

## 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 only the reference materials listed on [page 2](#) to assist them in taking the examinations. With the exception of the ASNT SNT-TC-1A:2006, electronic copies of the books listed on page 2 of this Body of Knowledge are also available at Prometric testing sites.

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 complete both exam parts with a minimum average of 72% overall.

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

| <b>Part A</b>                |     | <b>Part B</b>                                     |     |
|------------------------------|-----|---|-----|
| Welding and allied processes | 5%  | Welding procedure qualification                   | 10% |
| Heat control and metallurgy  | 10% | Welding Personnel Qualification and Certification | 10% |
| NDE fundamentals             | 10% | Welding Inspection and NDE Personnel              |     |
| NDE applicability            | 1%  | Qualification and Certification                   | 10% |
| Destructive testing          | 5%  | 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.

| <u>NUMBER</u>   | <u>TITLE</u>  |
|---|---|
| SCWI-SG-4   | <a href="#">Senior Certified Welding Inspector Study Guide – Section 4 Quality Assurance</a> (Free Download)*<br>*Must Read |
| ANSI Z49.1:2005 (AWS)                                 | <i>Safety in Welding, Cutting, and Allied Products</i>  |
| AWS A1.1:2001   | <i>Metric Practice Guide for the Welding Industry</i>   |
| AWS A2.4:1998 or 2012                                 | <i>Standard Symbols for Welding, Brazing, and Nondestructive Examination</i>  |
| AWS A3.0:2010   | <i>Standard Welding Terms and Definitions</i>   |
| AWS B1.10:2009  | <i>Guide for the Nondestructive Examination of Welds</i>  |
| AWS B1.11:2000  | <i>Guide for the Visual Inspection of Welds</i>   |
| AWS B2.1:2009   | <i>Specification for Welding Procedure and Performance Qualification</i>  |
| AWS B4.0:2007   | <i>Standard Methods for Mechanical Testing of Welds</i>   |
| AWS B5.1:2003   | <i>Specification for the Qualification of Welding Inspectors</i>  |
| AWS D10.4:1986  | <i>Recommended Practices for Welding Austenitic Chromium – Nickel Stainless Steel Piping and Tubing</i>                     |
| AWS QC1:2007  | <i>Standard for AWS Certification of Welding Inspectors</i>   |
| AWS CM  | <i>AWS Certification Manual for Welding Inspection</i>  |
| WI:2000   | <i>AWS Welding Inspection Handbook</i>  |
| WIT-T:2008  | <i>AWS Welding Inspection Technology</i>  |
| AWS WHB-1, 8 <sup>th</sup> or 9 <sup>th</sup> edition | <i>AWS Welding Handbook, Vol. 1: Welding Science &amp; Technology</i>   |
| AWS WHB-2, 8 <sup>th</sup> or 9 <sup>th</sup> edition | <i>AWS Welding Handbook, Vol. 2: Welding Processes</i>  |
| AWS WHB-3, 8 <sup>th</sup> or 9 <sup>th</sup> edition | <i>AWS Welding Handbook, Vol. 3: Materials and Applications Part I</i>  |
| AWS WHB-4, 8 <sup>th</sup> or 9 <sup>th</sup> edition | <i>AWS Welding Handbook, Vol. 4: Materials and Applications Part II</i>   |
| *ASNT SNT-TC-1A:2006<br>(800-222-2768)                | <i>ASNT SNT-TC-1A Recommended Practice:<br/>Personnel Qualification and Certification in Nondestructive Testing</i>         |

\*Electronic copy not available in Prometric Test Sites.

To order any of the above publications:  
Contact Technical Standards Sales at 305-443-9353, Ext. 280  
Or visit the [AWS Bookstore](#)