



Fire and Smoke Damper 2019

Scope and Job Task Analysis
for the
Technician and Supervisor

Requirements
for the
Contractor

Fire and Smoke Damper Technician 2019

A Fire and Smoke Damper Technician 2019 is certified for the Scope and Job Task Analysis below.

Scope

The Fire and Smoke Damper (FSD) Technician is knowledgeable about periodic inspection procedures for fire, smoke and combination fire/smoke dampers according to the guiding documents listed in the job task analysis. In addition, the FSD Technician is knowledgeable about procedures to conduct differential pressure measurements across, and force testing of stairwell egress doors.

Job Task Analysis (JTA)

The JTA identifies the tasks and related knowledge base required to perform a job. The job of a FSD Technician is divided into the 12 domains (broad areas of practice) identified below. The certification exam will assess all elements in the JTA. The % of exam dedicated to each domain is identified below.

1. Scope (4% of exam)

1.1. The ICB-certified FSD Technician:

- 1.1.1. Reviews and understands the scope of job for the FSD Technician.
- 1.1.2. Is knowledgeable of:
 - All elements included in the scope of the job.

2. Guiding Documents (4% of exam)

2.1. The ICB-certified FSD Technician:

- 2.1.1. Reviews and becomes familiar with the requirements for inspecting and testing life safety components identified in the job scope.
- 2.1.2. Is knowledgeable of:
 - The specific sections identified below in the most recent editions of:
 - International Training Institute (ITI) – Fire and Smoke Damper Technician Student Manual (P612), First Edition, 2019.
 - NFPA 80 – Standard for Fire Doors and Other Opening Protectives:
 - Chapter 3: Definitions.
 - Chapter 19: Installation, Testing, and Maintenance of Fire Dampers.
 - NFPA 92 – Standard for Smoke Control Systems:
 - Chapter 3: Definitions.
 - Chapter 8: Testing – Sections 8.4.6.1.1, 8.4.6.1.2 and 8.4.6.2.1.
 - NFPA 105 – Standard for Smoke Door Assemblies and Other Opening Protectives:
 - Chapter 3: Definitions.
 - Chapter 7: Installation, Testing, and Maintenance of Smoke Dampers.

3. Design, Plans and Specifications (8% of exam)

3.1. The ICB-certified FSD Technician:

- 3.1.1. Gathers all data required as applicable to the project.
- 3.1.2. Reads plans and specifications for HVAC systems and life safety systems.
- 3.1.3. Is knowledgeable of:

- As-built drawings.
- Acceptance testing results.
- Previous inspection and testing reports.
- Responsibilities of the HVAC contractor, architect, mechanical engineer and fire protection engineer.
- Purpose of fire and smoke dampers for life safety and protection of property.
- Symbols, definitions and abbreviations commonly used on blueprints for HVAC systems.

4. Code Requirements (8% of exam)

4.1. The ICB-certified FSD Technician:

4.1.1. Understands code requirements for fire and smoke dampers installed in HVAC systems.

4.1.2. Is knowledgeable of:

- Duties and powers of the Authority Having Jurisdiction (AHJ).
- The fundamental difference between a Code and a Standard.
- The scope and purpose of the following codes:
 - International Fire Code.
 - International Mechanical Code.
 - International Building Code.
 - NFPA 101 Life Safety Code.

5. Features and Components of Fire Dampers (10% of exam)

5.1. The ICB-certified FSD Technician:

5.1.1. Assesses condition of fire damper features, components and accessories.

5.1.2. Is knowledgeable of:

- Hourly fire resistance rating of dampers.
- Operability.
- Dynamic closure.
- Mounting orientation.
- Pressure drop.
- Space envelope.
- Sleeves.
- Heat responsive devices.
- Duct access doors.
- Locking quadrants.
- Mullions.
- Blade position indicator.
- Retaining angles.
- Solenoid releases.

6. Features and Components of Smoke Dampers (10% of exam)

6.1. The ICB-certified FSD Technician:

6.1.1. Assesses condition of smoke damper features and components.

6.1.2. Is knowledgeable of:

- Leakage rating.
- Temperature rating.
- Operability under heat.
- Flow and pressure.
- Control function.
- Actuating device.

7. Features and Components of Combination Fire/Smoke Dampers (10% of exam)

7.1. The ICB-certified FSD Technician:

7.1.1. Assesses condition of combination fire/smoke damper features, components and accessories.

7.1.2. Is knowledgeable of:

- Hourly fire resistance rating.
- Leakage.
- Temperature and operational ratings.
- Blade styles.
- Space envelope.
- Actuator.
- Override package.
- EP switch (electro-pneumatic or solenoid valve).

8. Features and Components of Ceiling Radiation Dampers (6% of exam)

8.1. The ICB-certified FSD Technician:

8.1.1. Assesses condition of ceiling radiation damper features, components and accessories.

8.1.2. Is knowledgeable of:

- Floor/ceiling or roof/ceiling assembly design.
- Types of ceiling dampers.
- Space envelope.
- Mounting configuration.
- Thermal blanket.
- Volume control/balancing devices.
- Fusible links.

9. Damper Inspection (20% of exam)

9.1. The ICB-certified FSD Technician:

9.1.1. Performs inspection and testing of life safety dampers as required in NFPA 80 and 105.

9.1.2. Documents all inspection and testing as required in NFPA 80 and NFPA 105.

9.1.3. Submits report to FSD Supervisor for review.

9.1.4. Is knowledgeable of:

- Inspection and testing procedures required in NFPA 80 and 105 related to:
 - Periodic and Operational testing.
 - Documentation procedures specified in NFPA 80 and 105.

10. Differential Pressure Across Stairwell Egress Doors (8% of exam)

10.1. The ICB-certified FSD Technician:

- 10.1.1. Verifies that the HVAC system operates as specified.
- 10.1.2. Verifies that the stairwell egress doors are in the specified position.
- 10.1.3. Measures and records differential pressure across stairwell egress doors.
- 10.1.4. Documents and compares results of testing to acceptance testing pass/fail criteria.
- 10.1.5. Submits report to FSD Supervisor for review.
- 10.1.6. Is knowledgeable of:
 - The tools and equipment commonly used to measure differential pressure.
 - The requirements in the following sections of the most recent version of NFPA 92:
 - Chapter 8 – 8.4.6.1.1, 8.4.6.1.2 and 8.4.6.2.1.
 - The following conditions under which the FSD Technician conducts limited testing of egress doors in stairwell pressurization systems:
 - Testing of stairwell pressurization systems is performed only when acceptance testing procedures are specified.
 - Acceptance testing procedures and pass/fail criteria shall be obtained from the design documents.
 - Activation of the stairwell pressurization system is performed by building operating personnel knowledgeable in the operation of the building smoke control system.
 - All testing is to be performed in presence of building operating personnel knowledgeable in the operation of the building smoke control system.

11. Force Testing of Stairwell Egress Doors (8% of exam)

11.1. The ICB-certified FSD Technician:

- 11.1.1. Verifies that the HVAC system operates as specified.
- 11.1.2. Verifies that the stairwell egress doors are in the specified position.
- 11.1.3. Measures and records the force necessary to open stairwell egress doors.
- 11.1.4. Documents and compares results of testing to acceptance testing pass/fail criteria.
- 11.1.5. Submits report to FSD Supervisor for review.
- 11.1.6. Is knowledgeable of:
 - The tools and equipment commonly used to measure door opening force.
 - The requirements in the following sections of the most recent version of NFPA 92:
 - Chapter 8 – 8.4.6.1.1, 8.4.6.1.2 and 8.4.6.2.1.
 - The following conditions under which the FSD Technician conducts limited testing of egress doors in stairwell pressurization systems:
 - Testing of stairwell pressurization systems is performed only when acceptance testing procedures are specified.
 - Acceptance testing procedures and pass/fail criteria shall be obtained from the design documents.
 - Activation of the stairwell pressurization system is performed by building operating personnel knowledgeable in the operation of the building smoke control system.

- All testing is to be performed in presence of building operating personnel knowledgeable in the operation of the building smoke control system.

12. Safe Working Practices (4% of exam)

12.1. The ICB-certified FSD Technician:

12.1.1. Follows industry safety standards when performing the job.

12.1.2. Is knowledgeable of:

- Safe working practices while inspecting and testing fire, smoke and combination fire/smoke dampers.
- OSHA regulations related to inspecting and testing of fire, smoke and combination fire/smoke dampers.

Fire and Smoke Damper Supervisor 2019

A Fire and Smoke Damper Supervisor 2019 is certified for the Scope and Job Task Analysis below.

Scope

The ICB-certified Fire and Smoke Damper (FSD) Supervisor oversees and coordinates the work of the FSD Technician and plans and directs testing and inspection projects from inception through completion – ensuring that procedures follow requirements of applicable codes and standards.

Job Task Analysis (JTA)

The JTA identifies the tasks and related knowledge base required to perform a job. The job of a FSD Supervisor is divided into the six domains (broad areas of practice) identified below. The certification exam will assess all elements in the JTA. The % of exam dedicated to each domain is identified below.

1. Codes and Standards

1.1. The FSD Supervisor reviews applicable codes and standards. **(12% of exam)**

1.1.1. Is knowledgeable of:

- Requirements in local and state codes.
- Requirements in the International Fire Code.
- Differences in requirements of building codes and post-occupancy codes.
- How current and historical codes apply within a specific local jurisdiction.
- Requirements in specified sections of the following standards:
 - NFPA 1 – sections 12.4, 12.4.1 and 12.9.5.4.
 - NFPA 80 – chapters 3 and 19.
 - NFPA 92 – chapters 3, 7 and 8 (8.4.6.1.1, 8.4.6.1.2 and 8.4.6.2.1).
 - NFPA 101 – chapters 3, 7, 8 and 9.
 - NFPA 105 – chapters 3 and 7.

1.2. The FSD Supervisor identifies who the AHJ is for the local jurisdiction. **(4% of exam)**

1.2.1. Is knowledgeable of:

- The authority who enforces the local codes.
- The code enforcement structure within a specific local jurisdiction.
- The FLS testing and inspection enforcement structure for the local jurisdiction.

2. Construction and Design Documents

2.1. The FSD Supervisor reviews applicable construction and design documents. **(7% of exam)**

2.1.1. Is knowledgeable of:

- Blueprints – mechanical, architectural and as-built conditions.
- Specifications used when the building was constructed/remodeled.
- Operations & maintenance manual of smoke control system.
- How fire compartmentalization plans are compared with HVAC mechanical blueprints.
- Blueprint reading and application of specifications.

2.2. The FSD Supervisor locates and documents smoke and fire barriers. **(7% of exam)**

2.2.1. Is knowledgeable of:

- Methods to identify and locate smoke and fire barriers.
- Identifiers used on blueprints for the following components:
 - Smoke and fire barriers.
 - Smoke control zoning plans.
 - Fire doors and egress routes.
 - Shelter in place vs evacuation.
 - HVAC systems and symbols.
- Identifiers used in the field for smoke and fire barriers for the following components:
 - Fire doors.
 - Posted egress routes.
- Requirements in the specific sections of the following standard:
 - NFPA 101 – sections 8.3 and 9.2.

3. Method of Procedure (MOP)

3.1. The FSD Supervisor identifies how operational, acceptance and periodic testing apply. **(9% of exam)**

3.1.1. Is knowledgeable of:

- Standards adopted by a specific local jurisdiction as law.
- Requirements for testing in the specified sections of the following standards:
 - NFPA 1 – sections 12.4, 12.4.1, 12.9.5.4.
 - NFPA 80 – chapter 19.
 - NFPA 92 – chapters 7 and 8 (8.4.6.1.1, 8.4.6.1.2, 8.4.6.2.1).
 - NFPA 105 – chapter 7.
- Requirements of the damper manufacturer for testing.
- Previous FLS testing and inspection reports.
- Scope of work related to inspecting and testing.
- Methods for interpreting codes and standards.
- State, county and city regulations related to FLS damper inspection and testing.

3.2. The FSD Supervisor determines logistics for the scope of work. **(8% of exam)**

3.2.1. Is knowledgeable of:

- Building operations management.
- HVAC systems operations and types.
- FLS control operations and types.
- How to research permit records for a specific local municipality.
- Which building staff to interview for documentation procedures and previous testing and inspection reports.
- Documentation requirements of specified sections of the following standards:
 - NFPA 80 – Chapter 19.
 - NFPA 92 – Chapter 8 (8.4.6.1.1, 8.4.6.1.2, 8.4.6.2.1).
 - NFPA 105 – Chapter 7.

3.3. The FSD Supervisor writes a Method of Procedure (MOP). **(11% of exam)**

3.3.1. Is knowledgeable of:

- Building code requirements related to HVAC FLS testing and inspection.
- Requirements for operational, acceptance and periodic testing and inspection procedures in the specific section of the following standards:
 - NFPA 80 – chapter 19.
 - NFPA 92 – chapters 7 and 8 (8.4.6.1.1, 8.4.6.1.2, 8.4.6.2.1).
 - NFPA 105 – chapter 7.
- Periodic testing for fusible-link operated dampers.
- Periodic testing for dampers that do not use fusible link.
- Measuring the pressure differential across stairwell egress doors.
- Measuring the force required to open stairwell egress doors.
- FLS damper testing during the construction phase.
- FLS damper testing during the post-construction phase.

4. Arranging for Testing and Inspection

4.1. The FSD Supervisor submits MOP to AHJ and customer. **(4% of exam)**

4.1.1. Is knowledgeable of:

- Document submission procedures specific to the local jurisdiction.
- Roles and responsibilities of the AHJ as required by the local jurisdiction.
- Contractual requirements for the project.

4.2. The FSD Supervisor coordinates with FLS contractor and/or building engineer. **(7% of exam)**

4.2.1. Is knowledgeable of:

- Details of the MOP.
- Integration of damper actuator with electrical circuits and/or fire alarm panels.
- Existing job site conditions .
- Requirements for testing and inspection in specific sections of the following standards:
 - NFPA 1 – sections 12.4, 12.4.1, 12.9.5.4.
 - NFPA 80 – chapter 19.
 - NFPA 92 – chapters 7 and 8 (8.4.6.1.1, 8.4.6.1.2, 8.4.6.2.1).
 - NFPA 105 – chapter 7.
- Who is responsible for hiring the FLS contractor.
- Who is responsible for establishing testing and inspection dates/hours.
- The specific conditions under which the FSD Technician conducts limited testing and inspection of stairwell pressurization systems.
- Special access needs.
- Damper inspection and testing processes.
- Site-specific testing and inspection procedures.
- Contingency planning for failures and/or repairs.

5. Supervising the FSD Technician

5.1. The FSD Supervisor verifies certification status of the FSD Technician. **(3% of exam)**

5.1.1. Is knowledgeable of:

- Scope of job for the FSD Technician as identified in the ITI Certification Manual for Technicians.
- Requirements of the FSD Technician as identified in the ICB Code of Conduct.
- The ICBcertified.com portal to verify the technician certification is valid/current.
- How to access ICB and ITI certification manuals online.

5.2. The FSD Supervisor prepares and provides safety procedures. **(7% of exam)**

5.2.1. Is knowledgeable of:

- OSHA regulations related to site-specific conditions.
- Requirements in NFPA 70E to reduce exposure to electrical hazards.
- Safety regulations and policies.
- Developing site-specific procedures to mitigate hazards.
- Methods for safely manipulating control signal for FLS components.

5.3. The FSD Supervisor supervises the work of the FSD Technician. **(9% of exam)**

5.3.1. Is knowledgeable of:

- Details of the MOP.
- Proposed scope of work.
- Requirements for testing and inspection in specific sections of the following standards:
 - NFPA 1 – sections 12.4, 12.4.1, 12.9.5.4.
 - NFPA 80 – chapter 19.
 - NFPA 92 – chapters 7 and 8 (8.4.6.1.1, 8.4.6.1.2, 8.4.6.2.1).
 - NFPA 105 – chapter 7.
- Scope of job for the FSD Technician, as identified in the ITI Certification Manual for Technicians.
- Responsibilities of the FSD Technician, as identified in the ICB Code of Conduct.

6. Documentation

6.1. The FSD Supervisor prepares the report and FLS blueprints for AHJ approval. **(12% of exam)**

6.1.1. Is knowledgeable of:

- Details of the MOP.
- Proposed scope of work.
- Commonly used symbols and abbreviations for FLS blueprints.
- Documentation and recordkeeping requirements of applicable codes and standards.
- The meaning of "Qualifying Employment", as defined in the ICB Certification Manual.
- Responsibilities of ICB-certified personnel, as identified in the ICB Code of Conduct.
- Methods to locate and research online documents.
- Commonly used symbols and abbreviations to FLS blueprints.

Fire and Smoke Damper Contractor 2019

A Fire and Smoke Damper Contractor 2019 employs Fire and Smoke Damper Technicians and Supervisors who are certified for the 2019 Scope and Job Task Analysis.

1. Requirements for ICB-certified contractors:

- 1.1. Contractors will ensure that a Supervisor oversees and coordinates projects involving work pertaining to the scope of the certification scheme, and that those projects are performed in accordance with applicable standards and procedures.
- 1.2. Contractors must employ Technicians and Supervisors to the extent required for certification and should seek to employ enough Technicians and Supervisors to perform all work in the scope of the certification.
- 1.3. Contractors and Supervisors shall only certify projects where the work was performed by certified Technicians employed by their own firm.

2. Steps for identifying the Scope and Knowledge Base for which Fire and Smoke Damper Technicians and Supervisors are certified:

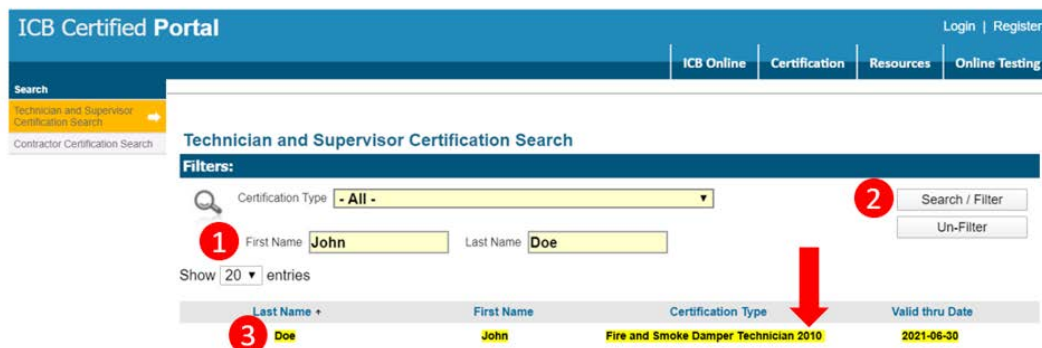
➤ Go to:

➤ Click on: 

➤ 1 Enter name: First Name Last Name

➤ 2 Click on:

➤ 3 Valid certification will be displayed



The screenshot shows the ICB Certified Portal interface. At the top, there are navigation links for 'Login | Register', 'ICB Online', 'Certification', 'Resources', and 'Online Testing'. A search bar is visible on the left. The main content area is titled 'Technician and Supervisor Certification Search'. Under the 'Filters:' section, there is a search icon, a 'Certification Type' dropdown menu set to '- All -', and a 'Search / Filter' button. Below this, the search criteria are displayed: 'First Name: John' and 'Last Name: Doe'. A 'Show 20 entries' dropdown is also present. The search results are shown in a table with columns: 'Last Name', 'First Name', 'Certification Type', and 'Valid thru Date'. A single result is displayed: 'Doe', 'John', 'Fire and Smoke Damper Technician 2010', and '2021-06-30'. A red arrow points to the 'Fire and Smoke Damper Technician 2010' certification type.

Last Name	First Name	Certification Type	Valid thru Date
Doe	John	Fire and Smoke Damper Technician 2010	2021-06-30