

2022 POST-SECONDARY PROVINCIAL SKILLS CANADA COMPETITION



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Contest Description

Edmonton Expo Centre, Edmonton

May 4 & May 5, 2022

EVENT: Sheet Metal Work	LEVEL: Post-Secondary																								
WORLDSKILLS TRADE #: 14	LOCATION: Hall A, Edmonton Expo Centre, Edmonton																								
DURATION: 10 Hrs (Two Days)																									
COMPETITION SCHEDULE:																									
May 4:	May 5:																								
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Please Note: Due to the uncertainty caused by COVID 19, the PSCC could be subject to change at any time based on the public health context. This document is subject to change as competition information is updated. Competitors are responsible for staying up to date with the most recent information. Check the footer for last updated date. Changes will be highlighted in yellow.

CONTEST INTRODUCTION

Workers in the Sheet Metal field fabricate and install a wide variety of construction related items using sheet metal or plastic material components. The heating, ventilation and air-conditioning systems (HVAC) that control the temperature, humidity and total air quality in residential, commercial, and industrial buildings by precisely following blueprints, design specifications and manufacturer’s instructions. A Sheet Metal worker requires highly specialized and up to date skills to accomplish the various tasks involved in the trade.



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In Sheet Metal, technicians work with a variety of precision measuring tools to manipulate conditions such as pressures in air flow in duct systems. Voltmeters, pressure gauges, manometers and other testing devices are used in analyzing system performance. When servicing equipment, they must use extreme care in working with the different components of the HVAC systems because of some of the intricate systems.

TRAITS & TALENTS

For a successful career in Sheet Metal, you should have an aptitude for electronics and a curiosity about how things work. You must be courteous and tactful, and have good communication and listening skills for dealing with customer's needs in heating, ventilation, air conditioning problems, custom work, air balancing and small welding jobs. Good math skills and computer and problem-solving skills are important assets for working in this profession. It is also necessary to be physically fit as lifting and moving heavy equipment is sometimes required.

THE WORKPLACE

Sheet Metal workers apply their trade in commercial, industrial and residential buildings – anywhere that you would find HVAC and commercial stainless-steel kitchen equipment. They are employed by heating and ventilation contractors. Their skills are in demand in all sectors, and they are learning constantly since the technology involved is always changing. They often work indoors in cramped and awkward positions or at great heights on large commercial buildings.

RELATED OCCUPATIONS:

- Boilermaker
- Refrigeration & Air Conditioning
- Steel Fabricators
- Roofing
- Gas Fitter B
- Welder



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SKILLS AND KNOWLEDGE TO BE TESTED

Sheet metal layout and fabrication skills.

PROJECT DESCRIPTION

The project will be in imperial units and may include, but not necessarily all the following skills.

ISOMETRIC DRAWING

This project will not be exactly as shown here.



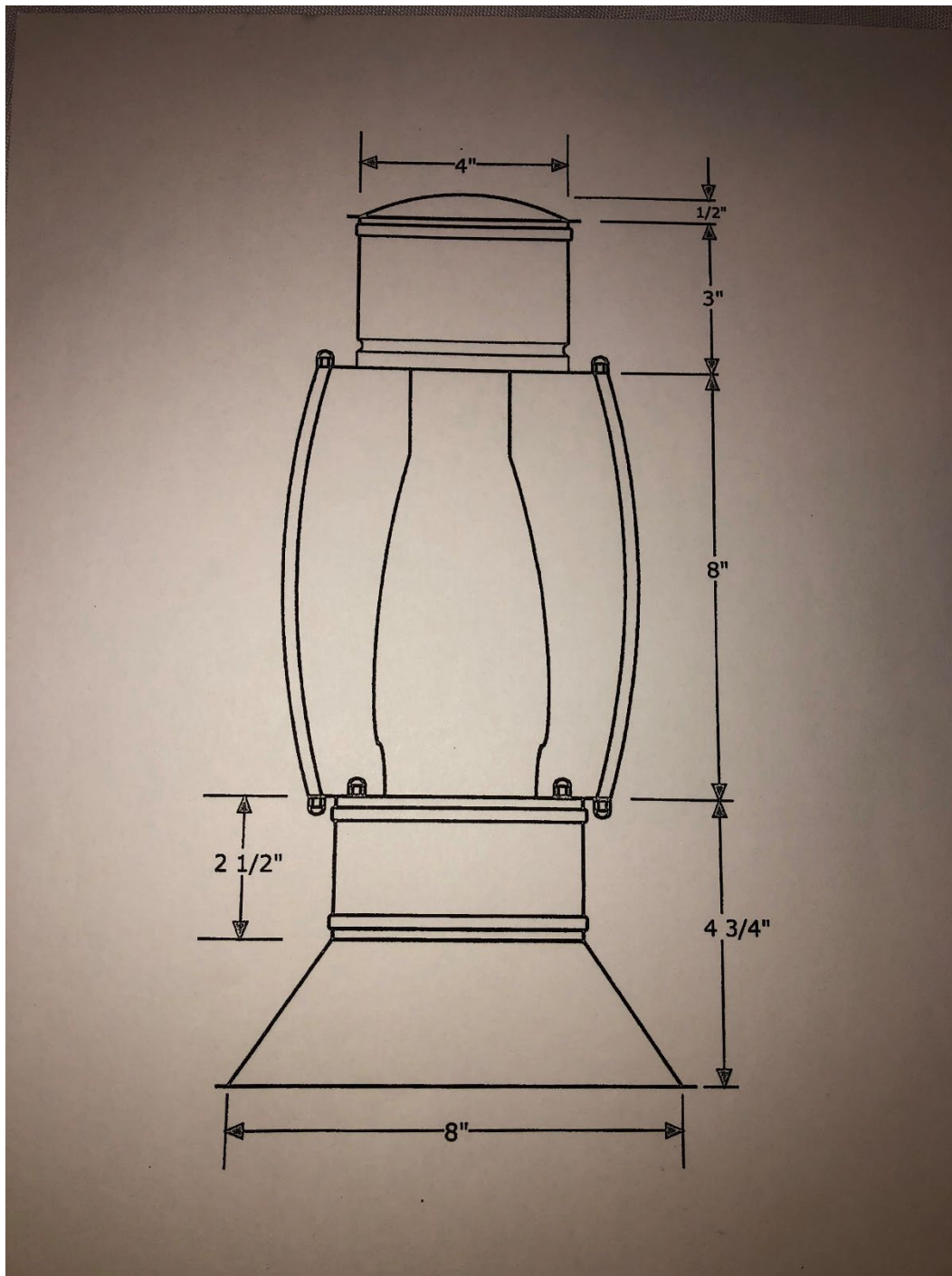
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Layout Skills

- Simple layout from plan view of a rectangular change fitting
- Any of the following rectangular fittings (All changes in size must occur on the cheeks)
 - Offsets
 - Elbows
 - Y-Branches
 - Take-offs
 - Simple layout

Methods of Fastening and Joining

- Rivets
 - Pop
- Sheet metal screws
- Welding
 - MIG
 - Spot (Resistance)
- Grooved seams
- Single and double seams
- Lap and spot
- Hammerlock (Round or rectangular)
- Pittsburgh (Irish) lock
- Slip and drive

EQUIPMENT & MATERIALS

Equipment and Materials Competitors Must Supply:

The following hand tools are recommended as a basic set to be supplied by the competitor. This list may be augmented by the competitor but certain specialized tools may be subject to approval by the committee.



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Screwdrivers (Standard and Robertson)	Combination snips	Aviation snips (left and right cutting)
Standard vise grips (2 sets)	Hack saw	Flat file
C-clamp vise grips (2 sets)	Hand seamers	Half round file
Combination Square	Adjustable wrench	12" and 36" rulers
Tee square	Tape measure and pee wee tape	Center punch
Framing square	Protractor	Scratch awl
Dividers (2 sets)	Marking gauge	Mallet (wood)
Trammel points	Tinners hammer	Body hammer

Equipment and Materials Supplied by Committee:

Flat metal table for welding and grinding (1 for all comp.)	Hand groovers
	4' x 8' work surface (1 per comp.)
MIG welder's c/w 030" wire	Stool (1 per comp.)
Welding helmets	110V power bar (1 per competitor)
Face shields	Box and pan brake – 16-gauge min. (1 for all comp.)
Standard hand brake – 16-gauge min. (1 for all comp.)	30" bar folders (2 for all comp.)
Bench vise (1 for 2 comp.)	Stake holders (2 for all comp.)
3' foot shear – 16-gauge min. (2 for all comp.)	4 ½ "angle grinders c/w flexible pads and discs (3 for all comp.)
Unishears or equivalent – 16-gauge CRS cap. (3 for all comp.)	Funnel (blowhorn) stakes (2 for all competitors)
Hatchet (knife) stakes (2 for all comp.)	Electric hand drills c/w drill bits (3 for all comp.)
Bevel edge square stakes (2 for all comp.)	Scrap metal bin
Hollow mandrel stakes (4 for all comp.)	Brooms (2)
Deep throat comb.	#8 x ½" and #10 x ¾" TEK screws
Rotary machine c/w wheels (1 for 4 comp.)	Pop rivets (copper)
2" x 36" rolls (2 for all comp.)	20 to 26-gauge galvanized iron
Glass	24-gauge Brass Sheets



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16-gauge CRS

20-ounce copper sheets

SAFETY

The health, safety and welfare of all individuals involved with Skills Canada Alberta are of vital importance. Safety is a condition of participation with Skills Canada Alberta and shall not be sacrificed for the sake of expediency. At the discretion of the judges and technical committees, any competitor can be denied the right to participate should they not have the required proper safety equipment and/or act in an unsafe manner that can cause harm to themselves or others.

Safety Requirements Supplied by the Competitor

- CSA approved Steel Toed footwear
- Safety glasses
- Welding gloves

*Competitors are required to follow all industry safety standards during the competition.

*Competitors will not be allowed into the competition area without the required safety equipment.

JUDGING CRITERIA:

Objective		Subjective	
Critical Dimensions	20%	Seams, Edges and Fasteners	20%
Secondary Dimensions	10%	Fit and Forming	20%
Square and Parallel	5%	MIG Welding	5%
Material Usage	5%	Overall Appearance	15%
<i>Objective Total</i>	<i>40%</i>	<i>Subjective Total</i>	<i>60%</i>

The judging is divided into two categories, objective and subjective. The objective marking is done as a group for every competitor and every judge for every competitor does the subjective marking. All subjective marks are out of 10 points and are weighted accordingly in the final calculation. Subjective marks must not have a range of more than 3 points between judges. All dimensions are outside unless otherwise noted.



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ADDITIONAL INFORMATION

Skills Canada Alberta Regional and Provincial Rules and Regulations

[Regional and Provincial Rules and Regulations](#)

Competitors must be prepared to adhere to all public health measures in place at the time of the PSCC.

Lunch

Lunch for competitors will be provided by Skills Canada Alberta.

Parking & Venue Maps

<http://edmontonexpocentre.com/attend/parking/>

Competitor Registration

Competitor Registration for the PSCC will take place on Tuesday May 3, 2022 from 9:00am-6:00pm outside Hall B of the Edmonton EXPO Centre. Please note you will be required to present your COVID-19 proof of vaccination.

Virtual Awards Ceremony

The Virtual Awards Ceremony will take place **Friday, May 6th at 6:30pm**. A link will be made available on the website with additional information prior to the ceremonies.

Team Alberta Information

Team Alberta (Post-Secondary) will be selected at the PSCC happening on May 4 - May 5, 2022. Top eligible medalists will compete at the Skills Canada National Competition (SCNC) May 24-28, 2022 in Vancouver, BC. It is recommended that competitors review the SCNC contest description to be familiar with the national contest description and project at <http://www.skillsCanada.com/>.

If a competitor is not able to attend the SCNC, competitors **MUST** notify Katherine Kupchenko katherinek@skillsalberta.com prior to the start of competition. If a gold medalist is not able to attend the SCNC, the next top-ranking individual will be asked to participate.

Test Project change at the Competition

Where the Test Project has been circulated to Competitors in advance, PTC can change a maximum of 30% of the work content.



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Questions?

Please contact Whitney Koop whitneyk@skillsalberta.com if you have any questions regarding the Contest Description.

COMMITTEE MEMBERS

Darryl Ficht	Jason Wright
Cory Wilson	Brent Rogoski
Ian Cook	Heath Foster

