



Code Clinic

For Study of AWS D1.1 Structural Welding Code – Steel

R E F E R E N C E M A N U A L



American Welding Society

Code Clinic

For Study of

AWS D1.1:2000 Structural Welding Code—Steel

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AWS CODE CLINIC—AWS D1.1:2000

AIMS AND GENERAL INFORMATION

The *AWS Code Clinic*, published by the Education Department of the American Welding Society, is designed in general to guide and assist quality professionals (inspectors, supervisors, etc.), as well as quality-conscious engineers and managers, in reading and understanding 'codes.' However, no book, guide, or text can substitute for hands-on knowledge and experience. Working through the examples in the text and answering the questions at the end of each module is a vitally important part of the *AWS Code Clinic*.

This Clinic is comprised of an introductory module plus nine (9) additional modules. Each module covers a specific code section, or group of sections.

A set of exercise questions is provided at the end of this Clinic. Responding to the questions provides a valuable review of the module material.

Graphics and text slides illustrate particular aspects of the code under consideration. Students are strongly advised to make their own notations on the applicable code figure, table or reference. Just reviewing the text and hoping the information conveys itself by osmosis is not very productive.

It is vital that the student's copy of the code being reviewed is physically open to the page under consideration. Remembering excerpts from the code is neither necessary nor desirable. The aim of this Clinic is to provide familiarity with, in this instance, **AWS D1.1, 2000** revision, and the use of a systematic approach. It is not the aim of this Clinic to encourage memorization of any part of the code.

The most frequently used tables and figures should be very carefully reviewed. Physically working with each of these tables and figures by answering illustrative questions is beneficial and effective in developing skill in 'reading codes.' The exercise questions found at the end of this Clinic also illustrate the type of question likely to be encountered in practice. These should be answered either during formal study or at the conclusion of the clinic.

The suggested study program is shown in Table I.1 below.

Table I.1—Suggested Clinic Study Program

- | |
|--|
| <ol style="list-style-type: none">1. Review the code section(s) being considered;2. Consider how the subject of the module is or may be applicable in practice;3. Answer the exercise questions. |
|--|

For those requiring more work, ask your instructor for additional practice questions.

The AWS appreciates feedback from participants in their educational programs.

Please send comments, etc., to

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INTRODUCTION TO THE AWS CODE CLINIC

Introduction

The **AWS Code Clinic** is designed to assist and guide quality professionals. The Clinic is particularly addressed to those whose primary task is establishing '*product quality*.' This Clinic employs the AWS D1.1, *Structural Welding Code—Steel*, 2000 revision.

AWS D1.1 is representative of the principles involved in 'reading' any code, standard, specification, or guide. While each such document has a specific purpose, the principles of use are constant. The definitions given in Table 1 below show the differences.

Table 1—Definitions of "Code" Documents

A Code is "a body of laws; as of a nation, state or industry group; arranged systematically for ease of use and reference." Examples include AWS D1.1; API 1104, ASME Section VIII, MIL Spec 248 D.
A Standard is "established for use as a 'rule' or basis of comparison in measuring quality, quantity, content, relative value, etc." ASTM Standards for various products such as ASTM A 36 for weldable structural steels, is an example.
A Specification is "a detailed description of parts of a whole; a statement or enumeration of particulars as to actual or required quality, size, etc." AWS Filler Metal Specifications A5.1 through A5.31 are examples.
A Guide (self-explanatory) is a document of the same class; AWS B1.11— <i>Guide for the Visual Examination of Welds</i> , is an example.

Such documents are generally known as 'codes' or 'specs.' As stated above, while it is neither necessary nor desirable to memorize specific provisions, it is essential to know ones way about any document being so used. Even with regularly referenced 'code' provisions, the preferred practice is to 'look it up' each time. Factors, inapplicable in other instances, may apply in the circumstance being considered. Failure to refer to the 'code' may result in oversight of some vital provision.

Remember, **quality** is '*measurable conformance to specification*.'

To establish **product quality**, codes, standards, and specifications are invoked or mandated by 'purchasers.' The designated document(s) thus become(s) the 'code' (or sometimes, the **spec**) to which the product(s) concerned must 'conform.' It is thus vital that quality professionals be able to read, understand, and apply the provisions of the '**governing code**' as set out in the applicable purchase order documentation. It is for this purpose that the current Clinic is presented. An example of such a code is AWS D1.1—the title sheet is shown in Figure 1 on the following page.

To facilitate working with a 'code,' it is worthwhile to 'index' its sections. AWS D1.1 has eight (8) sections. An index **tab** at the first page of each section simplifies usage. Experience also shows that certain tables are used frequently. These may also be flagged for ease of use and reference. See Figure 2 on page 3.