



# Provincial Scope Document

## *ELECTRICAL WIRING (Secondary) 2008*

**Contest Length: 6 hrs**

**Check in time: 7:30**

**Orientation: 7:45**

**Contest Start: 8:00**

### **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 magnetic motor starter and controlling from a single start stop station.;

### **Pre-requisites:**

**Contestants must demonstrate mastery of the following technical 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 Canadian Electrical Code Book (20<sup>th</sup> Edition 2006).

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

The equipment and materials used during the contest are standard items commonly used in the electrical industry. Please contact the committee if there are any questions about the tool requirements

Contestants should have the following tools in their toolkits:

Some of the tools can be available on site if prior arrangements are made; contact the committee in advance.

- Supplies for drawing and writing, i.e., pencil, eraser, compass, measuring tape, etc.
- Set of screwdrivers (Robertson, flat, Phillips)
- Electrician's pliers (linesman pliers)
- Cutting pliers (diagonal)
- Wire strippers
- Knife
- Needle-nose pliers
- Hammer
- Adjustable wrench (crescent wrench)
- Set of hex wrenches (Allen keys)
- Wood bit, 1/2 - 5/8 - 3/4;
- 1 Unibit metal bit
- 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).
- Black electrical tape
- File or conduit reamer
- Hack saw
- Torpedo level
- Multimeter
- Adjustable pliers (water pump pliers)
- Cordless drill (battery operated)
- Set of metal drill bits
- Manual 1/2" EMT pipe bender, (OFF-SET [one operation] are not allowed)
- Canadian Electrical Code Book (CEC) 2006 20<sup>th</sup> Edition;

### Tools and equipment

Contestants may bring tools other than those listed above. Of course, those tools will have to be approved by the judges prior to use. Each contestant will have access to a 120-volt outlet for the battery charger and a ladder.

## Safety

**Contestants must bring** CSA-approved safety gear (hard hat, safety boots, safety glasses / goggles, leather gloves). Safety equipment **must** be worn at the competition site.

Contestants **must** wear the required safety gear and comply with occupational health and safety regulations in order to compete. Contestants' clothing **must** be neat and clean – torn clothing is not allowed.

## **Project Competition:**

### **Project competition and material list**

The list in Annex A is an outline of the type materials that **may be used** during the competition.

## **Judging Criteria:**

POINT BREAKDOWN	TOTAL 1000
A Operation	350
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

## **Technical Committee:**

Mark Fettback      Technical Chair      mark@wpe.bc.ca

**Gold medal winners at the BC Skills Competition are eligible to compete at the Canadian Skills Competition May 25-28, 2008 in Calgary, Alberta.**

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



## ANNEX "A"

### **Preliminary material list**

Armoured cable AC 90  
Loomex cable NMD90  
Flexible conduit  
PVC conduit  
EMT conduit  
Recess mounted boxes  
Surface mounted boxes  
Receptacles / Lights  
Doorbell  
Switches (Three way, four way)  
Pilot light station  
Push button station  
3-phase motor  
Magnetic or Combination motor starter  
Timers / Photocells  
Heater (baseboard or wall insert)  
Thermostat (line, or built in, or low voltage, or electronic)  
Breakers  
Distribution panel  
Control panel