Skills Compétences Canada











CONTEST DESCRIPTION

Industrial Mechanics

POST-SECONDARY

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

The Government of Canada has updated the previous Essential Skills framework to the new Skills for Success model in response to the evolving labour market and changing skill requirements. This model outlines nine fundamental skills Canadians need to thrive in work, education, training, and daily life.

Skills/Compétences Canada aims to highlight the importance of these skills, vital for success in trade and technology careers. Competitors can see how Skills for Success are integrated into contest descriptions, projects, and project documents. Recognizing these skills during the competition helps competitors match tasks with specific skills necessary for success and understand how these skills apply within their trade or technology programs and future careers.

The nine key Skills for Success, validated for workplace success, are:

1. Numeracy
2. Communication
3. Collaboration
4. Adaptability
5. Reading
6. Writing
7. Problem Solving
8. Creativity and Innovation
9. Digital

These Skills for Success are detailed in sections 2.4 and/or 3.2 (to be completed by SCC) of your Contest Description and, if relevant, 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/industrial-mechanic/

2.2 Purpose of the Challenge

The Industrial Mechanic competition evaluates competitors on essential trade competencies, emphasizing safe work practices, professionalism, technical knowledge, and precision skills. Participants will demonstrate their ability to fabricate, assemble, align, troubleshoot, repair, and maintain industrial equipment while completing tasks under industry-relevant scenarios.

2.3 Duration of contest

12 hours

2.4 Skills and Knowledge to be tested.

The skills and knowledge assessed in this competition reflect core Industrial Mechanic competencies and are organized into four main categories:

1. Fabrication and Welding:
2. Alignment and Predictive Maintenance
3. Fluid Power
4. Power Transmission and Industrial Equipment

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
Test Project	Distributed on competition days
2027 Skill Scope	December 2026

3.2 Tasks that may be performed during the contest.

- Fabrication and Welding ○ Perform precision hand layout operations.[1,7] ○ Perform hand and power tool operations.[1,7]
    - ○ Measure and interpret dimensions using both Imperial and metric systems.[1,5.7]
    - ○ Perform fabrication and welding tasks as per given blueprints. (Symbols Adapted to Scope of CSA W59 Standard. Canadian Welding Bureau.)[5,7]

- Alignment and Predictive Maintenance
    - ○ Perform a levelling procedure.[1,5,7]
    - ○ Perform a machine shaft alignment using dials and/or a laser alignment tool.[1,5,7,9]
    - ○ Calculate the thermal growth of a machine.[1,4,7]
    - ○ Perform Predictive Maintenance tasks such as vibration measurement and balancing.[1,5,7]
- Fluid Power
    - ○ Install supplied fluid power components and build the required circuit as per given instruction. [1,5,7]
    - ○ ISO Fluid Power schematic drawings standards.[5]

- Installation of fluid conductors.[5,7,8] ○ Troubleshoot fluid power systems.[7,8]
- Perform and demonstrate the required skills to bend stainless steel tubing and install tube fittings to the given specifications to fit mechanical components.[5,7]

- Power Transmission and Industrial Equipment ○ Read and interpret blueprints.[5] ○ Disassembly and reassembly of industrial mechanical equipment.[5,7] ○ Installation of mechanical components.[1,5,7]

4 EQUIPMENT, MATERIAL, CLOTHING

4.1 Equipment and material provided by Skills/Compétences Canada

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.

This includes:

- All hand and power tools.
- All measuring equipment.
- All welding tools.
- All equipment manuals.
- All manufacturer specific tools.
- All required software.

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

- N/A

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

Competitors must wear appropriate work attire that is well-fitting, clean, and in good condition, including full-length pants.

- Clothing must be suitable for the required tasks being performed.
- Provincial attire is acceptable.
- Long sleeve or coveralls options may be used depending on task.
- Long hair must be tied back.
- Attire with visible logos may be required to be covered or removed.

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

- Grinding face shields
- Mechanics gloves
- Ear plugs
- Safety glasses
- Welding helmets
- Welding jacket and gloves.

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

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

- CSA steel-toed safety workboots/shoes
- Personal safety glasses may be used (not required)
- Mechanics gloves may be used (not required)
- Competitors may bring their own certified welding PPE, including helmet, jacket, and gloves. (not required)
- Personal hearing protection.

Note: Personal protective equipment provided by the competitor may be used at the discretion of the National Technical Committee based on safety, application, and competition fairness.

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
Fabrication and Welding	25%
Alignment and Predictive Maintenance	25%
Fluid Power	25%
Power Transmission and Industrial Equipment	25%

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 electronic devices	• Electronic devices (including phones and smart devices) cannot be used during competition. • Competitor phones brought on site will be stored during competition time.
Competition documents and drawings	• Must not be removed from competition site and can not to be recorded. • Competitors must use provided documents.
Safety and Behaviour	• Safety rules and PPE requirements must be adhered to at all times when on the contest floor. • Competitors must behave in a respectful and professional manner. No alcohol or drugs allowed.

	• Tools and equipment must be used in an appropriate and safe manner.

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 Alignment will be declared the winner.
- Tiebreaker #2: If a tie still remains, the competitor with the highest score in the Fabrication and Welding will be declared the winner.
- Tiebreaker #3: If a tie still remains, the competitor with the highest score in the Power Transmission and Industrial Equipment 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
New Brunswick	Patrick Guignard
Quebec	Mohamed Flyes – Co-Chair
Ontario	Jake Doan
Manitoba	Robert Jones
Saskatchewan	Neil Dielschneider
Alberta	Jason Parnell – Chair
British Columbia	Carey Simpson

Contact the Skills/Compétences Canada national secretariat for any questions or concerns: Olga Malvine Rwemera (olgamr@skillscanada.com).