



**SCNC**  
**SKILLS CANADA**  
**NATIONAL**  
**COMPETITION**



**OCMT**  
**OLYMPIADES**  
**CANADIENNES**  
**DES MÉTIERS**  
**ET DES**  
**TECHNOLOGIES**

  
**SkillsCompétences**  
**Canada**  
Halifax2019

CONTEST DESCRIPTION / DESCRIPTION DE CONCOURS

# **STEAMFITTER - PIPEFITTER TUYAUTERIE ET MONTAGE DE VAPEUR**

POST- SECONDARY / NIVEAU 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:

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

These essential skills have been identified in your Contest Description and if applicable, in 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/steamfitter-sprinkler-system-installation/>

### **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 system
  - 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, 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.

DOCUMENT	DATE OF DISTRIBUTION VIA WEBSITE
Test Project	Janvier 2019

### 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>8</sup>
- Assembly of various pipe and fitting systems
  - Carbon steel threaded / bolted / Megapress
  - Copper soldering / Silfos brazing / Mechanical joints/ Tube Bending
  - 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

*Essential Skills – 1Numeracy, 8Document Use*

## 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/ProPress 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 rattle file c/w handle
- Hacksaw
- 18" Fatmax Open Tote
- 12" Adjustable Wrench
- 8' Adjustable Wrench
- 18 volt 1/2" cordless drills
- Cordless 5" angle grinder
- 5" Cutting discs
- Utility knife
- 1/2" Drive Torque wrench c/w 1 1/4" socket
- **Note:** No other tools than the tools listed **ABOVE** will be allowed into skill area.

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

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

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.

#### **4.3 Required clothing provided by the competitor.**

- Coveralls / overalls allowed if sleeves used
- 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, this will not affect the Competitor's competition time.

#### **5.2 Personal protective equipment (PPE) provided by Skills/Compétences Canada.**

- Safety glasses
- Mechanic Gloves
- Nitrile Gloves
- Earplugs
- Face Shields with harness
- Hard Hats
- Leather Tig Gloves

#### **5.3 Personal protective equipment (PPE) provided by the competitor.**

- CSA approved safety shoes

### **6 ASSESSMENT**

#### **6.1 Point breakdown**

POINT BREAKDOWN	/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 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> <li>•</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 and materials will be supplied by the competition committee.</li> <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)</li> <li>•</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>•</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 Translation

If a competitor requires translation 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 might not be guaranteed.



## 8.2 Ties

- Tiebreaker #1: In the event of a tie the competitor with the highest score in the Auxiliary 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 Heat Exchanger 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

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
British Columbia	Jamie McPherson
Newfoundland and Labrador	Bruce Gillingham
Ontario - Chair	Ray Lemieux
Saskatchewan	Chris Henriksen
New Brunswick	Michel Breau
Alberta	Chris Waples
Nova Scotia – Co-Chair	Greg Pope

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