

# CSA Standards W47.1 & W59 and AWS D1.1

## *The Similarities and Difference*

This document summarizes the similarities and key difference in the requirements between welding standards published by the Canadian Standards Association (CSA) and the American Welding Society (AWS). Review of the standards themselves is recommended for detail on specific topics.

### ***The Similarities:***

**In Canada, CSA Standards W47.1 and W59** define the requirements for the certification of companies involved in welding steel, including qualification requirements for welders, welding procedures and welding supervisory personnel. Weld quality, electrode/base metal matching, pre-qualified joints and weld design are also specified.

**In the U.S.A., AWS D1.1 “Structural Welding Code – Steel”** defines the requirements for the qualification of welders and welding procedures, weld quality, electrode/base metal matching, pre-qualified joints and weld design are also specified.

Requirements in several areas including welder qualification, welding procedures, weld quality, electrode/base metal matching, pre-qualified joints and weld design are very similar, but not identical in the two systems.

### ***The Difference:***

Although technically similar, **the key difference between the two systems is the requirement for 3rd party verification by the Canadian Welding Bureau (CWB).**

### ***What is the benefit of CWB Certification?***

Unique to the Canadian system is the 3rd party verification requirement that is carried out by the CWB. A company certified by the CWB has all welder qualifications witnessed by and issued by the CWB. All welding procedures are reviewed and approved by the CWB, and welding supervisory personnel are examined by the CWB.

The CWB process and certification provides an added level of confidence and assurance that the documentation, weld quality and knowledge level of fabricators is independently verified against the requirements of the standards, and thereby minimizes liability risk.

It should be noted that numerous jurisdictions in the US have accepted certification by the CWB as an acceptable alternative to “special inspections”. A current list of these jurisdictions is available at <http://www.weldquality.org/industry/acceptance-usa-jurisdictions> or by calling the CWB at 1-800-844-6790.



## ***What is included in the Canadian requirements of CSA Standard W47.1 that are not required in AWS D1.1?***

### **Semi-annual audits - Qualified Welding Engineers:**

- Companies must employ/retain a CWB qualified Welding Engineer (Division 1 and 2 only). CSA Standard W47.1 defines both experience and education requirements for qualification of welding engineers.

### **Qualified Welding Supervisors:**

- All certified companies are required to employ at least one CWB qualified Welding Supervisor. CSA Standard W47.1 defines both experience and education requirements for qualification of these individuals.

### **Qualified Tackers, Welders and/or Welding Operators:**

- CSA Standard W47.1 requires separate qualification of welders for fillet weld and groove welds.
- CSA Standard W47.1 requires that welders be retested every two years to ensure they maintain the required welding skill level, visual ability and manual dexterity.
- CSA Standard W47.1 requires that all welder qualification tests be witnessed by a CWB representative. All documentation related to welder qualifications is issued by the CWB.

### **Qualified Welding Procedures:**

- All welding procedures used by the company must be reviewed and accepted by the CWB.

For a listing of all organizations that currently meet the requirements of CSA Standard W47.1 please see <http://www.weldquality.org/enforcement/certified-company-search> .

