



CONTEST DESCRIPTION

## Plumbing

POST-SECONDARY

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## 1 THE SKILLS FOR SUCCESS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY

In response to the evolving labour market and changing skill needs, the Government of Canada has launched the new Skills for Success (*former Essential Skills*) model defining nine key skills needed by Canadians to participate in work, in education and training, and in modern society more broadly. SCC is currently working with Employment and Social Development Canada (ESDC) to bring awareness of the importance of these skills that are absolutely crucial for success in Trade and Technology careers. Part of this ongoing initiative requires the integration and identification of the Skills for Success in contest descriptions, projects, and project documents. The next phase and very important aspect of our Skills for Success (SfS) initiative is to provide a *Skills Report Card* to each competitor at the Skills Canada National Competition. The purpose of the report card is to inform the competitor about their current level of nine identified Skills for Success based on their competition scores. With this knowledge, the competitor will be made aware which 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 skills for success for the workplace in the legend below:

<sup>1</sup>Numeracy, <sup>2</sup>Communication, <sup>3</sup>Collaboration, <sup>4</sup>Adaptability, <sup>5</sup>Reading, <sup>6</sup>Writing, <sup>7</sup>Problem Solving, <sup>8</sup>Creativity and Innovation, <sup>9</sup>Digital

These Skills for Success have been identified in section 2.4 and/or 3.2 of your Contest Description and if applicable, in your Project and supporting documents.

## 2 CONTEST INTRODUCTION

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

[https://www.skillscompetencescanada.com/en/skill\\_area/plumbing/](https://www.skillscompetencescanada.com/en/skill_area/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 joining techniques, accuracy of work, and time management.

### 2.3 Duration of contest

12 hours

## 2.4 Skills and Knowledge to be tested.

Mathematical problem solving<sup>1,7</sup>, safe work practices, proper use of tools, correct pipe assembly techniques<sup>7</sup>, blueprint and/or specification interpretation ability<sup>5</sup> 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 on the Skills/Compétences Canada website

DOCUMENT	DATE OF DISTRIBUTION
Project	December 2022

### 3.2 Tasks that may be performed during the contest

- Applying mathematical concepts involving parallel, 60, 45, 22 1/2 ° offsets.<sup>1,7</sup>
- Interpreting and applying the blueprint specifications, product specifications and shop drawings<sup>5</sup>
- Submit isometric drawings and material list for assessment<sup>6</sup>
- Assembly of various pipe and fitting systems.<sup>7</sup>
- Copper – soft soldering (lead free with water-based flux) and press fit
- Plastic DWV drainage
- 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)

*Skills for Success - <sup>1</sup>Numeracy, <sup>5</sup>Reading, <sup>6</sup>Writing, <sup>7</sup>Problem Solving*

## 4 EQUIPMENT, MATERIAL, CLOTHING

### 4.1 Equipment and material provided by Skills/Compétences Canada

- Tri-stands
- Soldering torches
- 2 ft levels
- Solvent cement
- Teflon tape
- Soldering paste
- Flux brushes
- 1/2" and 3/4" cleaning brushes
- Sand cloth
- Isometric paper

- Lever style bender for 5/8" O.D. copper, Ridgid model #510
- Angle Cordless Drill 1/2"
- Cordless Drill 1/2"
- #2 and #3 Robertson 6" Bit Tip
- 2 ft carpenter's 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 Handbook (NTC will check for private notes in it)
- Measuring tape with millimeters (25 mm wide recommended)
- 9" torpedo levels
- Plastic pipe cutters for up to 3" (manual)
- Plastic pipe reamer 3", 2", 1 1/2"
- 10-inch or 12-inch metal saw with spare blades, or equivalent
- Adjustable wrenches (6" 8" and 12" recommended) or equivalent
- Pipe Wrenches (8", 10" and 12" recommended) or equivalent
- Tube cutters 5/8" to 2 1/8", Ridgid #20 or equivalent
- Tube cutters (Ridgid #15 or equivalent) for 3/16" to 1 1/8" diameter copper tube
- Mini pipe cutter or equivalent
- 16-ounce hammer or equivalent
- 1/2 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 18" length 30" width 18" (5.6 cu.feet)
- Centre punch
- Chalk line

- NRC Current Plumbing Code
- Pex cutters
- 5/16" nut driver
- Pocket calculators (non-programable)

#### 4.2.1 Toolboxes Guidelines

One of the objectives of SCC is the sustainability of the Competition. As a result, the toolboxes brought by Competitors will be restricted to the following maximum specifications.

The Competitor toolbox must not exceed 1 meters<sup>3</sup> in volume. It can be multiple toolboxes, but the total of all toolboxes must not exceed the maximum volume indicated. There is no exception to this rule. If the Competitor toolbox is larger than what is indicated, the Competitor with the guidance of the NTC, will need to remove items from the toolbox and those items will not be used during the competition. All tools must fit inside one or more toolboxes. Tools outside of a toolbox will not be permitted.

#### 4.3 Required clothing provided by the competitor

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

### 5 HEALTH AND SAFETY

#### 5.1 Safety program

SCC has implemented a comprehensive safety program as health and safety is an integral part of our competitions. Our safety program includes guidelines and procedures to make the work environment in each skill area safer.

##### 5.1.1 Safety manual

As part of our program a safety manual has been created to monitor and document health and safety within each skill area. It includes a definite plan of action designed to prevent accidents. The safety manual will be provided for every skill and these instructions must be followed and respected by all participants and officials at the SCNC.

##### 5.1.2 Safety workshop

During orientation, 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, this will not affect the Competitor's competition time.

## 5.2 COVID-19 Protocol

The COVID-19 guidelines will be shared as soon as they are available.  
The COVID-19 guidelines will be subject to change based on the COVID-19 guidelines in place at the time of the competition.

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

- Safety Glasses
- Ear plugs
- Leather gloves

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

- CSA approved Safety shoes
- Nitrile-coated gloves
- Knee pads or equivalent

**Note:** Competitors who do not have the required protective equipment will not be allowed to participate in the competition

# 6 ASSESSMENT

## 6.1 Point breakdown

**Note:** This list is subject to change.

TASKS	/100
Cleanliness of completed project	5
Assessment of Drainage	35
Assessment of hot water installation	25
Assessment of cold-water installation	25
Assessment of fixture installation	10
Full points for dimension within 2mm. Half points deduction for dimension more than 2 to 4mm. No points awarded for dimensions more than 4mm.	

# 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 the competitor orientation.

TOPIC/TASK	CONTEST SPECIFIC RULE
Safety	Competitors must wear long sleeves while soldering
Tools / Infrastructure	No project specific aids, tools or jigs allowed The National Technical Committee (NTC) will be conducting a toolbox inspection during competitor orientation

## 8 ADDITIONAL INFORMATION

### 8.1 Interpreter

If a competitor requires the help of an interpreter once onsite during the competition, 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 may not be guaranteed.

### 8.2 Ties

- **Tiebreaker #1:** In the event of a tie, the competitor who completed the project in the shortest amount of time will be declared the winner.
- **Tiebreaker #2:** If a tie remains, the competitor with the most complete project will be declared the winner.
- **Tiebreaker #3:** If a third tie occurs, the competitor with the highest score in the “Assessment of cold-water installation” 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

Refer to the competition rules of the Skills Canada National Competition which can be found on our website.



## 9 NATIONAL TECHNICAL COMMITTEE MEMBERS

MEMBER ORGANIZATION	NAME
Newfoundland and Labrador	Christopher Gushue
Ontario	Dan Shelley
Manitoba	Patrick Savard – Chair
British Columbia	Pat Barringer
Yukon	Dan Scobie – Co-Chair
Nova Scotia	Ronda Frigault
New Brunswick	Brian Siddall

Contact the Skills/Compétences Canada national secretariat for any questions or concerns: Nathalie Maisonneuve ([nathaliem@skillscanada.com](mailto:nathaliem@skillscanada.com)).