



cwbassociation
Calgary Chapter

CWB ASSOCIATION
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cwbwelding
foundation
building the future of welding in Canada

**GUIDELINES
for
Student Paper Awards
March 2023**

OBJECTIVE:

The objective is to have at least two SAIT students (or groups) prepare a technical paper and present their findings to a panel of judges. The paper can be on any topic of their choosing related to their field of study: materials, welding, joining, inspection, etc. The paper must be original work completed by the submitting group. This work should include data and findings produced by the group themselves: it is not intended to come entirely from internet sources. Students are encouraged to carry over work from their in-class projects, as long as the work is authentic and completed only by the group members. Groups may comprise of one or two people.

Note: See attached list of example presentation topics/ideas. Applicants do not have to select one of these topics, as they are provided as examples only.

Note: Students must be enrolled in a full-time post-secondary program at the time of paper submission.

PROCESS:

The presentations and papers will be judged by a panel of three to five judges selected from the CWBA Calgary Chapter executive committee. The award recipients will be declared at the end of the Student Paper Night on **March 15, 2023**. The CWBA Calgary Chapter, in combination with the CWB Welding Foundation, will award **\$1,000** for the 1st place paper and **\$500** for the 2nd place paper.

CRITERIA:

1. The total allotted time for each presentation including the Q&A period is 30 minutes
2. Presentations will be conducted through a remote platform
3. Each student or group shall meet the paper submission deadlines listed below
4. Judging of candidates will focus on:
 - Technical content and originality
 - Style of presentation - speech clarity of each member
 - Handling of Q&A period
 - Relevance of conclusions to Alberta and/or Western Canada
 - For groups of two, all members of the group must participate in the presentation

HOW TO SUBMIT A PAPER:

1. **Declare your Paper:** *A title and one or two-sentence overview*

The following information is required:

- Name(s) and email(s) of the student or group members
- Program name and year-of-study

Please email your declaration and contact information to calgary@cwbaassociation.org. The four students or groups selected to advance to the competition will be notified by March 1, 2023.

2. **Submit your Paper:** *The final (complete) paper, that will be used for the competition*

Please email your paper to: calgary@cwbaassociation.org

Paper declarations must be received by **February 27, 2023**.

Final papers must be received by **March 13, 2023**.

SAMPLE TOPICS

1. Company Qualification

Your employer's president asks you to qualify the company to build (pick one)

- Structural steel
- Pressure piping
- Pressure vessels

Research regulatory requirements, how and where to apply for certification, steps in the certification process, quality system requirements, welding procedure requirements, welder qualification requirements, technical and human resources required, audit requirements, the timeline for certification, and total estimated cost to become a certified fabricator of your selected product.

2. Improvement of existing practices

The fabrication team has to present a 1-year plan to improve quality and increase efficiency. The supervisor has tasked you with providing direction from a welding standpoint. (Pick one)

- Small company (99 or fewer employees) currently with rudimentary forming and positioning equipment building light walled farm fuel tanks using GMAW.
- Medium-sized company (100-499 employees) fabrication structural steel with cutting, positioning, and welding equipment that has seen few updates since 2010.
- Large company (more than 500 employees) transforming from a carbon steel pressure equipment fabrication to fabrication of stainless and duplex stainless-steel fabrication.

Include the cost of any new equipment and training required to improve quality and efficiency, expected cost savings due to efficiency and reduced rework, and expected increase in overall product quality.

3. Remote Welder Qualification

You are quarantined at home. A large structural steel project you are responsible for is starting welder performance qualifications. The person trying to fill in for you has little welding experience. Demonstrate using what you have on hand, how to set up the tests, inspection points and techniques, and acceptance criteria.

4. Pipeline Welding Procedure Application

You are the responsible welding engineering technologist for a large pipeline project. The project consists of two 20 km CSA Z662 lines; NPS 30, 17.4mm WT, Gr.448 CATII M5, and NPS 8, 8.2mm WT, Gr.359 CAT II M45. Your company has 4 welding procedures already developed from previous projects that would be applicable for this project:

- 2 procedures are E8010-P1 downhill progression procedures. 1 covering the NPS 30 diameter and wall thickness range and the other covering the NPS 8 diameter and wall thickness range.
- 1 procedure is E7018 uphill progression procedure, which covers the NPS 8 diameter and wall thickness range.
- 1 procedure is E8018-C3 uphill progression procedure, which covers the NPS 30 diameter and wall thickness range.

Please select the procedures to be used for the project, specify any restrictions or additional requirements applicable to the procedures, or recommend the development of new procedures. Your decision will be based on the overall quality and integrity of the weld, cost, and efficiency of each welding technique, and the cost-benefit of developing new procedures for the project if required. Each procedure has its pros and cons, therefore you must present why you have selected one procedure or the other.