



American Welding Society

CWI Part B Practical Examination Information

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Examination Requirements

According to B5.1:2013-AMD 1, Clause 7, candidates seeking the CWI certification must take three examination parts to earn the certification.

Part B is a hands-on and written exam. The intent of the Part B examination is to assess the candidate's ability to evaluate a physical characteristic and make the correct decision based on the given acceptance criteria or code requirements.

Examination Delivery

The examination will be paper-based test (PBT) delivered at AWS authorized test centers.

Test Specifications

Test Specifications are a breakdown of examination content areas along with proportion of the examination devoted to each content area. As specified in the B5.1:2013-AMD 1, Clause 7.1, the CWI Part B main content categories are composed the following domains and weights (minimum percent of questions on the examination).

| Domain | Minimum* Percent of Questions on Exam |
|---|---------------------------------------|
| Welding Inspection and Flaws | 34 |
| Procedure and Welder Qualifications | 28 |
| Mechanical Test and Properties | 8 |
| NDE | 8 |
| Utilization of Specification and Drawings | 8 |

* The percent of questions for each of the content areas of the exam is the minimum required percentage.

Informative References for Self-Education

Refer to the B5.1:2013-AMD 1 *Annex A Informative Reference Documents*.

References for Taking the Examination

The reference book for the CWI Part B Practical Examination is “*Part B Examination Book of Specifications*.”

There are several versions of the reference book. Please choose the correct version to use depending on the exam versions.

- For *English* CWI exams held within the US or Canada, use this reference book.
[English](#)
- For *English* CWI exams held outside the US or Canada in Metric measurement, use this reference book.
[English Metric Version](#)

For language-assisted CWI exams held outside the US or Canada Metric measurement, use the language-specific reference books. It is available as a free PDF download from the AWS website in seven different languages: English, Spanish, Portuguese, Russian, Japanese, Chinese, Korean and Polish.

[English](#) | [Español](#) | [Português](#) | [русский](#) | [中文](#) | [日本語](#) | [한국어](#) | [Polski](#).

Physical specimens and tools for measurement to be used on the exam are also provided at testing.

Examination Materials

Candidates must utilize one or more of the following to answer exam questions:

- *Part B Examination Book of Specifications*, a sample code developed for use on the exam.
- *Exam Exhibits Booklet*, a collection of sample welding documents (such as PQR's, WPS's, and WQTR's) and photographs.
- Four-piece Plastic Weld Replica Set, including sample t-joint, groove, bend, and pipe specimens.
- Inspection Tool Kit, including fillet weld gauges, v-wac gauge, dial caliper, ruler, C4.1-gauge, protractor, hi-lo gauge, magnifying glass, mirror, and flashlight.

All exam materials will be supplied to each candidate on the test date. Although the *Exam Exhibit Booklet* and Plastic Weld Replica Set are confidential, the [Sample Tool Kit](#) can be purchased from AWS, and the *Book of Specification* is available as a free [PDF download](#) from the AWS website in seven different languages.

Note: exam delivered in the US and Canada use Customary Unit (Inches, Degrees-Fahrenheit). Exam delivered Internationally use Metric Unit (Kilogram, Millimeters- Celsius)

Exam Type

CWI Part B is an open-book examination. The reference for the CWI Part B Practical Examination "*Part B Examination Book of Specifications*" is available on the AWS website free of charge and provided to candidates at testing.

Total Number of Questions on the Examination

There are 46 questions on the examination.

Language-Assisted Examination Forms

The Part B examination language-assisted are available in six languages: Chinese, Korean, Japanese, Spanish, Portuguese, and Spanish. Both English and target languages will appear on the examination questions.

Allotted Time to Complete the Examination

Candidates have a maximum of 120 minutes to complete the examination.

The Passing Score

Successful candidates must correctly answer 72% of the questions to pass the examination.

Examination Question Types

The examination will consist primarily of multiple-choice items; some single correct answer items and alternative item types may appear as well.

CWI Part B Practical Examination Sample Questions

The following two questions are typical multiple-choice items that appear on CWI Part B Practical examination. These are sample questions for demonstration only. Answers and explanations can be found below.

Sample Question One

Examine Exhibit Picture EEB-16. What NDE method is being performed?

- A. Visible wet magnetic particle testing
- B. Electromagnetic flux leakage testing
- C. Dry powder magnetic particle testing yoke method
- D. Dry powder magnetic particle testing prod method

Commentary

Although questions about non-destructive examination methods may appear on the CWI Part A Practical exam, it is in the CWI Part B Practical exam that test-takers will be asked to carefully examine a full-color photograph of an NDE method and answer a question. The question references an “Exhibit Picture EEB-16,” which means that in the Exam Exhibit Booklet the test-taker will need to look up the correct picture and recognize what method and possibly what step in the method is portrayed. In this case, without the picture, no answer can be provided here, but the question should give a good indication of the level of understanding about NDE methods that a CWI is expected to have.

Sample Question Two

Examine the bend specimens. Which of the following bend specimens listed below is not ground as recommended?

- A. B5
- B. B6
- C. B7
- D. B8

Commentary

This question asks the test-taker to examine a physical specimen, which means that this question would appear on the CWI Part B Practical exam, which is a pencil-and-paper test. In order to answer this question correctly, the test-taker would need to review the requirements for bend specimen preparation as outline in the CWI Part B Book of Specifications. Such requirements are found in Annex IV, and the requirements for grinding can be found in the notes that accompany the figures in Annex IV. To answer this question correctly, the test-taker must carefully inspect the grinding on each of the four bend specimens listed in order to see which has been ground incorrectly according to the Book of Specifications. Without the physical bend specimens to review, it's not possible to provide an answer to this question, but the question is provided as an example of the kinds of questions that will appear on the exam.