



IMPORTANT NOTICE REGARDING CHANGES TO THE ICB SMOKE CONTROL SYSTEMS CERTIFICATIONS

ICB certifications are periodically reviewed to ensure content is relevant to current industry practice, including the guiding documents used to develop exam content.

After an extensive review of the Smoke Control Systems (SCS) certifications, the ICB determined that changes were required in three areas:

1. Prerequisites.
2. Guiding Documents.
3. Certification Exams.

FREQUENTLY ASKED QUESTIONS

1. Prerequisites.

What changes were made to the prerequisites? Effective 10/01/2022, a qualified applicant for SCS certification (new and renewal) shall hold the following prerequisite certifications:

- **Technician:**
 - Fire and Smoke Damper Technician, and
 - TABB Technician.
- **Supervisor:**
 - Fire and Smoke Damper Supervisor, and
 - TABB Supervisor.

I am a SCS Technician and hold the Fire and Smoke Damper Technician certification but not the prerequisite TABB Technician certification. Is my SCS Technician certification still valid? Yes. Your certification is valid through 9/30/2022. To renew, you must obtain the prerequisite TABB Technician certification before 9/30/2022.

I am a SCS Supervisor and hold the Fire and Smoke Damper Supervisor certification but not the prerequisite TABB Supervisor certification. Is my SCS Supervisor certification still valid? Yes. Your certification is valid through 9/30/2022. To renew, you must obtain the prerequisite TABB Supervisor certification before 9/30/2022.

I am a SCS Contractor. How will the changes to the prerequisites affect my certification? Your certification is valid through 9/30/2022. To renew, you must employ SCS Technicians and Supervisors who hold the prerequisite certifications listed above.

2. Guiding Documents.

What changes were made to the guiding documents? They were updated to latest versions.

- **Technician:**
 - NFPA 3 (2018), Annex C.
 - NFPA 92 (2018), Chapters 1, 2, 3, 4, 6, 7, and 8.
 - ASHRAE Guideline 1.5 (2017), Annex L.
 - ASHRAE Handbook of Smoke Control Engineering (2012), Ch. 7, pp. 191-196.
- **Supervisor:**
 - NFPA 3 (2018), Annex C.
 - NFPA 92 (2018), Chapters 1, 2, 3, 4, 6, 7, and 8.
 - ASHRAE Guideline 1.5 (2017), Annex L.
 - ASHRAE Handbook of Smoke Control Engineering (2012), Ch. 7, pp. 191-196.
 - International Building Code (2018), Sections 909.18.8, 909.18.8.2, 1705.18, and 1705.18.2.
 - International Fire Code (2018), Section 909.18.8.2.

3. Certification Exams.

What changes were made to the exams? Exam content was revised based on the testing and inspection requirements in the latest versions of the guiding documents.

When will the revised exams go live? 9/1/2020.

I hold the prerequisite Fire and Smoke Damper certification but NOT the TABB certification.

Can I take the revised SCS exams? Yes. If you pass the exam, your certification will be valid through 9/30/2022. To renew your SCS certification, you will need to obtain the prerequisite TABB certification before 9/30/2022.

What should I do to prepare for the new exams? Follow these steps:

- **Technician:**
 - Familiarize yourself with the [Scope and Job Task Analysis](#) (see Attachment 1).
 - Identify and learn the applicable content in the guiding documents.
 - Review the ITI – Smoke Control Systems Technician Student Manual (*Student Manual will be available the first week of September 2020*).
 - Complete the online training course: ITI – Smoke Control Systems Technician (*course will be available the first week of September 2020*).
 - Go to www.sheetmetal-iti.org.
 - Click **TRAINING**.
 - Click **ONLINE COURSES**.
 - Click **Smoke Control Systems Technician**.
 - Log in using your **ITI** username and password.
 - No **ITI** username and password? It's simple to register – detailed instructions are provided on the log in page.

- **Supervisor:**
 - Familiarize yourself with the [Scope and Job Task Analysis](#) (see Attachment 1).
 - Identify and learn the applicable content in the guiding documents.
 - Complete the online training course: NEMI – Smoke Control Systems Supervisor (*course will be available the first week of September 2020*).
 - Go to www.icbcertified.org.
 - Click on **Certification**.
 - Click on **Smoke Control Systems Supervisor**.
 - Click on **Get Certified Now!** (scroll to bottom of page).
 - Complete **Option 1** or **Option 2**.
 - **Complete** and **Submit** the application.
 - Once approved, you will receive an enrollment code and detailed instructions to access the online training.

How do I gain access to the ITI – Smoke Control Systems Technician Student Manual? Contact your JATC Coordinator and request the book – it is issued as an electronic book for SMART members. *The Student Manual will be available the first week of September 2020.*

Why were NFPA Standards used to develop some portions of the exams? To ensure ICB-certified professionals are knowledgeable of testing and inspection requirements. Local, state, and international codes require that smoke control systems be tested and inspected according to the requirements in the NFPA Standards.

Are the revised exams administered as "open-book"? Yes.

Do I need to purchase the NFPA Standards to use during the exam? No. The NFPA allows free access.

How do I gain free access to NFPA Standards and use them during the exam? Follow these steps:

- Go to www.icbcertified.org.
- Click **Resources**.
- Click **Resources for ICB/TABB Certified Professionals**.
- Login to your ICB account.
- Select **NFPA Standards-eResources on Exam**.
- Click **Download**.

Attachment 1. Smoke Control Systems Scope and Job Task Analysis



Smoke Control Systems

Scope and Job Task Analysis
for the
Technician and Supervisor

Smoke Control Systems Technician

Scope of Job

The ICB-certified Smoke Control Systems Technician (SCS-T) performs the functional testing and general required maintenance of smoke control systems and is responsible for recognizing the proper installation, application, and usage of smoke control systems. The SCS Technician maintains an awareness of the testing requirements and procedures as specified in the [2018 Edition of NFPA 92](#).

Prerequisites

A qualified applicant for the ICB-certified SCS Technician shall hold the following certifications:

1. ICB-certified Fire and Smoke Damper Technician, and
2. ICB-certified TABB Technician.

Certification Exam

The purpose of the exam is to assess competence of the tasks, knowledge, and skills identified in the Job Task Analysis. The SCS Technician exam is divided into eight domains (broad areas of practice).

Exam Blueprint

Knowledge Domains:	% of exam	# scored
1. Design, Plans, and Specifications for Smoke Control Systems	5%	4
2. References for Smoke Control Systems	10%	8
3. Design Fundamentals for Smoke Control Systems	15%	12
4. Building Equipment and Controls for Smoke Control Systems	15%	12
5. Documentation for Smoke Control Systems	10%	8
6. Testing of Smoke Control Systems	30%	24
7. HVAC Systems for Smoke Control	10%	8
8. Responsibilities of FLS Team Members	5%	4
Total:	100%	80

Job Task Analysis

1. Design, Plans and Specifications for Smoke Control Systems (5% of exam)

The ICB-certified SCS Technician performs the following tasks:

- Locates smoke control components on plans.
- Reviews plans and specifications for the project.
- Requests copies of and reviews previous inspection reports.
- Reviews the MOP with the SCS Supervisor.

The ICB-certified SCS Technician is knowledgeable of:

- As-built drawings
- HVAC equipment submittals
- Previous inspection and testing reports
- Commonly used symbols and abbreviations for blueprints
- Purpose and format of the MOP

The ICB-certified SCS Technician is skilled in:

- Reading and interpreting previous inspection reports.
- Reading and interpreting blueprints for HVAC systems and life safety systems.

2. References for Smoke Control Systems (10% of exam)

The ICB-certified SCS Technician performs the following task:

- Identifies the references that are relevant to the project.

The ICB-certified SCS Technician is knowledgeable of:

- **NFPA 92-2018, Chapters 1-3 and related Annex sections:**
 - Scope and purpose as defined in Chapter 1
 - Scope and purpose of the referenced publications listed in Chapter 2
 - General definitions as listed in Chapter 3

The ICB-certified SCS Technician is skilled in:

- Researching applicable standards and codes for a specific project.

3. Design Fundamentals for Smoke Control Systems (15% of exam)

The ICB-certified SCS Technician performs the following tasks:

- Relates pressure differences across smoke barriers and doors.
- Identifies the design fundamentals of SCS as they relate to the project.
- Identifies the design approach of the smoke control system.
- Identifies the design criteria of the smoke control system.

The ICB-certified SCS Technician is knowledgeable of:

- **NFPA 92-2018, Chapter 4 and related Annex Sections:**
 - Design objectives
 - Design basis
 - Design approaches
 - Design criteria
 - System operation
 - Stairwell pressurization systems
 - Elevator pressurization systems
 - Zoned smoke control
 - Design objectives for combination systems
 - Requirements for vestibules
 - Types of doors located in smoke barriers

The ICB-certified SCS Technician is skilled in:

- Converting between pressure measurement scales.
- Identifying simple pressure cascades.

4. Building Equipment and Controls for Smoke Control Systems (15% of exam)

The ICB-certified SCS Technician performs the following task:

- Relates building equipment and controls to Fire Alarm and BMS systems.

The ICB-certified SCS Technician is knowledgeable of:

- **NFPA 92-2018, Chapter 6 and related Annex sections:**
 - Equipment and controls used for smoke control systems

- Sequence of operation for the smoke control system
- Automatic and manual activation/deactivation requirements
- Automatic and manual activation/deactivation devices
- Permitted location of HVAC equipment
- Supply and return air requirements for pressurization

The ICB-certified SCS Technician is skilled in:

- Balancing the HVAC system for a smoke control event.

5. Documentation for Smoke Control Systems (10% of exam)

The ICB-certified SCS Technician performs the following tasks:

- Reads and interprets operations and maintenance manual.
- Identifies the purpose of the installed SCS.
- Reviews design to confirm the required components are installed prior to testing.
- Generates smoke control system documentation as required in **NFPA 92-2018**.
- Creates initial logs after commissioning in new construction.
- Identifies who is responsible for maintaining documentation.

The ICB-certified SCS Technician is knowledgeable of:

- **NFPA 92-2018, Chapter 7 and related Annex sections:**
 - Documentation required
 - Detailed design report
 - Operations and maintenance manual
 - Responsibilities of the building owner

The ICB-certified SCS Technician is skilled in:

- Communicating smoke control procedures to FLS team members.
- Assessing completeness of SCS operations and maintenance manuals for acceptance test procedures.
- Identifying alarm inputs required by SCS test procedures.
- Identifying expected outputs and acceptable parameters for SCS test procedures.

6. Testing of Smoke Control Systems (30% of exam)

The ICB-certified SCS Technician performs the following tasks:

- Tests each smoke control system against its individual design criteria.
- Verifies completeness of building construction.
- Operates HVAC equipment and controls for testing.
- Performs component, acceptance, and periodic testing of SCS.
- Documents results of measurements and testing.

The ICB-certified SCS Technician is knowledgeable of:

- **NFPA 92-2018, Chapter 8 and related Annex sections:**
 - Requirements for component system testing
 - Requirements for acceptance testing
 - Requirements for periodic testing
 - Requirements for testing after system modification
- **ASHRAE Guideline 1.5-2017, Annex L:**
 - Requirements related to testing SCS

The ICB-certified SCS Technician is skilled in:

- Completing preliminary building inspections.
- Comparing test results to design criteria.
- Adjusting for results outside allowable parameters.
- Identifying proper equipment to use for required measurements.
- Measuring pressures across smoke control zones and barriers.
- Measuring door opening forces.
- Measuring relief airflows.
- Adjusting barometric dampers.
- Adjusting door sweeps.
- Developing concise documentation to indicate test data points and results.
- Writing comprehensive reports.
- Communicating with FLS team members for fire alarm and SCS testing.

7. HVAC Systems for Smoke Control (10% of exam)

The ICB-certified SCS Technician performs the following task:

- Identifies types of HVAC systems used for smoke control purposes.

The ICB-certified SCS Technician is knowledgeable of:

- [ASHRAE Handbook of Smoke Control Engineering 2012, Chapter 7, pp. 191-196](#)

8. Responsibilities of FLS Team Members (5% of exam)

The ICB-certified SCS Technician performs the following tasks:

- Identifies FLS team members required to attend testing.
- Identifies the responsibilities of FLS team members.

The ICB-certified SCS Technician is knowledgeable of:

- [The content and purpose of NFPA 3-2018, Annex C](#)

Smoke Control Systems Supervisor

Scope of Job

The ICB-certified Smoke Control Systems Supervisor (SCS-S) is responsible for overseeing and coordinating the work of the SCS Technician and planning and directing the testing and maintenance of smoke control systems from inception through completion. The SCS Supervisor ensures all testing and maintenance of smoke control systems is performed in accordance with applicable codes and standards, including the **ICB Code of Conduct**.

Prerequisites

A qualified applicant for the ICB-certified SCS Supervisor shall hold the following certifications:

1. ICB-certified Fire and Smoke Damper Supervisor, and
2. ICB-certified TABB Supervisor.

Certification Exam

The purpose of the exam is to assess competence of the tasks, knowledge, and skills identified in the Job Task Analysis. The SCS Supervisor exam is divided into six domains (broad areas of practice).

Exam Blueprint

Knowledge Domains:	% of exam	# scored
1. References for Smoke Control Systems	13%	8
2. Design Fundamentals for Smoke Control Systems	20%	12
3. Building Equipment and Controls for Smoke Control Systems	19%	11
4. Documentation for Smoke Control Systems	13%	8
5. Testing of Smoke Control Systems	27%	16
6. Coordinating SCS Technician Tasks with FLS Team Members	8%	5
Total:	100%	60

Job Task Analysis

1. References for Smoke Control Systems (13% of exam)

The ICB-certified SCS Supervisor performs the following task:

- Identifies references applicable to the operation and testing of SCS.

The ICB-certified SCS Supervisor is knowledgeable of:

- **NFPA 92-2018, Chapters 1-3 and related Annex sections:**
 - Administration of NFPA 92 as described in Chapter 1
 - Scope and purpose of the referenced publications listed in Chapter 2
 - General definitions listed in Chapter 3

2. Design Fundamentals for Smoke Control Systems (20% of exam)

The ICB-certified SCS Supervisor performs the following task:

- Applies design fundamentals to confirm design objectives were achieved.

The ICB-certified SCS Technician is knowledgeable of:

- **NFPA 92-2018, Chapter 4 and related Annex sections:**

- Design objectives
- Design basis
- Design approaches
- Design criteria
- System operation
- Stairwell pressurization systems
- Elevator pressurization systems
- Zoned smoke control
- Design objectives for combination systems
- Requirements for vestibules
- Types of doors located in smoke barriers

The ICB-certified SCS Supervisor is skilled in:

- Relating design fundamentals to results of testing to determine that design objectives were achieved.

3. Building Equipment and Controls for Smoke Control Systems (19% of exam)

The ICB-certified SCS Supervisor performs the following task:

- Verifies equipment and controls used for SCS meet NFPA requirements.

The ICB-certified SCS Supervisor is knowledgeable of:

- **NFPA 92-2018, Chapter 6 and related Annex sections:**
 - HVAC equipment
 - Smoke control systems
 - Materials
 - Electrical services installation
- **Handbook of Smoke Control Engineering – 2012, Chapter 7, pp. 191-196**
- **International Building Code, 2018 edition, Sections 909.18.8, 909.18.8.2, 1705.18, and 1705.18.2**
- **International Fire Code, 2018 edition, Section 909.18.8.2**

4. Documentation for Smoke Control Systems (13% of exam)

The ICB-certified SCS Supervisor performs the following task:

- Writes a Method of Procedure (MOP) for testing SCS.

The ICB-certified SCS Supervisor is knowledgeable of:

- **NFPA 92-2018, Chapter 7 and related Annex sections:**
 - Documentation Required
 - Detailed Design Report
 - Operations and Maintenance Manual

The ICB-certified SCS Supervisor is skilled in:

- Developing a detailed MOP from information provided by the system designer.

5. Testing of Smoke Control Systems (27% of exam)

The ICB-certified SCS Supervisor performs the following tasks:

- Verifies completeness of building construction.
- Verifies all testing was performed according to NFPA requirements.

- Manipulates HVAC equipment and controls as required for testing.

The ICB-certified SCS Supervisor is knowledgeable of:

- **NFPA 92-2018, Chapter 8 and related Annex sections:**
 - General
 - Preliminary Building Inspections
 - Component System Testing
 - Acceptance Testing
 - Testing Documentation
 - Periodic Testing
 - Modifications
- **ASHRAE 1.5-2017, Annex L:**
 - Requirements related to testing SCS

The ICB-certified SCS Supervisor is skilled in:

- Identifying where adjustments are needed to bring the SCS in compliance with designed intent.

6. Coordinating SCS Technician Tasks with FLS Team Members (8% of exam)

The ICB-certified SCS Supervisor performs the following task:

- Coordinates FLS team members in testing of SCS.

The ICB-certified SCS Supervisor is knowledgeable of:

- **NFPA 3-2018, Annex C, Responsibilities of FLS team members**