



CONTEST DESCRIPTION / DESCRIPTION DE CONCOURS

SHEET METAL WORK TOLERIE

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 2017 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 with in section 2.4 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 roles(s) or occupation(s)

<http://skillscompetencescanada.com/en/careers/construction/sheet-metal/>

2.2 Purpose of the Challenge.

To enable students to demonstrate their skills work with sheet metal.

2.3 Duration of contest.

12 hours

2.4 Skills and Knowledge to be tested.

Sheet metal layout and fabrication skills will be tested.

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 (isometric drawings)	January, 2017

3.2 Tasks that may be performed during the contest

Layout Skills⁷

- Simple layout
- Triangulation from plan and triangulation from elevation (side view)⁸
- Simple radial line development with parallel openings
- Square, polygon or round rain caps
- 90° round on round tees
- Round elbows and offsets (Non reducing except for BE – SE)
- Any of the following rectangular fittings (All changes in size must occur on the cheeks)¹
 - Offsets
 - Elbows
 - Y-Branches
 - Take-off

Methods of Fastening and Joining⁷ (any of the following):

- Rivets
 - Pop
 - Solid
- Sheet metal screws
- Nuts and bolts
- Welding
 - MIG
 - Spot (Resistance)
- Grooved seams
- Single and double seams
- Lap and spot
- Hammerlock (Round or rectangular)
- BE – SE slip
- Pittsburgh (Irish) lock
- Slip and drive
- Standing “T” or C.P.R.
- Elbow seam
- Wired edge

Essential Skills – ¹Numeracy ⁷Thinking (Problem Solving) ⁸Document Use

4 EQUIPMENT, MATERIAL, CLOTHING

4.1 Equipment and material provided by Skills/Compétences Canada

- MIG welders c/w 0.025" wire and 25% CO2 / 75% Argon (1 for 4 comp.)
- Welding Curtains
- Flat metal table for welding and grinding (1 for 4 comp.)
- Welding helmets (1 for 4 comp.)
- Scrap Metal Bin
- Brooms (2)
- Standard hand brake – (1 for all comp.)
- Box and pan brake – (1 for all comp.)
- Blowhorn stakes (2 for all comp.)
- Hollow mandrel stakes (2 for all comp.)
- Rotary combination machines (Burring, Turning, Elbow, Beading) (1 per 2 comps.)
- 2" x 36" rolls (1 for all comp.)
- Hand groovers
- Pop rivet and guns (2 for all comp.)
- 30" x 72" work surface (1 per comp.)
- Stake holders (2 for all comp.)
- 20 - 16 gauge CR Steel
- 26 to 16 gauge galvanized iron
- 16 oz. cooper and/or brass
- Wire brush
- Rulers 48" - Stanley/Dewalt model: 2027A-48
- Framing Squares - Stanley/Dewalt model: 45-530
- Locking Grip "C" Clamp Pliers - Stanley/Dewalt model: 84-816
- Locking Grip needle Nose Pliers - Stanley/Dewalt model: 84-812
- Locking Vise Grip - Stanley/Dewalt model: 84-808
- 20v cordless drills - Stanley/Dewalt model: DCD780C2
- 4 1/2" angle grinder and grinding disks - Stanley/Dewalt model:
- Cutting discs - Stanley/Dewalt model: D28402K & DWA4311
- Flapper disc - Stanley/Dewalt model: DW8251
- 3/16" drill bits - Stanley/Dewalt model: DD4012B12
- 1/8" drill bits - Stanley/Dewalt model: DD4008ZB12
- Measuring Tape 25' - Stanley/Dewalt model: 33-725
- Rivet Gun - Stanley/Dewalt model: MR77C

Note: Some equipment listed above may not be available

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

- Screwdrivers (Standard and Robertson)
- Aviation snips (left and right cutting)
- Combination snips
- Dividers (2 sets)
- Trammel points
- Marking gauge
- Tape measure
- Hand seamers (folding pliers)
- C-clamp vice grips (2 sets)
- Standard vice grips (2 sets)
- Flat file
- Markers
- Half round file
- 12" rule
- Center punch
- Scratch awl
- Mallet
- Body hammer
- Tinnens hammer
- Protractor
- Adjustable wrench
- Hacksaw
- Combination square

These hand tools are recommended as a basic set. This list may be augmented by the competitor but certain specialized tools or other products may be subject to approval by the National Technical Committee and therefore may not be allowed for use in competition.

4.3 Required clothing (Provided by competitor)

- Proper welding attire (ie. Long sleeves and pants)

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 environment 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 competitors

- CSA approved Safety shoes
- Welding gloves

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

- Face Sheild – McCordick
- Hearing protection - McCordick
- Safety Glasses - McCordick

6 ASSESSMENT

6.1 Point breakdown

POINT BREAKDOWN	/100
Objective	
Critical Dimensions	25
Layout	15
Material Usage	5
Subjective	
MIG Welding	15
Seams, Edges and Fasteners	20
Overall Appearance	20

7 ADDITIONAL INFORMATION

7.1 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.

7.2 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.

7.3 Tie (No ties are allowed)

In the event of a tie, the competitor with the highest score in the Objective criteria will be declared the winner.

7.4 Competition Rules

Please refer to the competition rules of the Skills Canada National Competition.

8 NATIONAL TECHNICAL COMMITTEE MEMBERS

Member Organization	Name	Email address
Yukon	Nance Giordano	
Manitoba - Chair	Jeff Young	jyoung@rrc.mb.ca
Ontario	Jeffery Goheen	
Québec	Michel Pinard	
New Brunswick	Paul Lavigne	
Alberta	James Fehr	
British Columbia	Jud Martell	
Saskatchewan	TJ King	