

Guide to Assist Candidates

Applying for Certification as
Welding Inspectors

to

CSA Standard W178.2-08
“Certification of Welding Inspectors”



June 2011



INTRODUCTION

CSA Standard W178.2, "Certification of Welding Inspectors" was first published by the Canadian Standards Association in 1982. This Standard assists inspection companies and industry in assessing the skills of employees or prospective employees, specifically for the visual inspection of welding and welded components.

There are three levels of welding inspector with Level 3 being the most senior.

EXPERIENCE AND EDUCATION REQUIREMENTS FOR LEVEL 1, 2 & 3 WELDING INSPECTORS

To be eligible for certification as a Level 1 welding inspector, candidates must meet the requirements in either (a) or (b) below:

- (a) Obtained at least one year of experience in one or more of the following areas:
 - layout and fitting;
 - manual or semi-automatic welding;
 - welding inspection;
 - welding supervision;
 - weld testing;
 - weld designing or detailing;
 - welding instruction;
 - fabrication planning

- (b) Successfully completed recognized courses in the fundamentals, principles and practices of welding and quality control and inspection of welding.

For certification as a Level 2 welding inspector, candidates must have at least 2 years of experience as a certified Level 1 welding inspector performing welding inspection under qualified supervision. The standard defines "Qualified Supervision" as: "The supervision of candidates by Level 2 or Level 3 personnel certified to this Standard, or by non-certified personnel who, in the opinion of the CWB, possess the knowledge, skills training, and experience required to perform such supervision."

For certification as a Level 3 welding inspector, candidates must have at least 4 years of experience as a certified Level 2 welding inspector.

THE CERTIFICATION PROCESS

1. Complete the application and proof of vision forms (CWB Forms 450 and 455). If you are not currently certified as a welding inspector, you must apply for certification in Level 1. To be eligible, candidates must have welding or inspection related experience and/or have completed recognized courses in the welding field as noted in CSA Standard W178.2-08. Persons who were previously certified but whose certification has lapsed are eligible to apply for the level of certification they previously held providing they meet the eligibility requirements of CSA Standard W178.2-08 and their past certification status can be verified by the CWB.

The personal information presented on the application form is strictly confidential. No information about an applicant will be given to any other person or organization without the consent of the applicant.

The application form must be fully completed. You may include an additional resumé but Parts 13 to 15 of the application form must be completed as applicable. The following provides guidance to several specific parts of the application form:

Part 2 - Level of Certification Desired: If you are eligible for a specific level, your choice will be recognized. If you are not currently certified, you must start at Level 1 unless you are eligible to apply for certification in a higher level as permitted by Clause 9.1.1(d) of CSA Standard W178.2-08. This clause permits practicing welding inspectors, in exceptional cases, to qualify in Level 2 or Level 3. In such cases, candidates must demonstrate to the CWB that their combination of education, training, and experience is equivalent to either Level 2 or Level 3. Additional documentation and verification requirements apply to such candidates including an additional fee. Candidates applying under this clause are required to go through an additional review process and are assessed an additional non-refundable fee of \$160.00 plus applicable taxes. Contact the CWB for details on applying under this clause.

Part 3 - Years of Experience: Show the number of years of work experience. Only Level 1 applicants may substitute work experience with education.

Part 4 - Previous Inspection Certification: This entry could be meaningful if you are eligible to transfer into the CSA Standard W178.2-08 program based on a qualification granted by the American Welding Society, (AWS), The Welding Institute (TWI) or the American Petroleum Institute (API). Refer to pages 9 and 10 of this Guide for details.

Part 5 - Educational Background: This is significant if you are applying for Level 1 and do not have practical experience.

Part 10 - References: As required by Clause 5.5.2 of CSA W178.2-08, Level 1 Welding Inspectors must perform inspection under qualified supervision. In order to apply for certification to Level 2, you must provide the name of at least 1 individual who meets the definition of “Qualified Supervision” and who supervised you or can attest to your work as a welding inspector in the last 2 year period.

Part 11 – Product Category: Ensure that you have indicated the Product Category to which your certification will apply. The open book examination that you will be required to write will be based on the Product Category chosen. Candidates are to select one Product Category for their initial certification in the Level chosen. Other Product Categories may be added after certification has been obtained. A fee of \$65 plus applicable taxes is charged for each additional Product Category. Examination requirements are specified in CSA Standard W178.2-08.

Part 12 - Code of Ethics: Sign and date the declaration signifying your acknowledgement of the CSA Standard W178.2-08 Code of Ethics.

Parts 13 to 15 - Qualifying Work Experience: Provide details of your work experience. A separate resumé may be included but cannot be substituted for completion of these parts of the application form.

2. Send the application and proof of vision forms and fee (include applicable taxes) to the nearest CWB office. The address of each CWB office is shown on the last page of this Guide. Include applicable supporting documentation for welding related work experience and training courses. Certification fees are shown on Page 6 of this Guide. Incomplete application forms will be returned, which will delay the processing of your application.
3. Upon receipt of your application form by the CWB, it will be reviewed and you will be advised as to whether or not you are eligible to write the examinations for the level that you selected (See CSA Standard W178.2-08 for eligibility requirements). Examinations are held in the CWB offices across the country, however if a group is too large to handle locally, other arrangements may be made. If the examination date is unsuitable, advise the CWB as soon as possible so that other arrangements can be made.

4. If the CWB determines that you are **not** eligible to write, your fee will be returned less a \$50.00 service charge. Should you reapply at a later date when the experience and/or educational requirements have been fulfilled, the full fee is payable. Eligibility requirements are specified in CSA Standard W178.2-08.
5. If you successfully complete the examinations, you will receive a Welding Inspector Certificate and a laminated wallet certification card.
6. Upon request, the CWB will provide Level 2 and Level 3 certified welding inspectors with a personalized stamp, which may be used on reports and other inspection related documents. The stamp shows the welding inspector's name, registration number and level and states that he or she is a certified welding inspector. Contact CWB for further information, including cost.

For additional information, please visit the CWB's website at www.cwbgroup.org.

EXAMINATIONS

The examinations required for certification in each level are shown in the following tables. The passing grade is 70% for each examination. The number of questions may vary from time to time. Examination results are mailed to candidates normally within 2 weeks of the examination day.

Level	Exam Type	Exam subject	Typical Number of Questions	Time Limit (hrs)
1	Closed book	Welding inspection	50 multiple choice and 10 essay questions	1.5
	Open book	Standard/Code	45 multiple choice questions	2
		CSA Standard W178.2-08*	15 multiple choice questions	.5
	Practical	Samples for Visual Detection and Identification	10	.5
2	Closed book	Welding fundamentals and welding inspection	120 multiple choice and 10 essay questions	3
		Descriptive Report Writing	5 essay questions related to welding inspection	1
	Open book	Standard/Code	45 multiple choice questions	2
		CSA Standard W178.2-08*	15 multiple choice questions	.5
	Practical	Samples for Visual Detection and Identification	10	.5
3	Closed book	Welding fundamentals, welding inspection and welding metallurgy	120 multiple choice and 10 essay questions	3
		Descriptive Report Writing	5 essay questions related to welding inspection	1
	Open book	Standard/Code	45 multiple choice questions	2
		CSA Standard W178.2-08*	15 multiple choice questions	.5
	Practical	Samples for Visual Detection and Identification	10	.5

* All new candidates for certification to Level 1 must write the examination on CSA Standard W178.2-08. All candidates upgrading to a higher level must also write the examination on CSA Standard W178.2-08 unless it was written while qualifying at a lower level. The examination on CSA Standard W178.2 is only required to be written once.

Candidates who have successfully completed CWB modules, as shown below, are entitled to write a shorter version of the closed book examination. This exemption does not apply to candidates who are eligible to challenge the higher level exams under clause 9.1.1d of CSA Standard W178.2-08. All other examinations remain as noted above. Courses from other organizations, which are comparable to the CWB modular program will qualify candidates for writing the shorter exam versions.

Level	Modules Completed	Typical Number of Closed Book Examination Questions	Time Limit (hrs)
Level 1	1-4, 6, 8, 10, 11, 13, 15 & 16	Exempt - No Closed Book examination required	N/A
Level 2	1 – 13, 15 – 19, 22	50 multiple choice questions and 10 essay questions	2.0
Level 3	1- 23	50 multiple choice questions and 10 essay questions	2.0

All candidates applying for certification must successfully complete the required examinations, including all rewrite examinations, within one year from their application date for certification in the desired level; otherwise their application will be terminated.

Candidates who do not complete the examinations within this time period may reapply for certification. All examinations applicable to the Level sought must be successfully completed in order to obtain certification. Examinations that were successfully completed from a prior application cannot be recognized.

The standards on which open book examinations may be written are as follows:

Product Category	<u>Standard/Code</u>
Buildings, Bridges, Industrial Structures, Machinery, Cranes, Rail and Road Vehicles (Steel)	CSA W47.1 Certification of Companies for Fusion Welding of Steel, <i>and</i> CSA W59 Welded Steel Construction (Metal Arc Welding)
Buildings, Bridges, Industrial Structures, Machinery, Cranes, Rail and Road Vehicles (Aluminum)	CSA W47.2 Certification of Companies for Fusion Welding of Aluminum, <i>and</i> CSA W59.2 Welded Aluminum Construction (Welding)
Ships and Floating Marine Structures	ABS Rule Requirements for Materials & Welding And Nondestructive Inspection of Hull Welds

Mobile Drilling Units and Steel Fixed Offshore Structures	CSA S473 Steel Structures (As this examination includes the visual examination of specialized specimens, it is currently only available at the CWB office in Dartmouth, NS)
Industrial Pipe	ASME B31.3 Process Piping
Pipelines	CSA Z662 Oil and Gas Pipeline Systems
Pressure Vessels, Boilers and Heat Exchangers	ASME Boiler and Pressure Vessel Code, Sections VIII-Div.1 & IX
Storage Tanks	API 650

You must bring your own copy of the standard/code on which you intend to write the open book examination. Candidates frequently use earlier or later editions of the applicable standard/code for the open book examination, which is entirely their option.

Initial writing of the examinations at any level requires that they be completed during a "single sitting". The term "single sitting" means that you write all of the examinations in one day. For the longer sessions (Level 2 and Level 3), candidates may take a lunch break.

You must bring the following to the exam session:

- Identification;
- Standard or code for the open book examinations;
- Non-programmable calculator (the examination may involve a few basic calculations);
- Pens, pencils, eraser, sharpener, ruler as required.

If you fail an examination, there is no waiting period to rewrite. Before rewriting an examination, it is recommended that you take some additional time to re-study the subject material. If you fail any exam on the second attempt, you will be required to rewrite all exams for the level of certification sought. All examinations that were successfully completed previously will not be recognized

Twenty-four hour advance notification must be provided to the CWB if you are going to miss an examination date in which you are scheduled to write. Failure to notify the CWB will result in a \$50.00 service charge, which will be payable before you can write the examination at a later date.

Examination Reviews

The following conditions apply to any candidate who requests a review of their exam results:

- The review consists of a general overview of errors made on the exam, and provides information regarding areas of knowledge weakness. An exam review is **not** a review of each individual exam question, and is **not** a remarking of the exam.
- Reviews will not be completed by any particular timeline and could take as long as 30 days.
- Exam reviews must be requested within no more than 3 months from the exam writing date. Reviews will not be conducted after this time period.
- Exam reviews are only available during office hours (Monday-Friday, 8:00-4:30).
- A refund of the exam review fee, less a \$50 administration charge, will be issued upon request provided that the review has not commenced.
- Candidates are responsible for arranging with the CWB a mutually agreeable date and time to discuss the review findings.

RENEWAL OF CERTIFICATION

The certification period for all welding inspectors is three years. To renew their certification, certified welding inspectors are required to apply on or before the expiry date of their certification. At that time, they must provide evidence of satisfactory vision (CWB Form 455) and their continuing involvement in welding examination or testing (CWB Form 457).

At six year intervals, certified welding inspectors must be re-examined on the codes and standards associated with the product categories applicable to their certification. Refer to Clause 11 of CSA Standard W178.2-08 for the renewal and mandatory code rewrite requirements. The standard/code re-examination may be witnessed by a proctor. Contact CWB for details.

Welding inspectors who fail to renew by the expiry date will lose their certification. CWB will mail notices regarding renewals and six-year re-examinations. Certified inspectors are responsible for informing the CWB of any change in their contact information.

STUDY MATERIALS

Appendix A of CSA Standard W178.2-08 contains a sample course guideline for candidates preparing for certification as welding inspectors.

A few examples of study material for the closed book examination on the Fundamentals of Welding Technology and Inspection are provided below. Study material for the open book examination is the applicable standard or code.

- a) The CWB, a Division of the CWB Group, has numerous study modules covering most of the topics found on the examination (welding process, welding symbols, electrodes, inspection methods, etc.).
- b) The American Welding Society produces detailed handbooks on welding technology including Jefferson's Welding Encyclopedia.
- c) American Society for Metals, Metals Handbook.
- d) Modern Welding Technology, by Howard B. Cary.
- e) Welding Principles and Applications, by Larry Jeffus.
- f) Metallurgy for the Non-Metallurgist, by Harry Chander.
- g) INTEG (International NDT Education & Training Group) a Division of the CWB Group provides courses and texts for the various nondestructive test methods.

FEES (Add applicable tax)

	LEVEL 1	LEVEL 2	LEVEL 3
Certification [includes initial exam and 3-year certification]	\$380.00	\$380.00	\$380.00
Rewrite of 1 exam of any type	\$110.00	\$110.00	\$110.00
Rewrite of 2 or more exams	\$220.00	\$220.00	\$220.00
Upgrade examinations	N/A	\$220.00	\$220.00
Open Book Exam Fee [for additional standard/code endorsement]	\$65.00	\$65.00	\$65.00
Open Book Examination [for mandatory six-year rewrite]	\$65.00	\$65.00	\$65.00

	LEVEL 1	LEVEL 2	LEVEL 3
Review of Examination Results (optional) [verbal report of completed examinations]	\$75.00	\$75.00	\$75.00
Renewal Fee [every 3 years]	\$165.00	\$165.00	\$165.00
Inspector's Stamp Fee (optional)	N/A	\$60.00	\$60.00

Payment by Visa or Mastercard is accepted by CWB. Download Form 1049 from www.cwbgroup.org to use this option.

Fees, less a service charge, are refundable only within 30 days from receipt of payment. The fees noted above apply to all candidates and may change from year to year. Please add applicable taxes to all fees shown above. There is a \$30.00 bank service charge for NSF cheques.

RECOGNITION OF QUALIFICATIONS GRANTED BY OTHER ORGANIZATIONS

The CWB recognizes the welding inspector certifications granted by the American Welding Society (AWS) and The Welding Institute (TWI) and the American Petroleum Institute (API) Pressure Vessel and Piping Inspector certifications, subject to the following limitations.

Recognition of AWS Welding Inspector Certifications to AWS QC-1:2007

Individuals who hold a valid AWS certification to AWS QC-1:2007 as a:

- Certified Associate Welding Inspector (CAWI) may apply for a CSA W178.2-08 Level 1 welding inspector certification.
- Certified Welding Inspector (CWI) may apply for a CSA W178.2-08 Level 2 certification. However, to obtain the Level 2 certification the CWI must have 2 years of visual welding inspection experience at this level.
- Senior Certified Welding Inspector (SCWI) may apply for a CSA W178.2-08 Level 2 welding inspector certification.

The following conditions apply for the above candidates:

1. Candidates must complete and submit CWB Forms 450 and 455 and the fee.
2. Candidates must provide a copy of their Certificate, wallet card, and a copy of the two page test score report issued by AWS. The AWS certification must still be valid in order to obtain the examination exemption. The AWS certification must be as a Certified Associate Welding Inspector (CAWI), Certified Welding Inspector (CWI) or Senior Certified Welding Inspector (SCWI) to AWS QC-1:2007.
3. Candidates, who meet the above criteria, are exempt from all examinations except for the examination on CSA Standard W178.2-08. The candidate's certification to CSA W178.2-08 will be for 3 years commencing from the date certification is granted. Renewal will be in accordance with the requirements of CSA W178.2-08.
4. Inspectors who have allowed their AWS certification to lapse may apply for certification in the appropriate level, but must write all of the applicable examinations.
5. Candidates who possess the AWS CWI certification and who have 7 years of visual welding inspection experience at this level may apply to write the full CSA W178.2-08 Level 3 welding inspector examinations.
6. Candidates who possess the AWS CAWI certification and who have 2 years of visual welding inspection experience at this level may apply to write the full CSA W178.2-08 Level 2 welding inspector examinations.

Recognition of TWI Welding Inspector Certifications to CSWIP-WI-6-92

Individuals who hold a valid TWI certification to CSWIP-WI-6-92 as a:

- Visual Welding Inspector may apply for a CSA W178.2-08 Level 1 welding inspector certification
- Welding Inspector or Senior Welding Inspector may apply for a CSA W178.2-08 Level 2 welding inspector certification.
- Senior Welding Inspector may apply for a CSA W178.2-08 Level 3 welding inspector certification.

The following conditions apply for the above candidates:

1. Candidates must complete and submit CWB Forms 450 and 455 and the fee.
2. Candidates must provide a copy of their Certificate of Proficiency issued by TWI. The TWI certification must still be valid in order to obtain the examination exemption.
3. The TWI qualification must be as a Visual Welding Inspector, Welding Inspector or Senior Welding Inspector to CSWIP-WI-6-92. Candidates with the Visual Welding Inspector designation are **not** eligible to apply for the Level 2 qualification.
4. Candidates who meet the above criteria are exempt from all examinations except as follows:
 - Candidates who possess the TWI Visual Welding Inspector certification must write the Level 1 examination on Welding Inspection.
 - All candidates must write a code exam of their choosing as shown in the table on page 4.
 - All candidates must write the examination on CSA Standard W178.2-08.
5. Inspectors who have allowed their TWI certification to lapse may apply for certification in Level 1, 2 or 3, as applicable, but must write all examinations.
6. The candidate's certification to CSA W178.2-08 will be for 3 years commencing from completion of the applicable examinations. Renewal will be in accordance with the requirements of CSA W178.2-08.
7. Candidates who possess the TWI Welding Inspector certification and who have 4 years of visual welding inspection experience at this level may apply to write the full CSA W178.2-08 Level 3 welding inspector examinations.
8. Candidates who possess the TWI Visual Welding Inspector certification and who have 2 years of visual welding inspection experience at this level may apply to write the full CSA W178.2-08 Level 2 welding inspector examinations.

Recognition of API 510 Pressure Vessel and API 570 Piping Inspector Certifications

Candidates with either the API 510 or API 570 certification may apply for a CSA W178.2-08 certification subject to the following conditions:

1. Candidates must complete and submit CWB Forms 450 and 455 and the fee.
2. Candidates must provide proof of API certification. The API certification must still be valid in order to obtain the examination exemption.
3. Level 1: Candidates may obtain a Level 1 certification upon demonstrating they meet the W178.2-08 vision requirement and must complete the practical exam, the full closed book exam and the examination on CSA Standard W178.2-08. See items 7 & 8 for code exam requirements.
4. Level 2: Candidates may obtain a Level 2 certification upon demonstrating they meet the W178.2-08 vision requirement and have 3 years of experience as an API 510 or API 570 inspector. Candidates must also complete the practical exam, the full closed book exam and the examination on CSA Standard W178.2-08. See items 7 & 8 for code exam requirements.
5. Level 3: Candidates may obtain a Level 3 certification upon demonstrating they meet the W178.2-08 vision requirement and have 7 years of experience as an API 510 or API 570 inspector. Candidates must also complete the practical examination, the full closed book exam and the examination on CSA Standard W178.2-08. See items 7 & 8 for code exam requirements.

6. Inspectors who have allowed their API certification to lapse may apply for certification in Level 1, 2 or 3, as applicable, but must write all examinations.
7. Candidates applying for certification and who have held their API 510 or 570 certification for six (6) or more years are also required to write the CWB's examination on ASME Sections VIII & IX or ASME B31.3, as applicable.
8. Candidates applying for certification and who have held their API 510 or 570 certification for less than six (6) years are exempt from writing the CWB's examinations on ASME Sections VIII & IX or ASME B31.3, as applicable. However, they must complete all of the other qualifying exams for the level sought prior to the six year anniversary of their API 510 or 570 certification, otherwise they are also required to write the CWB's examination on ASME Sections VIII & IX or ASME B31.3, as applicable. The candidate's 6 year code re-examination date will be based on either the date of completion of either the CWB or API examination.
9. The candidate's certification to CSA W178.2-08 will be for 3 years commencing from completion of the applicable examinations. Renewal will be in accordance with the requirements of CSA W178.2-08.

The CWB, federally incorporated, "not-for-profit" organization is accredited by the Standards Council of Canada as a Certification Body for the administration of CSA Standards W47.1, W47.2, W48, W178.1 and W186.

Le CWB, un organisme fédéralement incorporé sans but lucratif est accrédité par le Conseil canadien des normes comme un organisme de certification pour l'administration des normes CSA W47.1, W47.2, W48, W178.1 et W186.



HEAD OFFICE / SIEGE SOCIAL
8260 Parkhill Drive, Milton, Ontario L9T 5V7
Telephone: 1-800-844-6790
Fax: (905) 542-1318
WEB: www.cwbgroup.org

OFFICES ACROSS CANADA / BUREAUX À TRAVERS LE CANADA

Western Operations: Suite 206, 2528 Ellwood Drive SW, Edmonton, Alberta T6X 0A9

Ontario Operations: 8260 Parkhill Drive, Milton, Ontario L9T 5V7

Québec Operations: 4321 Autoroute des Laurentides, Laval, Québec H7L 5W5

Atlantic Operations: 73 Tacoma Drive, Suite 304, Dartmouth, Nova Scotia B2W 3Y6