

We are pleased to present the CWB Fall 2022 Welding Engineers Newsletter. In this edition, you will find the latest news about CWB procedures and welding consumables certification department and information on the upcoming forum.

In this edition you will also find:

- Welding of Open Web Steel Joists
- Pulsed Welding Procedure Data Sheets
- Use of Proprietary Shielding Gases

CWB Procedures and Electrodes Department Year in Review (FY 2022):

The first newsletter published in Fall 2020 explained how the CWB procedure department operates. In this edition, we will summarize the performance of the department during the last fiscal year, from April 2021 to March 2022. Over this twelve-month period the procedure department received a total of 12,300 submissions (number of emails received by the department relating to welding procedures), the average number of working days between the reception and our review/response to the submissions was under 1.4 days. It is worth mentioning that to process these submissions

At the end of the fiscal year 2022, there were a total of 2,461 welding consumables certified by us from 120 welding consumable POMs in 26 countries. Below is a graphical representation showing where these certified welding consumables are coming from:

- Effective throat thickness (ETT)
- Weld face width (W)
- Weld length (L)
- Location of extracted macro etch tests are described in the sketches below

Continuous Web

Non-Continuous Web

When conducting procedure qualification testing for open web steel joists, the test assemblies should simulate the actual production joints, accessibility to the welds in the required position, and use of actual work/tra

As discussed in the past, for GMAW pulsed prequalification, the minimum wire feed speed, as required by clause 10.5.3.8 of CSA Standard W59:2018 for flat, horizontal, and overhead, shall be as follows (for all shielding gases):

Electrode Size	Minimum Wire Feed Speed
0.9 mm	400 ipm (10 m/min)
1.0 mm	350 ipm (8.9 m/min)
1.2 mm	250 ipm (6.3 m/min)
1.4 mm	225 ipm (5.7 m/min)
1.6 mm	190 ipm (4.8 m/min)

### Use of Proprietary Shielding Gases

A certified fabricator may submit WPDSs showing either the trade name, e.g., BLUESHIELD 7, Ferrolite C8, etc., or the corresponding shielding gas composition, e.g., Ar + 15%CO<sub>2</sub>. When a welding procedure is submitted for review with a proprietary shielding gas, it can be accepted based on prequalification or a procedure qualification test (new test, previous test, or accumulated tests), same as any other WPDSs. But the proprietary shielding gas must meet the following.

For the carbon and low-alloy steel FCAW and MCAW electrodes are certified using the minimum and the maximum oxygen equivalent (OE) of the shielding gases range applicable to the product, if the proprietary shielding gas fall within that range, no additional certification test is required. If the proprietary gas falls outside that range, then the electrode must be certified with that specific shielding gas as a pair. This can be verified by checking the CWB website at <https://www.cwbgroup.org/certification-and-qualification/certified-directory-search/consumables>.

Carbon steel GMAW welding consumables are certified with 100% CO<sub>2</sub> and as per Clause 7.3 of CSA Standard W48:2018 these welding consumables are also considered certified for the use of other shielding gases within the limitations of the oxygen equivalent (OE). If the proprietary gas does not meet the acceptable range of CSA W48, the electrode must be certified using this proprietary gas as a pair.

## Welding Engineer Forum

In the summer of 2021, we had over 60 welding engineers attending our welding engineer forum. During the forum, some of the topics discussed were ranging from unlisted base metal, PQT limitations, WeldEye, PQT from other organizations, sharing welding procedure between fabricators, and Q&A session. For further information, please visit the welding engineer webpage at: <https://www.cwbgroup.org/certification-and-qualification/welding-engineers>

We are examining the current format of our welding engineer forum. We are considering forming several small groups to promote discussions; we will keep you informed.

Thank you,

CWB Procedures & Electrodes Certification Team