

Skills Canada National Competition

SCOPE DOCUMENT

SCOPE DOCUMENT	
Competition Year	2012
Competition location	Edmonton, AB
Trade Number	18
Trade Name	Electrical Installation
Level	Post-Secondary

1. INTRODUCTION

1.1 Purpose of the Challenge.

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

1.2 Duration of contest.

12 hours

1.3 Skills and Knowledge to be tested.

Throughout the final 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 control systems;
- installing communications systems, warning devices and various types of detectors.
- Trouble shooting using test instruments

2. CONTEST DESCRIPTION

2.1 List of documents produced and timeline for when competitors have access to the documents.

DOCUMENT	DATE OF DISTRIBUTION VIA WEBSITE
No other documents will be provided before the contest	

2.2 Tasks that may be performed during the contest

- Contestants must demonstrate mastery of the following technical skills:
 - measuring and marking dimensions on a work surface using scale plans and drawings based on the metric or imperial measuring system;
 - measuring and accurately marking the location of outlets and tapping holes on control panels;
 - installing electrical equipment, cables, conduit, tubing and raceways;
 - measuring and bending tubing and conduit;
 - measuring, sawing, drilling, deburring metals and plastics;
 - 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.
 - During the first day competitors will be required to complete a trouble shooting exercise using their own test equipment. The competitor will be assigned a time to complete this task
 - PVC bending to be accomplished through the use of a 120v/15amp heat gun.
- 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 of electrical materials and construction work methods;
 - knowledge of basic electrical circuits;
 - knowledge of basic electrical devices and equipment;
 - knowledge of occupational health and safety regulations;
 - knowledge and application of electrical code requirements in Canada and installation to comply with the current addition of the Canadian electrical code book (2009 CEC current edition)

3. EQUIPMENT, MATERIAL, CLOTHING

3.1 Equipment and material provided by Skills/Compétences Canada

- Work bench
- Ladder
- Access to a 120-volt 15A (5-20RA) for the portable heat gun, battery charger and power drill.

3.2 Equipment and material provided by the competitor

- Supplies for drawing and writing, i.e., pencil, eraser, etc.
- Metric tape measure (or a metric/sae combination)
- Set of screwdrivers (Robertson, flat and Philips)
- Electrician's pliers (lineman pliers)
- Try square
- Cutting pliers
- Knife (**no utility knives, box cutters etc**) Must be a lockable or fixed blade type.
- Needle-nose pliers
- Hammer
- Adjustable wrench (crescent wrench)
- Set of hex wrenches
- Wood bit, 1/2 - 5/8 - 3/4
- Fish tape
- 1 Unibit metal bit
- 1 set **manual** hole punches for 1/2", 3/4", 1" knock-outs
- Tapping screwdriver (6/32 - 8/12 - 10/32 - 10/24 - 1/4x20)
- Metal hack saw
- Wire stripper
- Torpedo level
- Multimeter **and** a megohmmeter (Competitor may bring their own OR use the supplied meter provided by Skills)
- Multi-purpose pliers
- Adjustable pliers (multi-purpose)
- Cordless drill (battery operated), or power drill to handle any and all drilling procedures
- Set of metal drill bits
- **1/2 Manual** pipe bender will be supplied by Skills AB. For this year's contest only
- Canadian Electrical Code Book (Latest Edition 2009)
- 120 volt **portable** heat gun complete with 5-15R male cord end, **No spring type cold PVC benders allowed**
- Drywall saw
- Contestants may bring tools other than those listed above. If you wish to bring additional tools, please email the chair of this committee for approval. Contestants will need approval from the chair in order to use these additional tools

3.3 Required clothing (Provided by competitor)

- Neat and clean – torn clothing is not allowed
- No facial, hand or loose hanging jewellery

4. SAFETY REQUIREMENTS

4.1 List of required personal protective equipment(PPE) provided by competitors

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Safety Goggles | <input checked="" type="checkbox"/> CSA approved Safety shoes | <input type="checkbox"/> Latex gloves |
| <input type="checkbox"/> Safety Gloves | <input type="checkbox"/> Welding helmet | <input type="checkbox"/> Dust Mask |
| <input checked="" type="checkbox"/> Hard Hat | <input type="checkbox"/> Welding gloves | <input checked="" type="checkbox"/> Leather gloves |
| <input checked="" type="checkbox"/> Hearing protection | <input type="checkbox"/> Respiratory protection | <input type="checkbox"/> No PPE required |

4.2 List of required personal protective equipment(PPE) provided by Skills/Compétences Canada (SCC)

- No additional PPE will be supplied by SCC

5. ASSESSMENT

5.1 Point breakdown

POINT BREAKDOWN	/1000
Operation	300
Equipment and component installation	100
Use of supplies	50
Measurement	100
Cable installation	100
Tubing and conduit installation	100
Connection of conductor to components and equipment	100
Compliance with health and safety rules	50
Fault finding	100

6. ADDITIONAL INFORMATION

6.1 Consecutive translation

If consecutive translation is required on site, the Skills/Compétences Canada Provincial/Territorial offices must advise Skills/Compétences Canada National Secretariat a minimum of 1 month prior to the competition or this service might not be guaranteed.

6.2 Tie (No ties are allowed)

In the event of a tie, the placement will be determined as per the following criteria:

- First criteria – Project time completion
- Second criteria – Operation score
- Third criteria – Health and Safety

6.3 Competition rules

Please refer to the competition rules for all general SCNC information.

7. NATIONAL TECHNICAL COMMITTEE MEMBERS

Region	Name	Email address
Pacific Region (Chair)	Jerry Wald	jwald@yukoncollege.yk.ca
Western Region	Dermot John Rooney	
Ontario	Clarke Hurley	
Québec	René Jetté	
Atlantic Region	Rick Mason	
Workshop Supervisor	John Sumner	