American Welding Society

BODY OF KNOWLEDGE

Senior Certified Welding Inspector

All examinations for the AWS Senior Certified Welding Inspector are in open-book format. Candidates may bring to the examination site any reference materials that they feel will assist them in taking the examinations.

The SCWI examinations will consist of two open book examinations, each lasting two hours. All applicants shall successfully meet the SCWI requirements as contained in 6.2 of AWS B5.1, *Specification for the Qualification of Welding Inspectors.* Candidates must pass each exam part with a minimum of 72%.

Approximate subject weights for the two examination parts are as follows:

Part 1 - Technical Fundamentals	
Welding and allied processes	5%
Heat control and metallurgy	10%
NDE fundamentals	10%
NDE applicability	1%
Destructive testing	5%

Part 2- Administrative Fundamentals	
Welding procedure qualification	10%
Welding Personnel Qualification and Certification	10%
Welding Inspection and NDE Personnel Qualification and Certification	10%
Quality assurance	10%
Safety programs and procedures	5%
Project management	5%
Personnel management and training	5%

Percentages indicate the *minimum* required for each category in an examination.

Body of Knowledge - Extended Subject Areas as per AWS B5.1:

Technical Fundamentals

- Welding and Allied Processes
- Heat Control & Metallurgy
  - High Alloy Steel
  - Nonferrous Materials
- NDE (VT, PT, MT, RT, UT)
  - Fundamentals
  - Techniques
  - Applicability
- NDE (ET, AET, LT)
  - Applicability
  - Destructive Testing (Including groove welds, fillet welds, stud welds, and weldability testing)
  - Fundamentals
  - Techniques
  - Applicability

Administrative Fundamentals

- Welding Procedure Qualification and Approval
- Welding Personnel Qualification and Certification
- Welding Inspection and NDE Personnel Qualification and Certification
- Quality Assurance/Quality Management, including:
  - Quality Programs
  - Document Control
  - Procurement and Supplier Control
  - Calibration
  - Quality Control
  - Process Control
  - Statistical Quality Control
  - Trend Analysis
  - Nonconformance Control
  - Auditing and Surveillance
  - Corrective Action
  - Records
- Safety Programs and Procedures
- Project Management
- Personnel Management and Training Programs
- Performance Evaluation

AWS Senior Welding Inspector (SCWI) Examination Preparatory Material

The examination questions for the SCWI certification may be taken from the following list of references, but are not limited to these reference documents.

NUMBER	TITLE
ANSI Z49.1:2005 (AWS)	*Safety in Welding, Cutting, and Allied Products*
AWS A1.1:2001	*Metric Practice Guide for the Welding Industry*
AWS A2.4:1998 or 2012	*Standard Symbols for Welding, Brazing, and Nondestructive Examination*
AWS A3.0:2010	*Standard Welding Terms and Definitions*
AWS B1.10:2009	*Guide for the Nondestructive Examination of Welds*
AWS B1.11:2000	*Guide for the Visual Inspection of Welds*
AWS B2.1:2009	*Specification for Welding Procedure and Performance Qualification*
AWS B4.0:2007	*Standard Methods for Mechanical Testing of Welds*
AWS B5.1:2003	*Specification for the Qualification of Welding Inspectors*
AWS D10.4:1986	*Recommended Practices for Welding Austenitic Chromium – Nickel Stainless Steel Piping and Tubing*
AWS QC1:2007	*Standard for AWS Certification of Welding Inspectors*
AWS CM	AWS *Certification Manual for Welding Inspection*
WI:2000	AWS *Welding Inspection Handbook*
WIT-T:2008	AWS *Welding Inspection Technology*
AWS WHB-1, 8th or 9th edition	AWS *Welding Handbook, Vol. 1: Welding Science & Technology*
AWS WHB-2, 8th or 9th edition	AWS *Welding Handbook, Vol. 2: Welding Processes*
AWS WHB-3, 8th or 9th edition	AWS *Welding Handbook, Vol. 3: Materials and Applications Part I*
AWS WHB-4, 8th or 9th edition	AWS *Welding Handbook, Vol. 4: Materials and Applications Part II*
ISO 9001 (www.iso.org)	ISO 9001 *Quality Management Systems—Requirements*
ASNT SNT-TC-1A:2006 (800-222-2768)	ASNT SNT-TC-1A *Recommended Practice: Personnel Qualification and Certification in Nondestructive Testing*

To order any of the above publications:
Contact WEX at 888-welding or 305-824-1177
or visit the website at www.awspubs.com