

**Certification of Companies for
Fusion Welding of Steel**

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***Certification of Companies for Fusion
Welding of Steel***



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Preface

This is the sixth edition of CSA Standard W47.1, *Certification of Companies for Fusion Welding of Steel*. It supersedes the previous editions published in 1992, 1983, 1973, 1947 (as W47), and 1938 (as a preliminary Standard). Technological advancements have made it necessary to provide an updated version.

CSA Standard W47.1 deals with the certification of companies for fusion welding of steel. It is not a product standard and cannot be used to evaluate or approve products. Furthermore, it is not intended to supersede Codes and Standards, such as the ASME *Boiler and Pressure Vessel Code*, CSA Standard B51, *Boiler, Pressure Vessel, and Pressure Piping Code*, Rules of the American Bureau of Shipping, Standards of the American Petroleum Institute, etc., that govern specific products.

CSA Standard W47.1 stipulates minimum requirements that a company must meet and adhere to in order to obtain and maintain certification. Certification is granted by the Canadian Welding Bureau, the administrative body for this Standard, to companies that comply with the requirements of the Standard. Certification of a company indicates that, consistent with the requirements of the Division in which the company is certified, it has the organization, personnel, welding procedures, and equipment required to produce satisfactory welds and weldments.

Production of satisfactory welds and weldments is the responsibility of the certified company. It is the responsibility of the purchaser to ensure, through adequate inspection, that the required quality is attained. Although the Bureau makes periodic inspections of certified companies to ensure that they continue to comply with the requirements of this Standard, these inspections do not eliminate the need for a certified company's quality control methods or a purchaser's comprehensive inspection program.

This Standard was prepared by the Technical Committee on Certification of Companies for Fusion Welding of Steel, under the jurisdiction of the Strategic Steering Committee on Welding and Structural Metals, and has been formally approved by the Technical Committee.

November 2003

Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- (3) This publication was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.
- (4) CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.
- (5) All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.
Requests for interpretation should
 - (a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
 - (b) provide an explanation of circumstances surrounding the actual field condition; and
 - (c) be phrased where possible to permit a specific "yes" or "no" answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are published in CSA's periodical Info Update, which is available on the CSA Web site at www.csa.ca.

W47.1-03

Certification of Companies for Fusion Welding of Steel

1. Scope

1.1

This Standard provides the requirements for the certification of companies engaged in the fusion welding of steel and the qualification of their personnel and welding procedures.

Notes:

- (1) *Certification may be mandatory or voluntary.*
- (2) *This Standard is not intended for applications governed by codes such as the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code and codes of the American Petroleum Institute (API).*

1.2

The requirements of this Standard are based on the principle that a certified company has full responsibility for the quality of the welded product it produces, and this responsibility cannot be transferred to its employed or retained personnel, or to the administrator of this Standard.

1.3

This Standard governs the certification of companies. Certification pertains to the capability of the company with respect to welding. Certification should not be construed as approving any products or services of the certified company.

1.4

This Standard stipulates requirements for

- (a) welding engineers;
- (b) welding supervisors;
- (c) tack welders, welders, and welding operators; and
- (d) documentation

as defined or specified in this Standard.

1.5

The qualification requirements for tack welders, welders, and welding operators specified in this Standard are intended to demonstrate an individual's basic welding skills and to provide a means of verifying that individual's continuing ability in the fusion welding of steel.

1.6

Provisions for recognition of personnel qualified under other jurisdictions are included in this Standard.

1.7

For welding of stainless steel, the provisions of AWS Standard D1.6 may be used for the qualification of welding procedures and personnel. However, when the provisions of AWS Standard D1.6 and this Standard conflict, this Standard takes precedence.

1.8

This Standard does not address the safety issues associated with welding and welding practices.

Note: CSA Standard W117.2 addresses safety in welding and should be followed, in addition to any applicable workplace health and safety legislation in effect. It is the responsibility of the user of this Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1.9

The values given in SI (metric) units are the standard. The values given in parentheses are for information only.

2. Reference Publications

2.1

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto:

CSA (Canadian Standards Association)

CAN/CSA-G30.18 -M92 (R1998)

Billet-Steel Bars for Concrete Reinforcement

W48-01

Filler Metals and Allied Materials for Metal Arc Welding

W59-03

Welded Steel Construction (Metal Arc Welding)

W117.2-01

Safety in Welding, Cutting, and Allied Processes

W178.1-02

Certification of Welding Inspection Organizations

ASTM (American Society for Testing and Materials)

A 370-02

Standard Test Methods and Definitions for Mechanical Testing of Steel Products

E 10-01

Standard Test Method for Brinell Hardness of Metallic Materials

E 23-02

Standard Test Methods for Notched Bar Impact Testing of Metallic Materials

2.2

This Standard refers to the following publications, and where such reference is made, it shall be considered to refer to the latest edition and all amendments published to that edition up to the time when the referencing Standard is approved.

AWS (American Welding Society, Inc.)

A5 Series

Filler Metal Specifications

D1.1

Structural Welding Code — Steel