



2018

# SCNC

SKILLS CANADA  
NATIONAL COMPETITION

# OCMT

OLYMPIADES CANADIENNES  
DES MÉTIERS ET  
DES TECHNOLOGIES



skillsCompétences  
Canada  
Edmonton2018

CONTEST DESCRIPTION / DESCRIPTION DE CONCOURS

# PLUMBING PLOMBERIE

POST- SECONDARY /  
NIVEAUX POSTSECONDAIRE



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## **1 THE ESSENTIAL SKILLS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY**

SCC is currently working with Employment and Social Development Canada (ESDC) in order to bring awareness to the importance of Essential Skills that are absolutely crucial for success in the workforce. Part of this ongoing initiative requires the integration and identification of Essential Skills in contest descriptions, projects, and project documents. The next phase and very important aspect of our Essential Skills (ES) initiative is to provide an ES report card to each competitor at the Skills Canada National Competition. The purpose of the ES report card is to inform the competitor about their current level of essential skills based on their competition scores. With this knowledge, the competitor will be made aware which essential skill may require improvement. Full implementation is expected in the next Skills Canada National Competition.

The following 9 skills have been identified and validated as key essential skills for the workplace in the legend below:

<sup>1</sup>Numeracy, <sup>2</sup>Oral Communication, <sup>3</sup>Working with Others, <sup>4</sup>Continuous Learning, <sup>5</sup>Reading Text, <sup>6</sup>Writing, <sup>7</sup>Thinking, <sup>8</sup>Document Use, <sup>9</sup>Digital

These essential skills have been identified with in section 2.3 and/or 3.2 of your Contest Description. The top three Essential Skills for your area of competition have been identified on your Project and all other supporting project documents.

## **2 CONTEST INTRODUCTION**

### **2.1 Description of the associated work role(s) or occupation(s)**

<http://skillscompetencescanada.com/en/skills/construction/plumbing/>

### **2.2 Purpose of the Challenge.**

To assess the contestant's knowledge and skills in the installation of a plumbing system with high regard to the aspects of quality workmanship, proficiency of pipe joinery techniques and accuracy of work within as specified time frame.

### **2.3 Duration of contest.**

12 hours

### **2.4 Skills and Knowledge to be tested.**

Mathematical problem solving, safe work practices, proper use of tools, correct pipe assembly techniques, blueprint and/or specification interpretation ability and a strong positive work ethic.

### 3 CONTEST DESCRIPTION

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

DOCUMENT	DATE OF DISTRIBUTION VIA WEBSITE
Test Project	January, 2018

3.2 Tasks that may be performed during the contest

- Applying mathematical concepts involving parallel, 60, 45, 22 ½ ° offsets.<sup>1</sup>
- Interpreting and applying the blueprint specifications, product specifications and shop drawings<sup>8</sup>
- Submit isometric drawings and material list for assessment
- Assembly of various pipe and fitting systems<sup>7</sup>
- Interpreting NRC plumbing code (2015 edition)<sup>5</sup>
- Copper – soft soldering (lead free with water based flux), press fit
- Plastic PVC drainage using System 15 One Step cement
- Bending of copper tube using mechanical benders
- Apply safe work practices
- All dimensions shall be in millimeters
- All dimensions will be taken from the designated centreline or benchmarks (datum lines)

*Essential Skills - <sup>1</sup>Numeracy, <sup>5</sup>Reading Text, <sup>7</sup>Thinking (Job Task Planning and Organization),  
<sup>8</sup>Document Use*

## **4 EQUIPMENT, MATERIAL, CLOTHING**

### **4.1 Equipment and materials provided by Skills/Compétences Canada.**

- Tri-stands
- Soldering torches (B tank turbo)
- 2 ft levels
- Adhesives
- Teflon
- Threading compound
- Soldering paste
- Flux brushes
- ½" and ¾" cleaning brushes
- Sand cloth
- Isometric paper
- Pocket calculators (Non-programable)
- Lever style bender for 5/8" O.D. copper (6 benders will be there for competitors to share)
- Tape Measure (Metric) & Imperial
- Cordless Drill ½"
- Cordless Drill ¾"
- #2IR 6" Bit Tip
- 2 ft carpenters square
- Combination squares

**COMPETITORS WILL BE REQUIRED TO USE THE MATERIAL AND EQUIPMENT PROVIDED BY SCC. ALL OTHER MATERIAL AND EQUIPMENT WILL BE REMOVED FROM THE SKILL AREA.**

#### 4.2 Equipment and material provided by the competitor.

**Note:** No other tools than the tools listed below will be allowed into competition area

- Metal rules metric
- IPT Red Hand Book (NTC will check for private notes in it)
- Measuring tape in millimeters (25 mm wide recommended)
- 9" torpedo levels
- 8-inch standard utility pliers or equivalent
- Plastic pipe cutters for up to 3" (manual)
- Plastic pipe reamer 3", 2", 1 ½"
- 10-inch or 12-inch metal saw with spare blades, or equivalent
- Adjustable wrenches (8" and 12" recommended) or equivalent
- Tube cutters for 3/16" to 1 1/8" diameter copper tube or equivalent
- Mini pipe cutter or equivalent
- 16-ounce hammer or equivalent
- ½ round steel file and or flat smooth file with a handle
- Plumb bob
- Pencils / soapstone / markers / erasers
- Paper
- Utility knife
- Striker
- Copper de-burring tool
- Assorted screw drivers
- Hex and or spud 14-inch wrench
- Tool box maximum dimensions: Height 16" length 30" width 16" (4.5 cu.feet)
- Centre punch
- Chalk line
- NRC Plumbing Code 2015

#### 4.3 Required clothing provided by the competitor

- Long sleeve clothing
- No jewellery
- Long hair must be tied back and concealed

## 5 SAFETY REQUIREMENTS

### 5.1 Safety workshop

Upon arrival at the Skill area, Competitors will participate in a Safety workshop and they will be expected to work and maintain a safe working area during the competition. Any Competitor breaking any health, safety and environmental rules may be required to undertake a second safety workshop.

### 5.2 List of required personal protective equipment (PPE) provided by Skills/Compétences Canada

- Safety Glasses
- Ear plugs
- Leather gloves

### 5.3 List of required personal protective equipment (PPE) provided by the competitor

- CSA approved Safety shoes
- Nitrile-coated gloves

## 6 ASSESSMENT

### 6.1 Point breakdown

POINT BREAKDOWN	/100
Accuracy of drawing	5
Installation conforms to plan : drainage	25
Installation conforms to plan : hot water	20
Installation conforms to plan : cold water	20
Piping Installation assessment	20
Safety	5
Materials	5
Full points for dimension within 2mm	
Half points deduction for dimension more than 2 to 4mm.	
No points awarded for dimensions more than 4mm.	
One point deduction for each material item requested.	
One point deduction for each deviation from plan	

## 7 CONTEST SPECIFIC RULES

Contest specific rules cannot contradict or take priority over the Competition Rules. They do provide specific details and clarity in areas that may vary from contest to contest. Any additional contest rules will be reviewed during competitor orientation.

TOPIC/TASK	CONTEST SPECIFIC RULE
Safety	<ul style="list-style-type: none"> <li>Competitors must wear long sleeves while soldering</li> </ul>
Tools / Infrastructure	<ul style="list-style-type: none"> <li>No project specific aids, tools or jigs allowed</li> <li>The National Technical Committee (NTC) will be conducting a tool box inspection during competitor orientation</li> </ul>

## 8 ADDITIONAL INFORMATION

### 8.1 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.

### 8.2 Tie (No ties are allowed)

In the event of a tie, the competitor with the highest score in the Accuracy of drawing criteria will be declared the winner. If a tie still remains, the competitor with the highest score in the material criteria will be declared the winner. If a third tie occurs, the competitor with the highest score in the accuracy criteria will be declared the winner.

### 8.3 Test Project change at the Competition

Where the Test Project has been circulated to Competitors in advance, NTC shall change a maximum of 30% of the work content. Please refer to the Competition Rules.

### 8.4 Competition rules

Please refer to the [competition rules](#) of the Skills Canada National Competition.

## 9 NATIONAL TECHNICAL COMMITTEE MEMBERS

Member Organization	Name
British Columbia	Pat Barringer
Manitoba	Lee Demers
Québec	Pascal Gagnon
Prince Eduard Island	Mark McQuaid
Saskatchewan	Mitch Grenier
Newfoundland and Labrador	Chris Gushue
Alberta - Chair	Matthew Lindberg
Yukon	Dan Scobie
Nova Scotia	Jason Saltzman
New Brunswick	Brian Siddall

Contact the Skills/Compétences Canada national secretariat for any questions or concerns: Marilou Leduc ([mariloul@skillscanada.com](mailto:mariloul@skillscanada.com)).