

MINNESOTA DEPARTMENT OF PUBLIC SAFETY STATE FIRE MARSHAL DIVISION

Certified Managing Employee and Journeyman Sprinkler Fitter Candidate Exam Information Booklet

Introduction

The Managing Employee / Journeyman Sprinkler Fitter examinations measure how well a candidate has mastered the fundamentals of the trade and a candidate's knowledge of Minnesota Statutes, Administrative Rules, the State Fire Code, and applicable national standards.

The following pages contain information concerning examination content, references, materials, and documents required at the examination site. There is additional information on how to prepare for the examination, and rules that must be followed when the examination is being taken.

Licensure / Certification Requirements

Minnesota Statutes, Chapter 229M and Minnesota Rules, Chapter 7512 require the licensing and certification of the fire protection industry by the Minnesota Department of Public Safety. A fire protection system is defined as a sprinkler, standpipe, hose system or other special hazard system used only for fire protection purposes, and that is composed of an integrated system of underground and overhead piping connected to a potable water source.

Licensure is required for the following fire protection system-related jobs:

- **Fire Protection Contractor:** A person who contracts to sell, design, install, modify, alter or inspect a fire protection system or its parts or related equipment.
- **Designer Contractor:** A person who contracts to design a fire protection system or its parts or related equipment.
- **Limited Contractor:** A person who performs fire protection-related work on premises or that part of premises actually occupied by the contractor and owned by the contractor or leased by the contractor for a period of at least one year. No insurance or bond is required.

Certification is required for the following fire protection system-related jobs:

- **Fire Protection Managing Employee:** a person who is employed by a contractor, who meets the requirements for a managing employee as contained in Minn. Rules, parts 7512.0600 to 7512.1300, and who supervises the performance of all fire protection-related work by the contractor.

To be certified in the fire protection industry as a managing employee, a candidate is required to be at least 18 years of age, meet the requirements listed in Minn. Rules, part 7512.1300 and achieve a passing score on the required Managing Employee examination.

- **Journeyman Sprinkler Fitter:** a person who is certified as competent to engage in installing, connecting, altering, repairing or adding to a fire protection system for and under the supervision of a fire protection contractor.

To be certified in the fire protection industry as a journeyman sprinkler fitter, a candidate is required to be at least 18 years of age, meet the requirements listed in Minn. Rules, part 7512.1700 and achieve a passing score on the required trade examination.

- **Limited Journeyman Sprinkler Fitter:** Journeyman sprinkler fitters with limited certificates are limited to working on premises or that part of the premises actually occupied by the journeyman's employer and owned by the employer or leased by the employer for a period of at least one year. A journeyman with a limited certificate is limited to working in areas of competence, as certified and documented by the journeyman's employer. A journeyman with a limited certificate may not perform fire protection-related work unless the journeyman is under the supervision of the employer's managing employee.

Exemptions:

The following individuals are not required to obtain a license as a fire protection contractor:

- Persons who sell fire protection system parts or related equipment to a licensed contractor;

- Persons who install or service a special agent fire suppression system that is not connected to a potable water source. (A special agent fire suppression system uses extinguishing agents other than water and includes such systems as dry chemical systems, carbon dioxide systems, halogenated and gaseous agent systems, and wet chemical systems.);
- Persons acting in an official capacity as a building official, fire official, or insurance inspector;
- Person licensed as a plumber under Minnesota Statutes, section 326.40 ('Such a person does not need a contractor license to sell, design, install, modify, or inspect a standpipe or hose system only.);
- Persons licensed as a professional engineer under Minnesota Statutes, section 326.03, who are competent in fire protection system design. (Such a person does not need a fire protection contractor license to perform activities authorized by the professional engineer license.);
- Persons licensed as an alarm and communication contractor under Minnesota Statutes, section 326.2421, or as a Minnesota licensed electrical contractor under Minnesota Statute 326.242 subd. 6. (Such a person does not need a fire protection contractor license to perform activities authorized by the alarm and communication or Minnesota electrical contractor license.).

NOTE: A person does **not** need a fire protection contractor license to maintain a fire protection system. "Maintain" means the scheduled activities to keep a fire suppression system operable. "Maintain" also means to make emergency repairs to correct an impairment of a fire protection system until such time as a licensed fire protection contractor can do permanent repairs.

Eligibility:

Candidates are eligible to sit for the examination, provided they are at least 18 years of age and have met all requirements listed in Minn. Rules, part 7512.1300 for managing employees or Minn. Rules, part 7512.1700 for journeyman sprinkler fitters.

- Eligibility Criteria – Managing Employee (One of the following):
 - 10,000 hours of experience in designing, installing, modifying, or inspecting fire protection systems, or
 - Level 3 or 4 certification by the National Institute for Certification in Engineering Technologies (NICET), in the field of fire protection systems, and in the sub-field of automatic sprinkler system layout, or
 - Licensure as a professional engineer under MN Statutes, Section 326.03, and is competent in fire protection system design.
- Eligibility Criteria – Design Contractor:
 - Level 4 certification by the National Institute for Certification in Engineering Technologies (NICET), in the field of fire protection, and in the sub-field of automatic sprinkler system layout.
- Eligibility Criteria – Journeyman Sprinkler Fitter (One of the following):
 - 8,000 hours of experience in performing fire protection related work, or
 - Completion of a sprinkler fitter program where the person was regularly engaged in learning the trade under the direct supervision of a licensed fire protection contractor or journeyman sprinkler fitter, while registered with a state or federal approval agency.

Candidates must provide documentation, acceptable to the State Fire Marshal Division, of their eligibility at the time of application for examination. The State Fire Marshal Division will verify eligibility for examination from the documentation provided prior to issuing a confirmation letter.

Acceptable Documentation – Journeyman Sprinkler Fitter (provide one of the two – documentation of experience hours or completion of Sprinkler Fitter Program):

1. Hours of Experience:
 - Payroll records documenting at least 8,000 hours of experience in fire protection-related work and attested to by the Managing Employee, (NOTE: W-2 records are not acceptable as they do not document that the hours were "fire protection-related work"); or
 - Pension reports documenting at least 8,000 hours of fire protection related work; or
 - Insurance Benefit Statement documenting at least 8,000 hours of fire protection related work.

2. Completion of Sprinkler Fitter Program:
 - o Copy of certificate of completion from a sprinkler fitter program registered with a state or federal approval agency; or
 - o Statement of completion from a state or federal approval agency.

Acceptable Documentation – Managing Employee and Design Contractor Candidates (provide one of the three):

1. Hours of Experience - Payroll records documenting at least 10,000 hours and attested to by the owner of the company. (NOTE: W-2 records are not acceptable as they do not document that the hours were “fire protection-related work”); or
2. Certification - National Institute for Certification in Engineering Technologies - Copy of NICET certification documenting appropriate level of certification; or
3. Licensed Engineers - Copy of engineering license issued by the State of Minnesota.

Registering for the Examination

Examination application forms may be obtained from:

Minnesota State Fire Marshal Division
445 Minnesota Street, Suite 145
St. Paul, MN 55101-5145
(651) 201-7200
or, the State Fire Marshal Division website

Candidates must answer all questions and provide all information required on the application form. Failure to answer any question or attach the required documents will result in the application being returned. Applications **MUST** be signed.

Candidates should mail the application and payment (**certified check, cashier’s check or money order MADE PAYABLE TO: MN STATE FIRE MARSHAL DIVISION**) to the State Fire Marshal Division. **Personal checks will not be accepted.**

EXAMINATION FEE: \$55.00

The State Fire Marshal Division must receive the form before the cutoff date (usually about 14 days before the examination date) for the selected examination date. Candidates should submit the examination application early. Seating may be limited by room size. Registrations will be accepted on a first come first served basis.

Late and overflow applications will be scheduled for the next available examination.

Candidates with Special Needs

The State Fire Marshal Division complies with the *Americans with Disabilities Act*. If a physical or learning disability prevents a candidate from taking the examination under normal conditions, special arrangements may be requested. The requesting candidates should submit documentation of the disability three weeks in advance of the scheduled examination to the State Fire Marshal Division to help determine the necessary special arrangements.

Confirmation Letters

The State Fire Marshal Division sends a confirmation letter to each candidate whose application form has been received and accepted by the Division before the examination deadline. The confirmation letter provides the specific date, time, and location of the examination.

Each approved candidate will be sent a Confirmation Letter approximately five business days before the examination. If the Confirmation Letter is lost or has not been received by three business days before the examination, the candidate should call the State Fire Marshal Division at (651) 201-7200. The candidate **MUST** show a valid confirmation letter to take the examination.

A candidate must notify the State Fire Marshal Division of any change of address.

A candidate who does not appear on the date and time shown on their confirmation letter forfeits all fees.

Only pre-registered candidates are admitted to the examination. Walk-in candidates will **NOT** be admitted.

Rescheduling

Once scheduled for an examination, the candidate **MUST** take the examination on the scheduled date, or call the State Fire Marshal Division before the cutoff date (usually about 14 days before the examination date). If space is available on another examination date, the examination can be rescheduled.

Fees are not refundable unless requested prior to the cutoff date (usually 14 days) before the examination date.

Trade Examination Content

The Managing Employee and Journeyman Sprinkler Fitter trade examinations are based on Minnesota Statutes, Administrative Rules, the Minnesota State Fire Code, applicable national standards, and trade specific information on materials, practices and terminology.

To be certified as a journeyman sprinkler fitter, candidates need to pass the Journeyman Sprinkler Fitter trade examination (70% score or higher).

To be certified as a managing employee, candidates need to pass the Managing Employee examination (70% score or higher).

Reference Materials

The following references are used to develop examination questions. Some questions will be based on field experience and knowledge of trade practices. Therefore, questions are not limited to these references. If a revised or updated version of any reference (other than Code books) becomes available before the examination date, the updated reference also will be applicable to the examination questions. **Note:** The examinations are based on code book editions noted in the reference list.

National Fire Protection Association Standards – Available from the National Fire Protection Association, 11 Tracey Avenue, Avon, MA 02322:

- NFPA 13 - *Installation of Sprinkler Systems*, 2010,
- NFPA 13D - *Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 2010,
- NFPA 13R - *Sprinkler Systems in Residential Occupancies Up To and Including Four Stories in Height*, 2010,
- NFPA 14 - *Installation of Standpipe and Hose Systems*, 2010,
- NFPA 20 - *Centrifugal Fire Pumps*, 2010,
- NFPA 22 - *Water Tanks for Private Fire Protection*, 2008,
- NFPA 24 - *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, 2010,
- NFPA 25 - *Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection*, 2011.

Minnesota Fire Protection Licensing Statutes and Rules:

- Minnesota Statutes, Chapter 299M
- Minnesota Rules, Chapter 7512

Examination Day

Each examination begins promptly at the time shown on the candidate's Admission Letter. Candidates should plan to arrive early to check in on time. **A candidate who does not appear for the scheduled examination forfeits all examination fees and must re-register for another examination date.**

What to Bring to the Examination

Each Candidate must bring the following items to the examination:

- Confirmation Letter;
- Government-issued photo identification, such as a driver's license, military identification, passport or state identification card;
- Two sharpened No. 2 pencils with erasers, and
- A silent, nonprinting, nonprogrammable calculator. Calculators capable of alphabetic entry are not allowed.

Note: Managing employee examination may require performance of hydraulic calculations.

Examination Rules and Information

The candidate should read this section carefully to better understand the rules of the examination.

CLOSED BOOK EXAMINATION: The examination is a closed book exam. Reference books or materials, notes, or any other materials similar in content or intent are **NOT** permitted in the examination room.

CALCULATORS: Calculator use is permitted only if the machine is silent, cordless, nonprinting, and is small enough not to infringe on other candidates' space. Computers, programmable calculators or calculators with data-entry capability (keys with letters of the alphabet), construction or electrician calculators are **NOT** allowed.

A candidate who is unsure whether a particular calculator is appropriate should bring an additional simple six-function calculator to the exam site, in case the preferred calculator is not allowed.

SCRATCH PAPER: **NO** paper of any sort is to be brought to the examination. Candidates may use the pages in their exam booklets for scratch paper.

NOTE TAKING: **NO** part of the examination may be copied or reproduced in any manner. **NO** part of the examination may be removed from the examination room.

TALKING AND SMOKING: **NO** talking or smoking is permitted in the examination room. The proctor will direct requesting candidates to areas where smoking is permitted.

ELECTRONIC DEVICES: Pagers, portable computers, alarm watches and cellular telephones (including smartphones) are **NOT** allowed in the examination room. Personal radios/tape players are **NOT** allowed in the examination room.

EXAM QUESTIONS: All test questions are the property of the Minnesota State Fire Marshal Division. It is forbidden to copy, reproduce, record, distribute or display these test questions by any means, in whole or in part, without our written permission.

QUESTIONS:

1. Proctors will not answer technical questions of any sort. Candidates who do not understand a question on the examination should answer the question to the best of their abilities.
2. If a candidate thinks there is an error in a question, the proctor should be notified. The candidate will be given a Question Challenge Form to complete. State Fire Marshal Division staff will review all Question Challenge Forms for a particular examination before scores are issued for that examination.
3. Candidates should answer all questions. There is no penalty for guessing.

Score Information

Managing Employee, Journeyman Sprinkler Fitter and Design Contractor examination candidates must receive a minimum score of **70 percent** on the trade examination.

Candidates are notified of the examination results by first-class mail approximately three weeks after the examination. **To ensure confidentiality, official test scores are NOT disclosed over the telephone or sent by fax.** Candidates should not contact the State Fire Marshal Division for test results. Candidates who have not received their scores by four weeks after the examination should contact the State Fire Marshal Division at 651-201-7200.

Candidates who pass the examination will receive their score and instructions for obtaining certification approximately three weeks after the examination. Candidates must retain the passing score letter and submit it to the State Fire Marshal Division to receive certification.

A candidate who does **NOT** pass the examination will receive their score and instructions for retaking the examination.

Reapplication

Candidates who do not pass the examination must re-apply by submitting a new application and fee. **Minn. Rules, part 7512.2400, subpart 5. Retesting.** An examinee who fails an examination one time may repeat the examination at the next scheduled exam date (usually 3 months later). An examinee who fails the examination more than once may not repeat the examination for 180 days (6 months) from the date of the failed examination.

Application for Certification

Managing Employee

To obtain certification as a managing employee, candidates must pass the Managing Employee examination, complete an application, and submit the appropriate fee.

Journeyman Sprinkler Fitter

To obtain certification as a journeyman sprinkler fitter, candidates must pass the Journeyman Sprinkler Fitter examination, complete an application, and submit the appropriate fee.

Application for Certification Forms

Applications for Certification can be obtained from:

Minnesota State Fire Marshal Division
445 Minnesota Street, Suite 145
St. Paul, MN 55101-5145
Phone: (651) 201-7200

or the State Fire Marshal Division website

Sample Questions

The following examples are intended to illustrate the type of questions that appear on the examination. These sample questions will not appear on any of the examinations. Candidates should read all four possible answers to a question before selecting one.

1. According to NFPA 13, when a pressure tank for a sprinkler system is installed at a level below the highest sprinklers served, the pressure gauge shall maintain a pressure of 75 psi plus 3 times the pressure caused by the column of water in the system above the tank bottom.

What approximate gauge pressure would be required when the bottom of the tank is installed 16' below the highest sprinklers in the system?

(A) 82 psi
(B) 89 psi
(C) 96 psi
(D) 102 psi
2. Provisions shall be made to indicate the flow of water in a sprinkler system under all of the following conditions **EXCEPT**

(A) movement in the system due to a surge.
(B) a leak equal to the output of the smallest sprinkler in the system.
(C) discharge by one or more sprinklers.
(D) flow of water equal to the output of the largest sprinkler in the system.
3. A full flow trip test of each dry pipe valve should take place either when the system is altered, or every

(A) 6 months.
(B) year.
(C) 2 years.
(D) 3 years.

Answer Key: (1) C, (2) A, (3) D

Minnesota State Fire Marshal Division

445 Minnesota St. – Suite 145
St. Paul, Minnesota 55101-5145

Candidate Examination Application Form

Candidate Information (Please Print)		
Last Name:	First Name:	MI:
Address:		
City:	State:	ZIP Code:
Company Name:		
Daytime Phone:	Email:	
Examination Request		
<input type="checkbox"/> Journeyman Sprinkler Fitter <input type="checkbox"/> Managing Employee		
Examination Date and Location Request		
Exam Date:	Exam Location:	
Documentation		
Include required documentation of eligibility. See Page 3 of the State Fire Marshal Division's Candidate Information Booklet for acceptable means of documentation.		
Payment Information		
Exam Fee: \$55.00 Payable to MN State Fire Marshal Division	Money Order, Cashier's Check or Certified Check Personal checks will not be accepted.	
Mail to: MN State Fire Marshal Division, 445 Minnesota St. – Suite 145, St. Paul, Minnesota 55101-5145		
Signature		
By signing and submitting this form, I certify that I am the candidate named above. I further agree to comply with all examination rules and regulations.		
Signature of Candidate:		Date:

All data requested on a Candidate Examination Application Form is required by law or administrative rule. The information is used to identify your eligibility to write the examination. Failure to provide required information may result in denial of your application. All information on the application is public and copies of the application or its information may be provided to anyone upon request.

SFM Office Use Only

Check No:	Amt. of Check:	Name on Check:	Date Rec'd:
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Minnesota State Fire Marshal Division

445 Minnesota St. – Suite 145
St. Paul, Minnesota 55101-5145

Documentation of Eligibility for Examination

NOTE: Only complete this form if your documentation of eligibility is "Hours of Experience". W-2 records are not acceptable as they do not document that the hours were "fire protection-related work".

Candidate Information (Please Print)		
Last Name:	First Name:	MI:
Address:		
City:	State:	ZIP Code:
Company Name:		
Daytime Phone:	Email:	

Hours engaged in performing fire protection-related work:	No. of Hours	
Fire protection-related work was performed from/to:	Month/Year	Month/Year

Signature - Managing Employee for Journeyman Fitters or Company Owner for Managing Employees	
"I hereby attest that the above information is true and correct".	
Signature:	Date:

Notary
State of _____ County of _____
Signed and sworn to (or affirmed) before me on _____ by _____ (Name of Owner or Managing Employee)
_____ (Signature of Notarial Officer)
My Commission Expires: _____
(Affix Seal)

All data requested on a Candidate Examination Application Form is required by law or administrative rule. The information is used to identify your eligibility to write the examination. Failure to provide required information may result in denial of your application. All information on the application is public and copies of the application or its information may be provided to anyone upon request.

SFM Office Use Only			
Check No:	Amt. of Check:	Name on Check:	Date Rec'd: