Certification: Structural Welding Special Inspector

Exam ID: S2

- 90 multiple-choice questions
- 3-1/2-hour limit
- Open book

Scope:
The Structural Welding Special Inspector is responsible for enforcing the construction details contained in the approved plans and specifications for welding of structural steel elements of a building. The special inspector reviews the statement of special inspections and the approved plans and specifications, and verifies that welding is done as shown and as specified in the approved plans and specifications. The special inspector is responsible for material sampling and for performing required tests. The special inspector is responsible for writing and submitting required reports, including reports of items that do not comply with the plans, to the building official, contractor, and/or registered design professional.

01 General Requirements **8%**

0101 Duties and Responsibilities 4%
Review approved plans and specifications for special inspection requirements. Comply with special inspection requirements of the enforcing jurisdiction.

0102 Notification of Discrepancies 2%
Notify the contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the architect or engineer of record and the building official of deviations.

0103 Inspection and Test Reports 2%
Submit progress reports to the architect or engineer of record and the building official, describing tests which were performed and compliance of work. Submit final summary report stating whether work requiring special inspection was in conformance with the approved plans and applicable provisions of the building code.

02 Material Sampling, Testing, and Verification **22%**

0201 Material Identification 15%
Verify that the steel shapes, base metals, filler metals, and gases are of the type, size, grade, and condition specified on the approved plans, specifications, and welding procedures specifications.

0202 Material Sampling 4%
Verify the required type, quantity, location, and frequency of tests to be performed and witness preparation of properly identified test material samples on all materials. Provide or arrange for documentation and transportation of samples to the laboratory. Verify that required destructive testing is performed on materials as required by applicable standards and specifications.

0203 Nondestructive Examination 3%
Verify that required nondestructive examinations are performed as required by applicable standards and specifications.

03 Structural, Reinforcing, and Sheet Steel Welding **70%**

0301 Welding Equipment and Process 3%
Verify that the welding equipment and process has the capability to produce the specified welds. Ensure that welding equipment is calibrated and appropriate for use with the welding process.

0302 Welder Qualification 3%
Verify and/or witness qualification of welders, welding operators, and tackers for conformance with AWS standards and specifications. Verify that welders are qualified to perform the specified

0303 Welding Procedure Specification 7%
Verify that the proposed welding procedure for structural steel, reinforcing steel, and sheet metal is a standard prequalified procedure, or has been properly qualified and approved. Verify that welding processes, sequences, and procedures are followed in accordance with approved welding procedure specification.

0304 Weld Type and Location 16%
Review approved plans and specifications for weld types and locations.

0305 Filler Materials, Storage, and Handling 6%
Verify that filler materials are stored and handled in accordance with manufacturer and project specifications.

0306 Joint Preparation and Fit-Up 8%
Verify that base metal to be welded is properly prepared and oriented. Verify that weldments have proper joint geometry and have backing and start/runoff tabs where required.

0307 Repairs 2%
Inspect to ensure that weld and structural steel repairs are performed in accordance with approved procedures.

0308 Fabrication Tolerances 3%
Verify that fabricated elements are within permissible tolerances.

0309 Weld Quality 22%
Verify that welds have the specified length and effective throat. Verify that the weld profile meets applicable shape, size, and quality requirements.