



**American Welding Society®**

*Education Services*

# D1.1 Code Clinic



# CODE CLINIC

For Study of

AWS D1.1/D1.1M: 2010  
Structural Welding Code—Steel

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## **AWS Code Clinic Reference Manual—AWS D1.1/D1.1M: 2010**

**FOREWORD** AWS Education Services publishes the *AWS Code Clinic Workbook* to guide and assist quality professionals – inspectors, supervisors, etc. – and quality-conscious engineers and managers in reading, understanding, and learning to apply industrial codes such as *AWS D1.1/D1.1M: 2010, Structural Welding Code—Steel*. *AWS D1.1/D1.1M: 2010* covers the welding requirements for any type of welded structure made from the commonly used carbon and low-alloy steels.

This 2008 edition of the *Code Clinic Reference Manual* for the study of *AWS D1.1/D1.1M: 2008 Structural Welding Code—Steel* is based on information from *AWS D1.1/D1.1M: 2008 Structural Welding Code—Steel*. This edition supersedes previous editions of the *Code Clinic Reference Manual*.

This *D1.1 Code Clinic Reference Manual* consists of an introduction and nine sections. Sections 1 through 8 cover the eight corresponding sections of the code; Section 9 covers the annexes, commentary, and index. Each section begins with an orientation to and general discussion of that code section's contents.

For each section, exercise questions and answers are provided at the end of this document. Answering them provides a valuable review of the section contents. These questions also illustrate the types of questions you're likely to encounter in practice.

The authors of this book want you to write in this book and in D1.1 to clarify your understanding of the figures, tables, and text in both volumes.

As you read this book, open the code to the corresponding page. Remembering excerpts from the code is neither necessary nor desirable. You need not memorize the code; just learn how to use it.

The American Welding Society appreciates feedback from participants in its education programs. Please send comments or questions to:

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Additional information on AWS products and services may be found on our website: [www.aws.org](http://www.aws.org)

# Chapter 1

## Introduction

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## INTRODUCTION

The first iteration of the D1.1 code, *The Code for Fusion Welding and Gas Cutting in Building Construction*, was published by the American Welding Society in 1928. Since that time, the D1.1 has undergone numerous revisions, upgrades, and name changes, ultimately culminating in this latest version: *D1.1/ D1.1M:2010 Structural Welding Code – Steel*. This code clinic reference manual is designed to guide potential test takers through the D1.1 code and provide them with the strategies and skills necessary to competently navigate the D1.1 code book.

The skill set obtained through this program, as either part of the AWS Certified Welding Inspector Seminar, or as individual self-study, will aid future welding inspectors in the navigation of the D1.1 code book, allowing them to quickly and accurately identify specifications related to their current code work. The purpose of the D1.1 Code Clinic Reference Manual is both to prepare the reader to sit for the “Code Book” portion of the Certified Welding Inspector Examination or the D1.1 endorsement Exam, and to provide practical knowledge, advice, and techniques utilized to develop the needed skill set. While many of the techniques and advice provided in this reference manual can be applied to virtually any code and specification, the information contained in herein is meant to solely reference the AWS *D1.1/ D1.1M:2010 Structural Welding Code – Steel*. This edition of the D1.1 Code Clinic Reference Manual supersedes previous editions of the CCRM.

## OBJECTIVES

The express purpose of the Code Clinic Reference Manual is to instruct the reader on efficiently and effectively navigating the D1.1 Code Book. By the end of the program the reader should be able to:

- 1) Identify the eight clauses of the D1.1:2010 codebook and describe the content of each clause.
- 2) Effectively implement the system taught in this reference manual for identifying keywords.
- 3) Utilize the index, table of content, and list of tables and figures to identify specific areas of the code.
- 4) Differentiate information located in the D1.1 text, tables, and figures.
- 5) Prepare the D1.1 cod50 for a given examination.
- 6) Confidently, efficiently, and accurately navigate the D1.1 code book.

## WHAT THIS BOOK IS NOT

While the D1.1 Code clinic Reference Manual is designed to provide a thorough examination of navigation techniques and methodologies, the CCRM is **not**:

- 1) A short cut. Simply reviewing this reference manual will not substantially

## HOW TO PREPARE?

Preparing for the D1.1 Code Book Exam, much like the layout of this workbook, is divided into five phases:

- 1) **Understanding** the exam and the code
- 2) **Familiarizing** oneself with the individual clauses
- 3) **Strategizing** techniques for answering questions
- 4) **Preparing** oneself and the codebook
- 5) **Practicing**, practicing, and practicing

## UNDERSTANDING

The Code Clinic Reference Manual begins with an analysis of the D1.1 code exam and a basic overview of the code structure, which are the foundation of this program. These topics are reviewed in Chapters 2 and 3 respectively.

Chapter 2 “*Putting the Test into Perspective*” provides a detailed description of the D1.1 Certification Exam structure, making a direct connection between the exam’s body of knowledge and how to prepare for it. The chapter enables the readers to:

- See the exam from the test maker’s perspective.
- Understand the way AWS has structured the test including the type of questions, exam length, and time requirements.
- Develop fundamental testing strategies such as exam pacing and benchmarking.

Chapter 3 “*The Code: An Overview*” facilitates the utilization of the code by breaking down its structure and major components. The chapter includes:

- A basic top-level overview of each of the eight major clauses including the major topics and topic areas.
- A description of the code’s clauses, including their interrelationships, allowing the reader to view the code from a practical perspective and thereby locate information more efficiently and accurately.

## FAMILIARIZING

The next eight chapters, 3 through 11, provide an in-depth description of the eight clauses in the D1.1 code: General Requirements, Design of Welded Connections, Prequalification of WPSs, Qualification, Fabrication, Inspection, Stud Welding, and Strengthening and Repairing Existing Structures. Each chapter focuses on a single clause and identifies:

- The purpose of the clause. *Why is this clause necessary? What information can be found in this clause?*
- The structure of the clause. *What are the major topics? What information is found in the text, tables, and figures?*

- The important topics. *What information is especially relevant to a welding inspector and where is that information located?*

## STRATEGIZING

Chapters 12, 13, and 14 will equip the reader with test taking strategies geared specifically to the AWS D1.1 Code Book Exam. These chapters focus on utilizing the code's structure to the reader's advantage in locating the pertinent information in the most efficient manner.

Chapter 12 "*Attacking the Question*" provides:

- Strategies to help the reader understand the question's prompt. *What is the question really asking?*
- Strategies for identifying the keywords in a question. *What words should the reader use to start looking for an answer?*

Chapter 13 "*Using the Index and Table of Contents*" provides:

- Strategies for locating information efficiently in the codebook. *What are the most efficient ways to refer to the Index and Table of contents? How does the reader determine whether to refer to the Index or Table of Contents first?*

Chapter 14 "*Text, table, figure*" provides:

- Strategies for predicting where an answer will be found within a clause. *Should the reader expect the answer to be found in a section of text, a table, or a figure?*

Together these three chapters provide an effective system for quickly locating information in the D1.1 Code Book that will transcend the exam itself, and provide a systematic approach that can be efficiently utilized in the field.

## PREPARING

The last chapters of the code clinic, Chapters 15 and 16 focus on preparing the codebook and oneself for the certification examination. Chapter 15, "*Tabbing and Highlighting*", covers the do's and don'ts on tabbing and highlighting the code book. Chapter 16, "*Test Taking Tips*", includes general test taking tips that are critical for any multiple choice exam (D1.1 exam included) as well as strategies that can be used to put oneself in the right mind-frame before and during the exam.

## PRACTICING

The single most important aspect of preparing for the D1.1 Code Examination is practicing, practicing, practicing. The last section of the clinic contains four sample D1.1 tests, of varying length and complexity that can be used to practice for the exam while simulating a test day environment.

## **HOW TO USE THIS BOOK**