

# 2021 PROVINCIAL SKILLS CANADA COMPETITION



## CONTEST DESCRIPTION

<b>CONTEST AREA: WELDING</b>			<b>LEVEL: Post-Secondary</b>
<b>COMPETITION DATE AND TIMES:</b>			<b>LOCATION:</b> Competitors will compete individually from their local Post-Secondary Institution
Orientation Day 1	April 24 <sup>th</sup>	8:30 a.m.-9 a.m.	
Competition Day 1- <b>Carbon Steel Project</b>	April 24 <sup>th</sup>	9 a.m.-12noon 12:30p.m.-2:30 p.m.	
Orientation Day 2	April 25 <sup>th</sup>	8:30 a.m.-9:00 a.m.	
Competition Day 2- <b>Stainless Steel Project</b>	April 25 <sup>th</sup>	9:00 a.m.-12noon	
<b>DURATION: 5 HRS DAY 1, 3 HRS DAY 2</b> <b>PROJECTS MUST BE COMPLETED ON EACH DAY</b>			WorldSkills Trade #10
<b>COMPETITION FORMAT: (VIRTUAL, AT A POST-SECONDARY INSTITUTION)</b> Competitors will compete individually, in person, from their local Post-Secondary Institution. Location specific COVID-19 protocols must be followed. Post-Secondary Institutions and competitors will need to work together to ensure the competitor is ready for success on their competition day. They will need to prepare their competition space with all of the required tools, equipment, materials, and technology (as listed below) that will be needed to complete the competition. This competition will be closed to the public. Only registered competitors and assigned Provincial Technical Committee members will be allowed to attend.			
<b>COMPETITION ORIENTATION:</b> The competition will begin with a virtual orientation. Competitors will join the assigned videoconference link that will be emailed to all registered competitors for the competition orientation. Camera's <b>MUST</b> be on and competitors visible on the camera during the orientation.			
<b>LIVESTREAMED COMPETITION: Competitors must film their competition throughout the entire day.</b> Camera's <b>MUST</b> be on and competitors visible on the camera, as well as mics working. Competitors must consider their camera angle and lighting in advance of the competition. It is the competitor's and Competition Facilitator's responsibility to ensure they are prepared for a day long livestream.			

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**PHOTO SUBMISSION INFO:** Once a competitor has completed their assigned project by the specified competition completion time (no additional time will be permitted), competitors must submit three groups of photographs for **EACH** of their projects WITHIN 15 MINUTES of the contest concluding. For the photos, please submit:

1. One overhead top shot
2. One right side shot
3. One left side shot
4. One angle shot

**\*All photos MUST include a copy of a student or photo ID next to the project.**

**PHOTO PROJECT SUBMISSION LINK-** Submissions can be uploaded to the following link:

<https://form.jotform.com/SkillsAB/2021PSCC>

Multiple files can be uploaded at once, each file has a maximum size of 1G. If file sizes are larger than 1G, please follow alternate instructions through the submission link.

**ACCEPTED FILE TYPE** - Zip file. To create a zip file – Select all the files that you would like to submit and right-click your mouse, a menu will open, select Send To, and then click on Compressed (zipped) folder. A zip file will then be created containing your submission documents.

## **COMPETITION & PHOTO SUBMISSION SCHEDULE: APRIL 24<sup>TH</sup>**

Live Stream Orientation – <b>Mandatory – On Camera</b>	8:30 a.m.
Competition Start – <b>On Camera</b>	9:00 a.m.
#1 Picture Group - Tacked project submitted before welding starts	
#2 Picture Group – Project progress pics	11:30 a.m.
Competition End	2:30 p.m.
Final #3 Picture Group – Final Project-Photos due	2:45 p.m.
*Lunch Break	12:00-12:30pm

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## COMPETITION & SUBMISSION SCHEDULE: APRIL 25<sup>TH</sup>

Live Stream Orientation – Mandatory – On Camera	8:30 a.m.
Competition Start – On Camera	9:00 a.m.
#1 Picture Group - Tacked project submitted before welding starts	
#2 Picture Group – Project progress pics	10:30 a.m.
Competition End	12:00 NOON
Final #3 Picture Group – Final Project - PHOTOS DUE	12:15 p.m.

**SHIPPING PROJECT FOR JUDGING:** Completed projects are to be shipped to the specified location that was included in the package you received your materials in. Please take note of the paid return shipping label that will be in the package. This must arrive to the specified location **NO LATER THAN end of day on April 29<sup>th</sup>, 2021.**

### 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 Checklist:** It is the responsibility of each competitor and teacher to review the Safety Checklist (<https://skillsalberta.com/additional-2021-competition-resources/>) in advance of the competition and ensure they are able to meet all safety requirements. During the orientation, the safety checklist will be formally reviewed.

**AWARDS CEREMONY INFORMATION:** Please join us for a live virtual awards ceremony on May 13<sup>th</sup> at 6:30PM.

**Please note:** 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

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## CONTEST INTRODUCTION

To enable competitors to demonstrate their knowledge & skill of welding principles. The competition will consist of practical examinations. Competitors will be expected to utilize their practical skills and knowledge in drawing interpretation, fitting and welding, SMAW, GMAW, GTAW and safety procedures will be evaluated.

## SKILLS AND KNOWLEDGE TO BE TESTED

Provincial Skills Canada competitors should be prepared to apply their theory knowledge in layout and drawing interpretation to complete a 5 hour practical project on Day 1, and a 3 hour practical project on Day 2. Projects may include **but are not limited** to the following tasks:

- SMAW- Groove welds on Plate or Pipe, root E6010 1/8, (E4310 3.2mm) fill and cap E7018 3/32 or 1/8, (E4918 2.5mm or 3.2mm) 1G,2G,3G,4G,6G,
- Fillets 1F 2F, 3F,4F 5F E7018 3/32 or 1/8 (E4918 2.5mm or 3.2mm)
- GMAW- root down fill and cap up on Plate or Pipe Groove- 1G,2G,3G,4G,6G, & Fillet 1F,2F,3F,4F,5F
- GTAW- ER 70S 3/32 or 1/8 root/fill E7018 3/32 or 1/8 (4918 2.2mm or 3.2 mm) fill/cap 1G,2G,3G,4G,6G
- GTAW – Stainless ER 308 1/16 or 3/32 2F,3F,4F,5F 1G, 2G, 3G and 6G

## PROJECT DESCRIPTION

### Day 1 Project-Carbon Steel (MUST be completed on Day 1) Total 5hrs

#### Day 1 Project Additional Info:

Once project is tacked together, **no more grinding is allowed.**

The project must remain flat on the workbench at all times during welding.

### Day 2 Project-Stainless Steel (Must be completed on Day 2) Total 3hrs

#### Day 2 Project Additional Info:

- There shall be no preparation of material on the stainless steel project. I.e. no filing, grinding, buffing etc.
- Tacks CAN NOT be more than 10mm in length.
- The project must remain flat on the workbench at all times during welding.
- This project must use an argon back purge.

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- No Backing bars/plates and restraining devices can be used at anytime.
- No chill plates, ceramic backing tapes/bars or run off tabs are to be used in the Competition.
- Purging equipment may only be used with the Gas Tungsten Arc Welding process on the stainless-steel project.
- Restraining devices shall not be used during welding of projects. Such devices include:
  - Clamps, jigs, fixtures or steel plates, tack welded to the test plates.
- All seams shall be welded in one pass/run with filler metal. The deposit of a second run with or without filler will result in no marks being awarded for the entire structure.
- During assembly and welding of stainless steel structure there shall be no gaps in any weld seam. If gaps are detected no marks will be awarded for the entire structure.
- If any of the joints are welding requisition no further inspection shall be carried out and no marks are to be awarded for the complete structure.
- No material removal, no grinding filing or cleaning shall be carried out on the structure. If any evidence is found no marks should be awarded.
- All welds of vertical or slope welds may only be done, with an upward progression.

Please see the attached dimensional prints and weld processes for this year's Post-Secondary competition. Please note that the attached project **may** be changed up to 30% on the day of the competition. All dimensions in millimeters.

## EQUIPMENT & MATERIALS

### Skills Canada Alberta Provided Tools, Equipment, Materials

Project Materials	Stainless steel 308. 1/8	Box 5 lbs E7018 1/8
Stainless steel Rod 308. 1/16	Box 5lbs E6010 1/8	Spool of 035 GMAW wire
Stainless steel 308. 3/32	Box 5 lbs E7018 3/32	GTAW ER70S-3 1/16
GTAW ER70S-3 3/32	GTAW ER70S-3 1/8	

### Competitor Provided Tools, Materials, and Equipment

**Competitor Tools will be Limited to the Following** (Supplied by the competitor):

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

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Helmet, #10, 11 or 12 lens	Welding gauge	Wedges
Speed lenses (optional)	Dividers	Chipping hammer
Soap Stone / markers	Protractor gauge	Wrap-A-Round
Centre punch	Digital level	Hacksaw blade
12" combination square (45° / 90°)	Ball peen hammer	Trigger clamps
Water spray bottle (e.g. Windex bottle)	All-purpose pliers / side cutters	Magnet bracket
Steel and stainless steel wire brushes	Vice grip AND C-CLAMPS	Files/ with handles
Cold chisel	Scriber	
<b>For all GTAW Welds, the maximum size of Gas Lens allowed to be used is, a # 8</b>		

## JUDGING CRITERIA

Undercut-Are all the welds free of undercut?
Arc strikes-Is the project free of arc strikes?
Are the GTAW welds free of surface porosity?
Are the SMAW welds free of surface porosity?
Cleanup-Is all weld spatter, fume residue and slag removed? <b>(Mild steel project only)</b>
Crater fill-Are end craters filled in?
Excessive root concavity (suck back)
Fitup-Are parts fitted as per drawing?
Fitup-Are parts fitted as per drawing? GATW Projects?
GMAW Fillet joints are completely fused to the parent material?
GMAW fillet size-Are the GMAW fillet sizes according to prints?
GMAW porosity-Are the GMAW welds free of surface porosity?
GMAW undercut & overlap-Are the GMAW beads free of undercut & overlap?
GTAW Fillet joints are completely fused to the parent material?
GTAW fillet size-Are the GTAW fillet sizes according to prints?
GTAW penetration-Is the GTAW groove weld completely penetrated?
GTAW reinforcement-Does the GTAW groove weld have excessive reinforcement?
GTAW undercut & overlap-Are the GTAW beads free of undercut & overlap?

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<p>                 Joints are free from Misalignment (1mm high/low)?                  No attempt to clean up project has been done <b>(to be presented as welded)</b>.                  Root contamination (sugaring)                  SMAW Fillet joints are completely fused to the parent material                  SMAW fillet size-Are the SMAW fillet sizes according to prints?                  SMAW reinforcement-Does the SMAW groove weld have excessive reinforcement                  SMAW undercut &amp; overlap-Are the SMAW beads free of undercut &amp; overlap?                  Weld appearance-Are welds beads consistence in appearance?                  Weld profile-Are all weld profiles as per symbols?                  Weld size-Are welds consistent in size per dwg requirement?                  Overall appearance             </p>
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## TIE BREAKING PROCESS

In the event of a tie, the competitor with the higher mark on the carbon project will break the tie.

## 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 submission can be denied should the participant not have the required proper safety equipment and/or act in an unsafe manner that can cause harm to themselves or others.

## CONTEST AREA SPECIFIC SAFETY REQUIREMENTS

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## CLOTHING REQUIREMENT

Appropriate work clothing must be worn to compete. All clothing must be neat and clean, and free of rips and tears. Hoodies with tie strings are not allowed. Casual wear such as shorts and open toed shoes/sandals will not be permitted. No loose-fitting clothes or jewelry.

## ADDITIONAL INFORMATION

**Skills Canada Alberta Regional and Provincial Rules and Regulations**  
[Regional and Provincial Rules and Regulations](#)

Post-Secondary Competitor Information is [available here](#).

### Lunch

Lunch will be provided by Skills Canada Alberta.

### Team Alberta Information

Team Alberta will be selected from competition Gold medalists who will then be eligible to participate at the Skills Canada National Competition (SCNC) in a virtual format May 25-30, 2021. 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/>.

### Ethical Conduct

We recognize that participants will be competing individually in their own unique environments. We expect all competitors to compete fairly, respecting and abiding by the established rules in the true spirit of Skills Canada Alberta.

### Letter of Participation

Competitors who participate in the 2021 Provincial Skills Canada Competition are eligible for a Letter of Participation by request by contacting [katherinek@skillsalberta.com](mailto:katherinek@skillsalberta.com).

## COMMITTEE MEMBERS

Ken Heather	Brad Hollman	Kevin Vadori
Dan Lyng	Brent Melnyk	Ken Mcken
Dave Heins	Doug Sontag	Lyle Kragnes
Julia Penner	Jethro Ulrich	Nigel Peters