



CONTEST DESCRIPTION

# Steamfitter-Pipefitter

POST-SECONDARY

## Table of Contents

<b>1</b>	<b>THE SKILLS FOR SUCCESS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY</b> .....	<b>2</b>
<b>2</b>	<b>CONTEST INTRODUCTION</b> .....	<b>2</b>
<b>3</b>	<b>CONTEST DESCRIPTION</b> .....	<b>3</b>
<b>4</b>	<b>EQUIPMENT, MATERIAL, CLOTHING</b> .....	<b>3</b>
<b>5</b>	<b>HEALTH AND SAFETY</b> .....	<b>5</b>
<b>6</b>	<b>ASSESSMENT</b> .....	<b>6</b>
<b>7</b>	<b>CONTEST SPECIFIC RULES</b> .....	<b>6</b>
<b>8</b>	<b>ADDITIONAL INFORMATION</b> .....	<b>7</b>
<b>9</b>	<b>NATIONAL TECHNICAL COMMITTEE MEMBERS</b> .....	<b>8</b>

## 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/steamfitter-pipefitter/](https://www.skillscompetencescanada.com/en/skill_area/steamfitter-pipefitter/)

### 2.2 Purpose of the Challenge

To assess the contestant's knowledge and skills in the fabrication of a piping system and components, with high regard to the aspects of quality, workmanship and accuracy of work.

### 2.3 Duration of contest

12 hours

## 2.4 Skills and Knowledge to be tested.

- Applying mathematical concepts involving planning, measuring and layout of a piping system
- Interpretation and application of blueprint specifications
- Assembling and fabricating a piping system
  - Measure, cut, and fabricate steel pipe and copper tube systems
  - Use fabrication tools & equipment to join pipe and fittings
  - Applying safe work practices
- Assemble and fabricate two heating systems and related components
  - Measure, cut, thread, Pressfit, braze and solder and install two (2) heating systems (hydronic and steam)
  - Apply safe work practices

## 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 (drawing)	January 2022

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

- Applying mathematical concepts involving offsets<sup>1</sup>
- Interpreting and applying the blueprint specifications<sup>5</sup>
- Assembly of various pipe and fitting systems
  - Carbon steel threaded / bolted / Megapress®
  - Copper soldering / BCup3 brazing / Tube Bending, and Pressfit
  - Heating Systems Fabrication
  - Fabrication of hangers for system supports
- All dimensions shall be in millimetres and/or inches
- All dimensions will be taken from the designated centerline or benchmarks unless directed otherwise
- Proper insertion for all pipe joint is mandatory<sup>7</sup>

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

## 4 EQUIPMENT, MATERIAL, CLOTHING

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

- Pipe threaders
- Benches, vices and/or tables
- Consumables
- “B”- tanks c/w regulator, hose and torch kit

- Soap stone / and holder
- Permanent sharpie marker / calculators
- Ball Peen Hammer
- Ridgid #15 and Ridgid #20 cutters
- Master Pro-Dope, Brush top
- Teflon tape
- Power cords (GFCI)
- Tig gloves and Hy-flex
- 14", 18" and 24" Aluminum Pipe Wrench
- 18" hex wrench
- 12" Spud Wrench
- Tri-Stand Chain Vice
- V-head high pipe stand - 28" - 52"
- RP 200 Battery Press Tool kit w/ProPress Jaws 1/2"-1"
- RP 340 Battery Press Tool Kit w/MegaPress Jaws 1/2" – 2" Steel
- Copper Reamer
- 535 Threading Machine Complete w/ die heads 1/2" – 2"
- Nipple Chuck complete
- 9/16" combination wrench
- 10" Half round file c/w handles
- Round rattail file c/w handle
- Hacksaw
- 18" Fatmax Open Tote
- 12" Adjustable Wrench
- 8" Adjustable Wrench
- 18-volt 1/2" cordless drills
- Utility knife
- 1/2" Drive Torque wrench c/w 1 1/4" socket
- 2' Carpenters Square
- 1' Combination Square

**Note:** No other tools than the tools listed **ABOVE** will be allowed into skill area.

**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

- 5m/16' Tape Measure
- 9" Torpedo Level
- 12" Grooved Joint Pliers

#### 4.3 Required clothing provided by the competitor

- Coveralls / overalls allowed if sleeves used
- Long sleeves must be worn at all times
- 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 BC 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
- Mechanic Gloves

- Nitrile Gloves
- Earplugs
- Tinted glasses for brazing
- Hard Hats
- Leather Tig Gloves

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

- CSA approved safety shoes
- Competitors may bring their own hardhats and gloves if they meet CSA standards/requirements and are approved by NTC safety committee representative, prior to the event

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
Steam System	45
Hydronic System	25
Heat Exchanger	10
Auxiliary Piping	10
Testing	10

## 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
Use of technology - personal laptops, cameras and mobile phones	<ul style="list-style-type: none"> <li>• Competitors are not allowed to bring personal laptops, cameras, or mobile phones into the skill area</li> </ul>
Infrastructure – material and equipment	<ul style="list-style-type: none"> <li>• IPT Handbooks are not allowed in the competition area</li> <li>• All tools, materials, and PPE will be supplied by the competition committee with exception to section 5.3</li> </ul>

	<ul style="list-style-type: none"> <li>• Competitors will be allowed to do a tool inspection during competitor orientation</li> <li>• No project specific aids, tools or jigs allowed</li> <li>• Competitors requiring assistance using equipment can ask for help from the National Technical Committee (NTC) during orientation</li> <li>• If required, tool demonstrations may be provided</li> </ul>
Competitor Interaction	<ul style="list-style-type: none"> <li>• Competitors will not be allowed to help fellow competitors during the competition</li> <li>• Coaches will not be able to speak to the competitor during orientation or the competition</li> <li>• Any grievances will be filed as per Skills Canada's guidelines and policies</li> </ul>
Safety	<ul style="list-style-type: none"> <li>• It is to be understood that throughout the competition, safety and project judging will be ongoing</li> </ul>

## 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 with the highest score in the Steam Piping criteria will be declared the winner.
- Tiebreaker #2: If a second tie occurs, the competitors with the highest score in the Hydronic System criteria will be declared the winner.
- Tiebreaker #3: If a third tie occurs, the competitors with the highest score in the Brazing criteria will be declared the winner.
- All decisions made by the judging team are considered final.



### 8.3 Test Project change at the Competition

Where the Test Project has been circulated to Competitors in advance, NTC shall at their discretion 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
Nova Scotia	Greg Pope
New Brunswick	Michel Breau
Quebec	Mélanie Prévost
Ontario	Ray Lemieux – Chair
Saskatchewan	Chris Henriksen
Alberta	Glen Aspen
British Columbia	William Schwarz – Co-Chair

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