

S1

Structural Steel and Bolting Special Inspector

Required examinations	Exam ID
Special Inspector General Requirements	GR
Structural Steel and Bolting (Codes Module)	S1C
Structural Steel and Bolting (Plans Module)	S1P

REQUIREMENTS FOR STRUCTURAL STEEL AND BOLTING SPECIAL INSPECTOR CERTIFICATION:

- Pass the GR - Special Inspector General Requirements Exam OR hold an ICC Special Inspector Certification
- Pass the S1C – Structural Steel and Bolting (Codes Module) Exam
- Pass the S1P – Structural Steel and Bolting (Plans Module) Exam

GR

Special Inspector General Requirements

EXAM ID	CATEGORY	STATE	TYPE	CODE YEAR
GR	Modular, Special Inspector	National/All	National Certification	2015 or 2018

QUESTIONS	25
TIME LIMIT	1:00 Hours
OPEN BOOK?	Open
TEST METHOD	Proctored Online Testing (PRONTO)
FEE	\$55.00

To register:

<https://shop.iccsafe.org/gr-special-inspector-general-config.html>

SCOPE

The General Requirements Module for the Special Inspector exams covers job tasks that are the same for all categories of special inspection. For example, whether an individual is working as a Soils Special Inspector or inspecting structural welding, the general duties and responsibilities are the same.

The special inspector reviews the approved plans and complies with requirements of the enforcing jurisdiction since the building officials approve all special inspectors to work in their jurisdictions. The special inspector knows the plan details; if the work being done deviates from the plan, the special inspector notifies the contractor, and if the contractor does not correct the deviation, the special inspector notifies the architect or engineer of record and the building official. Special inspectors also submit progress reports describing tests performed and compliance of the work with the plans.

The General Requirements Module exam tests special inspectors on these and other requirements found in the IBC Sections 102 through 104 and Section 1704. These general requirements are also explained in detail in the Special Inspection Manual, a necessary reference for this exam.

REFERENCES

Exam based on 2018 IBC

2018 International Building Code

2018 Special Inspection Manual*

2012 Special Inspection Manual*

NOTE: You may bring either the 2018 OR 2012 edition of the Special Inspection Manual for this exam.

Any copyrighted, bound book may be used at a test site. Exam questions will only come from the listed approved references, and exam appeals may only be based on the listed approved references.

Exam based on 2015 IBC

2015 International Building Code

2018 Special Inspection Manual*

2012 Special Inspection Manual*

NOTE: You may bring either the 2018 OR 2012 edition of the Special Inspection Manual for this exam.

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GR EXAMINATION OUTLINE

General Requirements	100%
Duties and Responsibilities Review approved plans and specifications for special inspection requirements. Comply with special inspection requirements of the enforcing jurisdiction.	60%
Notification of Discrepancies 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.	20%
Inspection Reports 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.	20%

S1C

Structural Steel and Bolting Special Inspector (Codes Module)

EXAM ID	CATEGORY	STATE	TYPE	CODE YEAR
S1C	Modular, Special Inspector	National/All	National Certification	no code year

QUESTIONS	60
TIME LIMIT	2:00 Hours
OPEN BOOK?	Open
TEST METHOD	Computer-Based Testing (CBT)
FEE	\$145.00

To register:

<https://shop.iccsafe.org/s1c-structural-steel-and-bolting-codes.html>

SCOPE

The Structural Steel and Bolting Special Inspector is responsible for enforcing the construction details contained in the approved plans and specifications for high-strength bolting of steel framing and structural steel elements of a building. The special inspector reviews the statement of special inspections and the approved plans and specifications, and verifies that high-strength bolting is installed 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.

REFERENCES

AISC Steel Construction Manual, 14th Edition
or
AISC Steel Construction Manual, 15th Edition

Any copyrighted, bound book may be used at a test site. Exam questions will only come from the listed approved references, and exam appeals may only be based on the listed approved references.

S1C EXAMINATION OUTLINE

Material Sampling, Testing, and Verification	28%
Material Identification Verify that the steel shapes and bolts are of the type, size, grade, and condition specified on the approved plans and specifications.	15%
Material Sampling 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 testing is performed on materials as required by applicable standards and specifications	13%
High-Strength Bolting	65%
Bolts, Nuts, and Washers Verify correct type, size, and location of bolts and bolt holes, nuts, and washers for type of connection specified on approved plans and specifications. Verify protected storage of bolts, nuts, and washers as required by applicable standards and specifications.	23%
Pre-installation Verification Verify that faying surfaces at connections utilizing high-strength bolts are in compliance with applicable standards. Observe or conduct bolt tension verification tests on required high-strength bolt assemblies.	17%
Installation, Testing, and Inspection Identify and verify joint type and installation of bolt assemblies per approved plans and specifications. Verify use of the approved method and sequence of bolt tightening	25%
Steel Framing Observation	5%
Orientation and Frame Member Sizes Verify that structural steel frame orientation, details, and frame member sizes are in accordance with approved plans and specifications.	3%
Base Plates Verify that column base plates are the designed configuration, have correct size hole, and proper clearance for grouting. Verify grout placement and sampling. Verify that base plates are securely seated and fastened in accordance with applicable plans and specifications	2%

S1P

Structural Steel and Bolting Special Inspector (Plans Module)

EXAM ID	CATEGORY	STATE	TYPE	CODE YEAR
S1P	Modular, Special Inspector	National/All	National Certification	no code year

QUESTIONS	30
TIME LIMIT	1:30 Hours
OPEN BOOK?	Open
TEST METHOD	Computer-Based Testing (CBT)
FEE	\$145.00

To register:

<https://shop.iccsafe.org/s1p-structural-steel-and-bolting-plans.html>

SCOPE

The Structural Steel and Bolting Special Inspector is responsible for enforcing the construction details contained in the approved plans and specifications for high-strength bolting of steel framing and structural steel elements of a building. The special inspector reviews the statement of special inspections and the approved plans and specifications, and verifies that high-strength bolting is installed 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.

REFERENCES

The special inspector plan modules are based on electronic plans provided with each examination item. While any copyrighted, bound book may be used at a test site, all examination questions are based solely on the plans provided

S1P EXAMINATION OUTLINE

Material Sampling, Testing, and Verification	17%
Material Identification Verify that the steel shapes and bolts are of the type, size, grade, and condition specified on the approved plans and specifications.	17%
High-Strength Bolting	17%
Bolts, Nuts, and Washers Verify correct type, size, and location of bolts and bolt holes, nuts, and washers for type of connection specified on approved plans and specifications. Verify protected storage of bolts, nuts, and washers as required by applicable standards and specifications.	17%
Steel Framing Observation	66%
Orientation and Frame Member Sizes Verify that structural steel frame orientation, details, and frame member sizes are in accordance with approved plans and specifications	46%
Base Plates Verify that column base plates are the designed configuration, have correct size hole, and proper clearance for grouting. Verify grout placement and sampling. Verify that base plates are securely seated and fastened in accordance with applicable plans and specifications	20%

S2

Structural Welding Special Inspector

Required examinations	Exam ID
Special Inspector General Requirements *	GR *
Structural Welding (Codes Module)	S2C
Structural Welding (Plans Module)	S2P

REQUIREMENTS FOR STRUCTURAL WELDING SPECIAL INSPECTOR CERTIFICATION:

- Prerequisite of Structural Steel and Bolting Special Inspector Certification (S1)
- Pass the S2C – Structural Welding Special Inspector (Codes Module)
- Pass the S2P – Structural Welding Special Inspector (Plans Module)

Note: GR Examination not required when applicant has the S1 Certification, or when applying for S2 Certification through transition (see below)

For S2 Certification through Transition

Option A - Current ICC Structural Steel and Welding Special Inspector (85) AND Current AWS CWI or CAWI Certification. Photocopy of CWI or CAWI Certification must be submitted

Option B - Current AWS CWI or CAWI Certification without a current ICC 85 Certification qualifies for transition to the Structural Welding Special Inspector (S2) by passing the Structural Steel & Bolting Special Inspector (S1) examination and then submit a copy of AWS Certification

Option C - Current ICC Structural Steel and Welding Special Inspector (85) AND attendance at the Structural Welding Inspection seminar given by Steel Structures Technology Center (SSTC)

<https://shop.iccsafe.org/s2-transition-structural-welding-special-inspector.html>

S2C

Structural Welding Special Inspector (Codes Module)

EXAM ID	CATEGORY	STATE	TYPE	CODE YEAR
S2C	Modular, Special Inspector	National/All	National Certification	no code year

QUESTIONS	60
TIME LIMIT	2:00 Hours
OPEN BOOK?	Open
TEST METHOD	Computer-Based Testing (CBT)
FEE	\$145.00

To register:

<https://shop.iccsafe.org/s2c-structural-welding-codes.html>

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.

REFERENCES

AWS A2.4:2012 Standard Symbols for Welding, Brazing, Nondestructive Examination
AWS D1.1/D1.1M: Structural Welding Code –Steel 2015 Edition
AWS D1.3/D1.3M: Structural Welding Code - Sheet Steel 2018 Edition
AWS D1.4/D1.4M: Structural Welding Code - Reinforcing Steel 2011 edition
AISC Steel Construction Manual, 14th Edition

Any copyrighted, bound book may be used at a test site. Exam questions will only come from the listed approved references, and exam appeals may only be based on the listed approved references.

S2C EXAMINATION OUTLINE

Material Sampling, Testing, and Verification	18%
Material Identification 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.	5%
Material Sampling 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.	7%
Nondestructive Examination Verify that required nondestructive examinations are performed as required by applicable standards and specifications	6%
Structural, Reinforcing, and Sheet Steel Welding	82%
Welding Equipment and Process 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.	5%
Welder Qualification 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 work.	5%
Welding Procedure Specification 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.	10%
Weld Type and Location Review approved plans and specifications for weld types and locations.	7%
Filler Materials, Storage, and Handling Verify that filler materials are stored and handled in accordance with manufacturer and project specifications.	8%
Joint Preparation and Fit-Up 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.	12%
Repairs Inspect to ensure that weld and structural steel repairs are performed in accordance with approved procedures.	5%
Fabrication Tolerances Verify that fabricated elements are within permissible tolerances.	5%
Weld Quality Verify that welds have the specified length and effective throat. Verify that the weld profile meets applicable shape, size, and quality requirements.	25%

S2P

Structural Welding Special Inspector (Plans Module)

EXAM ID	CATEGORY	STATE	TYPE	CODE YEAR
S2P	Modular, Special Inspector	National/All	National Certification	no code year

QUESTIONS	30
TIME LIMIT	1:30 Hours
OPEN BOOK?	Open
TEST METHOD	Computer-Based Testing (CBT)
FEE	\$145.00

To register:

<https://shop.iccsafe.org/s2c-structural-welding-codes-1.html>

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.

REFERENCES

The special inspector plan modules are based on electronic plans provided with each examination item. While any copyrighted, bound book may be used at a test site, all examination questions are based solely on the plans provided.

S2P EXAMINATION OUTLINE

Material Sampling, Testing, and Verification	37%
Material Identification 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.	37%
Structural, Reinforcing, and Sheet Steel Welding	63%
Welding Procedure Specification 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.	7%
Weld Type and Location Review approved plans and specifications for weld types and locations	40%
Fabrication Tolerances Verify that fabricated elements are within permissible tolerances.	3%
Weld Quality Verify that welds have the specified length and effective throat. Verify that the weld profile meets applicable shape, size, and quality requirements.	13%

General Examination Information

INTRODUCTORY INFORMATION

<https://www.iccsafe.org/professional-development/certifications-and-testing/certification-overview/>

SEARCH FOR YOUR EXAM

<https://www.iccsafe.org/certification-exam-catalog/>

NEW CHANGES TO ICC SPECIAL INSPECTOR EXAMS

<https://www.iccsafe.org/new-special-inspector-module-exams/>

CERTIFICATION EXAM ADMINISTRATION

<https://www.iccsafe.org/icc-exam-administrative-rules-and-procedures/#certadmin>

PROCTORED REMOTE (PRONTO) TESTING

<https://www.iccsafe.org/pronto-administration/>

https://support.iccsafe.org/?ht_kb=what-does-the-pronto-start-up-process-look-like

<https://www.iccsafe.org/professional-development/assessment-center/proctored-remote-online-testing/>

COMPUTER BASED TESTING

<https://www.iccsafe.org/professional-development/assessment-center/cbt-how-to-schedule/>

<https://www.iccsafe.org/professional-development/assessment-center/computer-based-testing-what-to-expect/>

SSTC Recommendations for ICC Examination Study Material

Recommended Publications	
GR S1C S1P S2C S2P	Structural Steel Inspector's Workbook
S1C S1P	Structural Bolting Handbook
S2C S2P	Structural Welding Quality Handbook

Recommended Online On-Demand Seminars	
GR	Special inspection of Structural Steel under the IBC
S1C	Structural Bolting Inspection
S2C	Structural Welding Inspection
S1P S2P	Plan Reading for Steel Construction

Other Online On-Demand Seminars for Additional Information	
GR	AISC Requirements for Quality Control and Quality Assurance
S1C	Inspection of Steel Fabrication
S2C	Inspection of Erected Steelwork