Skills Canada BC reserves the right to update contest information. Please check the website for changes.**