



American Welding Society

CWI Part A Fundamentals English and
Language-Assisted 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 A Fundamentals examination is to test fundamental principles including, but not limited to welding processes, nondestructive testing, safety, quality assurance, inspector's duties, weld discontinuities, welding symbols, joint design, mechanical properties of metals, and basic on-the-job mathematics.

Examination Delivery

The examination is a computer-based test (CBT) delivered at a Prometric test center.

Test Specifications

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

Content Area	Minimum* Percent of Questions on Exam
01 Definition and Terminology	12
02 Welding Processes	12
03 Symbols – Welding and NDE	10
04 Weld Examination	10
05 Welding Performance	9
06 Test Methods- NDE	8
07 Heat Control & Metallurgy (carbon and low-alloy steel)	6
08 Welding Related Calculations	6
09 Duties and Responsibilities	4
10 Destructive Tests	3
11 Cutting	2

* The percentage 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

There are no specific reference books you should study. However, candidates can get familiar with the welding fundamentals principles listed in the B5.1:2013-AMD 1 *Annex A Informative Reference Documents*.

Exam Type

CWI Part A is a closed-book examination. Candidates cannot bring any reference books to the CBT testing centers nor will there be reference books appearing on the screen.

Pretesting

The unscored questions are referred to as “pretest” questions. This is common practice within the high stakes testing industry. It allows AWS to evaluate new items for content validity and statistical performance for potential use in future examinations and examination versions to have equivalent level of difficulty and quality.

These questions are not scored and will not count towards the examination score. These items are randomly placed within the examination and are not identifiable as pretest items.

Total Number of Questions on the Examination

The total number of questions on the Part A examination is 165: 150 questions are “scored” and 15 are “unscored” “pretest” questions.

Language-Assisted Examination Forms

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

Allotted Time to Complete the CWI Part A Examination

Candidates have a maximum of 135 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 consists primarily of multiple-choice items; some single correct answer items and alternative item types may appear as well.

Sample Questions for the CWI Part A Fundamentals Examination

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

Sample Question One

Which of the following represents a classification of SAW flux?

- A. Active
- B. Low alloy
- C. Nickel-based
- D. Slag

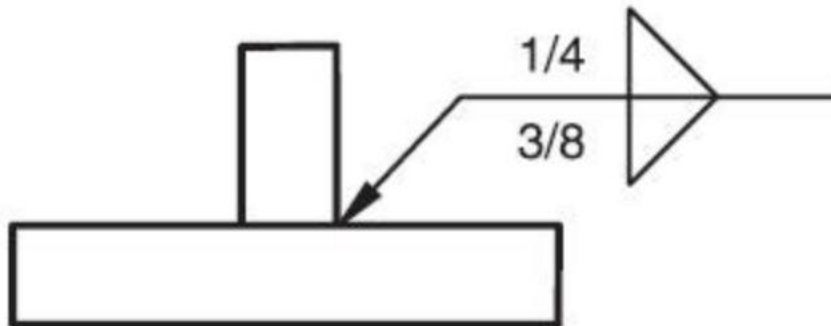
Commentary

This question tests basic knowledge of welding processes and is likely to appear on the CWI Part A Fundamentals exam. Part A is a closed-book exam, and so questions such as this that appear on the exam won't require the test-taker to look anything up in order to answer correctly. CWIs should understand the basic ways that SAW fluxes are classified, and that the best answer here is A.

(For those unfamiliar with SAW fluxes, one good source of information about SAW fluxes can be found in the "Submerged Arc Welding" chapter of the Welding Handbook, Volume 2. According to the section on the classification of fluxes: "When classified according to the manner in which they modified the composition of weld metal, fluxes can be categorized as neutral, active, or alloy fluxes." The text goes on to note that other classification systems exist for SAW fluxes.) Many test-takers found this question challenging, with only about half of test-takers selecting the correct answer.

Sample Question Two

Which of the following is represented by the welding symbol in the figure?



- A. Double leg fillet weld
- B. Equal double-fillet weld
- C. Unequal double-fillet welds
- D. Unequal leg fillet weld

Commentary

Sometimes questions on the CWI Part A Fundamentals will include a figure. This question tests a basic understanding of welding symbols, and CWIs should be familiar with the basics of welding symbols from the AWS standard A2.4. In this figure provided, a T-joint is to be welded with fillet welds on both sides, and the numbers that appear to the left of the fillet weld symbols indicate the fillet weld size. Because the two sizes are different, this double fillet weld will be unequally sized, which is answer choice C. Note that the figure in this question is very similar to the image in Figure 32 of the A2.4:2012, but because this is a closed-book test, test-takers need to be familiar with the sample images from the standard in advance.