



LEGACY

— FIRE PROTECTION —

PROTECTING
PEOPLE
PROPERTY
AND
PEACE OF MIND

BASIC FIRE SPRINKLER MAINTENANCE GUIDE

PRACTICAL KNOWLEDGE. SAFER BUILDINGS. STRONGER COMMUNITIES.

This guide provides maintenance teams with easy-to-understand information to identify, maintain, and help protect fire sprinkler systems. Designed for schools, commercial buildings, apartments, and a variety of facilities, it includes clear visuals, helpful tips, and practical steps to keep your systems safe and reliable.



LEARN
THE BASICS



RECOGNIZE
PROBLEMS



TAKE
THE RIGHT STEPS



KEEP
PEOPLE SAFE



SCHOOLS



COMMERCIAL



APARTMENTS



HOTELS



CHURCHES



AND MORE

FREE RESOURCES ONLINE

Scan the QR code for additional guides, checklists, and training resources.



CHECKLISTS



TRAINING



GUIDES



FORMS



SCAN HERE



LEGACY

— FIRE PROTECTION —

Fire Sprinkler • Fire Alarm
Fire Extinguishers • Hood Suppression



405-410-7600



john@legacyfirepro.com



legacyfirepro.com

Copyright Page

© 2026 Legacy Fire Protection. All Rights Reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means — electronic, mechanical, photocopying, recording, or otherwise — without prior written permission from the publisher.

Publisher: Legacy Fire Protection
www.Legacyfirep.com
John@Legacyfirep.com

Disclaimer: This handbook is intended for general educational and training purposes only. It is not a substitute for professional fire protection services, licensed inspections, engineering analysis, or compliance with NFPA standards or local Authority Having Jurisdiction (AHJ) requirements. Always follow NFPA 13, NFPA 25, local codes, and the instructions of licensed fire protection contractors and fire officials.

Limit of Liability: While every effort has been made to ensure accuracy, the author and publisher assume no responsibility for errors, omissions, or damages resulting from the use of this information.

Important Safety Notice

Working with fire sprinkler systems requires caution, training, and proper procedures. This handbook teaches general concepts, but it does NOT authorize any individual to perform licensed fire protection work.

✓ **NFPA Standards Come First**

NFPA 13 and NFPA 25 override any general guidance in this handbook.

✓ **The AHJ Has Final Authority**

Local fire marshals or fire officials determine what is acceptable.

✓ **Sprinkler Systems Are Life-Safety Equipment**

Improper operation may disable the system or cause serious damage.

✓ **Only Licensed Contractors May:**

- Install or modify systems
- Replace components
- Repair impairments
- Perform annual NFPA 25 inspections

Dedication

This handbook is dedicated to the men and women in the fire protection and building maintenance industries — those who work tirelessly behind the scenes to keep people and property safe. Your commitment to life safety, long nights in cold riser rooms, and your attention to every valve, gauge, and sprinkler head are what prevent tragedy and save lives every day. May this book serve as a practical guide and a reminder that your work truly matters.

Acknowledgments

Special thanks to the instructors, inspectors, and technicians whose real-world experience helped shape this handbook. Your input ensures that this training remains accurate, applicable, and field-ready.

With gratitude,

Partner Fitter University

Fitter University was created to help maintenance personnel, apartment staff, and safety teams understand fire sprinkler systems clearly and practically.

We provide online courses, hands-on demonstrations, downloadable checklists, and real-world guidance designed for apartment communities.

Our mission: Build Confidence. Build Competence. Build Safety.

For more training: Partnership
www.FitterUniversity.com
training@fitteruniversity.com

How to Use This Handbook

This handbook is designed to make apartment fire sprinkler training simple, practical, and easy to use — even for beginners.

Each chapter includes:

- Chapter lesson
- Recap section
- Review quiz
- Worksheet
- QR code for online training videos

Recommended Training Flow:

- 1 Read the chapter
- 2 Complete the worksheet
- 3 Take the review quiz
- 4 Watch the video
- 5 Discuss with maintenance team
- 6 Move to next chapter

Preface & Introduction

— *The Fitter University Team*

Fire sprinkler systems save lives and property — but they rely on consistent, knowledgeable care to function as designed. This handbook was developed to provide apartment maintenance teams, property managers, and safety professionals with a clear, NFPA-based guide for inspection readiness, system operation, and emergency response.

Too often, maintenance personnel inherit complex systems without the training or tools to understand them. This guide simplifies that challenge. It breaks down the essential principles of wet, dry, and preaction sprinkler systems, explains how to identify key components, and outlines the procedures needed to prevent system damage, inspection failures, and catastrophic water loss. Each chapter focuses on real-world scenarios, from winter freeze protection to emergency shut-off procedures, offering practical steps you can use immediately on site.

Whether you're new to fire protection or experienced in maintenance, this handbook will serve as both a teaching tool and a quick reference resource for day-to-day operations.

This publication was inspired by the belief that **knowledge builds safety** — and that even the smallest maintenance task can prevent a disaster when performed with understanding and care.

Welcome to the next step in building confidence, competence, and community safety.

Fitter University | Johnathan@fitteruniversity.com | www.FitterUniversity.com

HOW TO USE THIS HANDBOOK

This handbook was created to give maintenance personnel, facility staff, property managers, and new employees a practical understanding of basic fire sprinkler systems.

You do not need to be a fire sprinkler technician to benefit from this book.

The goal is to help you recognize the equipment in your building, understand what it does, identify common problems, and know what steps to take when something goes wrong.

Use This Book To Learn:

- How wet and dry sprinkler systems work
- How to identify sprinkler control valves
- What gauges, drains, switches, and alarms do
- How to locate and understand the fire department connection
- What sprinkler heads should and should not look like
- Common sprinkler system deficiencies
- What to check during routine maintenance walkthroughs
- How to prepare sprinkler systems for freezing weather
- What to do when a sprinkler pipe or head is leaking
- What to do when a sprinkler activates
- What information to give your fire sprinkler contractor
- How to keep useful sprinkler system records

TABLE OF CONTENTS

ApartmentFireSprinklerSystems Handbook

Front Matter	
• Dedication & Acknowledgments	3
• Preface & Introduction	4
• How to Use This Handbook	5
• Free Online Course Access	7
Section 1 — Fire Sprinkler System Fundamentals	10
• Understanding Apartment Fire Sprinkler Systems	15
• How Wet Systems Work	16
• How Dry Systems Work	16
• How Anti Freeze Systems Work	17
• System Components Overview	18
Section 2 — Wet System Operations	27
• Locating the Riser Room	32
• Understanding Riser Room Layouts	33
• How to Shut Down a System Safely •	34
Recognizing Alarm Conditions	34
• Understanding the Shut Off Valves	37
• INCIDENT REPORT FORM	43
Section 3 – Emergency Shut-Off & Response	54
• WHAT NOT TO DO	60
• BE CAREFUL AROUND SPRINKLER HEADS	62
• Keep It Clear	63
• PAINTED OR MISSING ESCUTCHEONS	65
• DUSTY / LOADED SPRINKLER HEADS	66
Section 4 — Escutcheon (ESC) Replacement	63
• Understanding Escutcheons	71
• WHY ESCUTCHEONS (ESCs) MATTER	76
• Safe Replacement Steps	77
• Storage and Readiness	78

Chapter 5 – Proper Storage of Spare Sprinkler Heads	78
• NFPA Spare Head Requirements	88
• How to Look Up Sprinkler Head Model Numbers	90
• PROPER STORAGE SETUP FOR SPARE SPRINKLER HEADS	91
• INSPECTION OF SPARE HEAD BOX / CHECKLIST	92
• Storage Mistakes to Watch For	94
Chapter 6 – Winter Freeze Prevention	98
• KNOW WHERE TO LOOK IN WINTER	10
• Easy Winter Protection Guide	4
• COMMON WINTER MISTAKES	107
Final Test – Multiple Choice	10
Final Test – Answer Key	8
Sheets Examples	112
• Emergency Response Quick Guide	118 119
• System Reset & Emergency Contact Reference	121
• Fire Sprinkler Pre- Inspection Readiness Checklist	124
Fire Sprinkler Systems Handbook • Visual	
Diagrams & Labels	126
• System Impairment & Fire Watch Form	128
• Emergency Contacts Template	132
• About the Author & Publisher	133
• PWET RISER LABEL SET	134

Chapter 1 – Fire Sprinkler System Basics

Welcome to Basic Fire Sprinkler Training

Fire sprinkler systems protect lives and property. They stay silent most days, but when a fire happens, they react quickly and send water exactly where it is needed.

This chapter introduces the basics of how sprinkler systems work and why they are essential in apartment buildings.

In This Chapter, You Will Learn:

- How sprinkler systems know when there is a fire
- The different types of sprinkler systems
- The basic parts you will see throughout the property
- Why your role in maintaining these systems is important

Chapter 1 — What This Chapter Covers

Chapter 1 introduces you to the basics fire sprinkler systems.

This chapter explains how the system works, what the main parts are, and how everything connects together through pipes, valves, gauges, and the riser room.

Everything is written in simple terms so you can build a strong foundation before learning the harder stuff later.

In This Chapter, You Will Learn:

- What an fire sprinkler system is
- The difference between wet, dry, and antifreeze systems
- What a riser room is and why it's the “heart” of the system
- What valves, gauges, and flow switches do
- How water moves through the building during a fire
- What a sprinkler head does and how it activates
- Basic safety rules every maintenance worker must know
- The most common problems to watch for during daily rounds

Chapter 1 Worksheet – Fire Sprinkler System Basics

Part 1 – Understanding the Basics

1. What is the main job of a fire sprinkler system?

2. When do sprinkler heads activate?

3. Why do only the sprinklers near a fire activate?

Part 2 – Types of Sprinkler Systems

4. What makes a wet pipe system different from a dry pipe system?

5. Where are dry pipe systems usually found?

6. What is the purpose of an antifreeze system?

Part 3 – System Components

7. What is a riser and what does it do?

8. What does a flow switch detect?

9. What information does a gauge give you?

10. Why would you need to use the drain valves?

Part 4 – Your Role in Safety

11. Why is your daily awareness important for keeping the system safe?

12. List three things you should look for during daily walkthroughs.

How Sprinklers Work

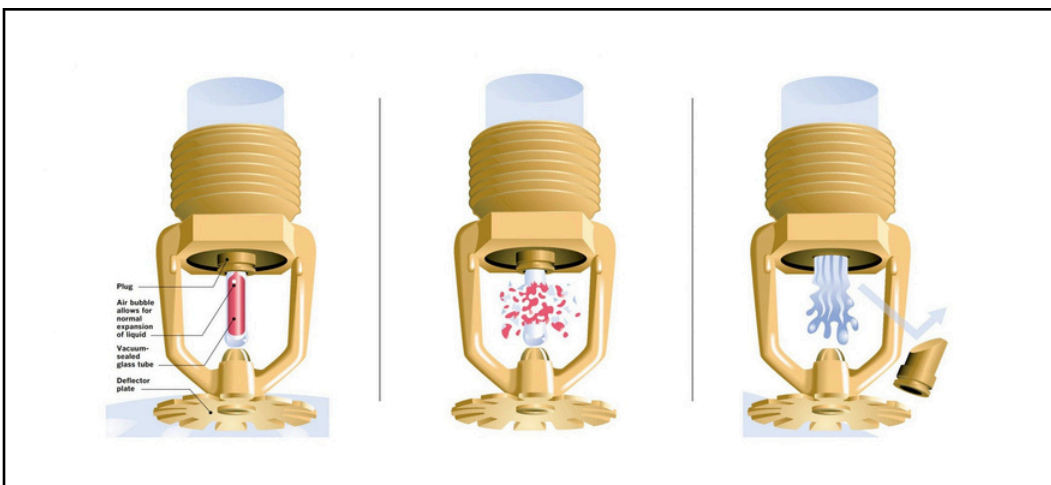
- Detects and controls fires automatically



Sprinklers activate because of heat, not smoke. Only the sprinklers directly above the fire turn on. Most residential heads operate at 155°F to 175°F.

Sprinkler systems are designed to:

1. Protect lives
2. Protect property
3. Meet fire codes and insurance requirements



Types of Sprinkler Systems 1. Wet Pipe Systems

• Pipes are always full of water • Most common in Buildings • Provide the fastest response • Can freeze if installed in cold areas



2. Dry Pipe Systems

• Pipes are filled with air or nitrogen • Water is held back by a dry pipe valve until activation • Used in garages, attics, breezeways, and cold areas



3. Antifreeze Systems

- Pipes contain a special antifreeze solution • Used only in small cold areas where dry systems are not practical • Must use UL-listed antifreeze solutions



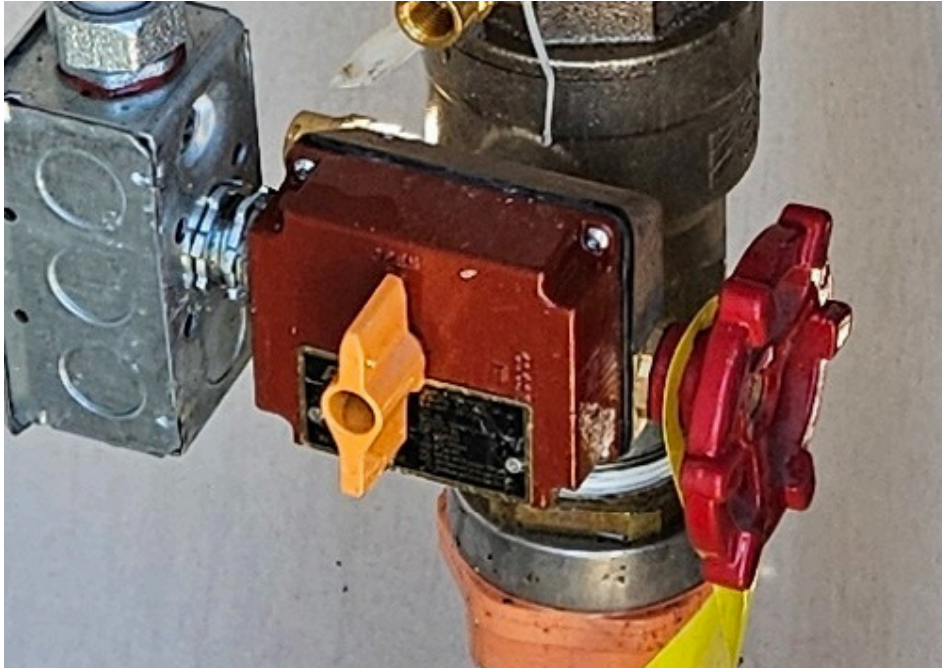
Riser and Control Valves

The riser is the main control point of the sprinkler system. It often includes:

If you see a valve that is closed and you do not know why, report it immediately.

BUTTERFLY VALVE POSITIONS

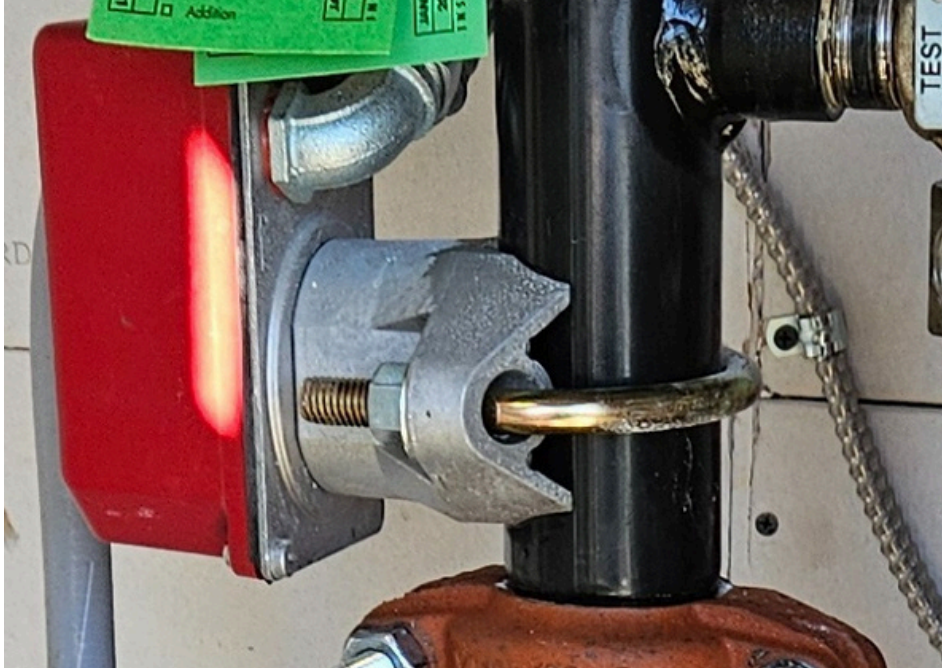
OS&Y VALVE OPEN VS CLOSED



Flow Switches

Flow switches detect water movement inside the pipes. When flow is detected, a signal is sent to the alarm or monitoring company.

FLOW SWITCH CLOSE-UP



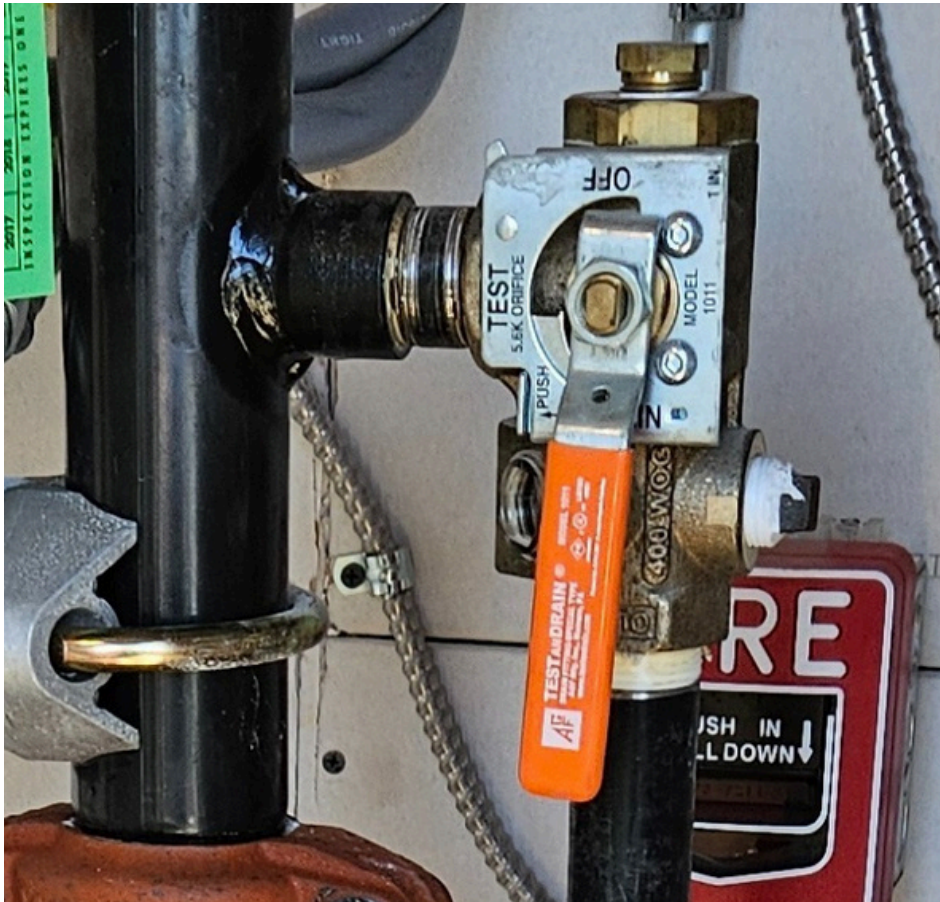
Gauges

Gauges show system pressure. Low or zero pressure may indicate a leak, a closed valve, or a system malfunction.



Drains

Drains allow water to be removed during maintenance, repairs, or testing. They must flow to a safe discharge point.



Chapter 1 – Recap

Fire sprinkler systems are one of the most important life-safety features in any building. They work automatically, respond quickly, and protect both people and property when maintained correctly.

Key Points to Remember

- Sprinklers activate from heat, not smoke.
- Only the sprinkler closest to the fire activates.
- Most sprinkler heads activate between 155°F and 175°F.
- Wet systems are the most common
- Dry systems are used in cold or unheated areas.
- Antifreeze systems protect small, freeze-prone areas.
- The riser is the main control center.
- Critical components include control valves, gauges, flow switches, and drains.
- If a valve is closed and you don't know why, report it immediately.
- Maintenance teams are the first line of defense in spotting problems early.

Chapter 1 – Review Questions

1. What makes a sprinkler head activate?
2. Do all sprinklers turn on at once?
3. What is the most common sprinkler system type in Buildings?
4. Why are dry pipe systems used in garages and breezeways?
5. Name two important parts found on a sprinkler riser.
6. Why is your daily awareness important for sprinkler safety?

Final Takeaway

Sprinkler systems may look simple, but they are responsible for protecting hundreds of lives and millions of dollars in property. Your knowledge, awareness, and quick action keep the system ready to perform when it matters most.

Chapter 1 – Review Questions (Multiple Choice)

1. What makes a sprinkler head activate?

- A. Water pressure
- B. Someone pulling a switch
- C. Heat from a fire
- D. Smoke in the room

2. Do all sprinklers turn on at once?

- A. Yes, they all go off together
- B. No, only the ones heated by the fire
- C. Only during testing
- D. Only if the alarm panel triggers them

3. What is the most common sprinkler system type in Buildings?

- A. Dry pipe system
- B. Deluge system
- C. Wet pipe system
- D. Foam system

4. Why are dry pipe systems used in garages and breezeways?

- A. They are cheaper to install
- B. They won't freeze because they hold air instead of water
- C. They can handle more pressure
- D. They use larger pipes

5. Name two important parts found on a sprinkler riser.

- A. Control valve & waterflow switch
- B. Light switch & outlet
- C. Smoke detector & thermostat

5. Name two important parts found on a sprinkler riser.
- A. Control valve & waterflow switch
 - B. Light switch & outlet
 - C. Smoke detector & thermostat
 - D. Exit sign & fire door
6. Why is your daily awareness important for sprinkler safety?
- A. It helps you catch problems early
 - B. It impresses management
 - C. It keeps pipes shiny
 - D. It helps you memorize the building

Chapter 1 – Review Questions Answers

1. What makes a sprinkler head activate?

Heat.

2. Do all sprinklers turn on at once?

No — only the ones directly above the fire activate.

3. What is the most common sprinkler system type in Buildings?

Wet Pipe System.

4. Why are dry pipe systems used in garages and breezeways?

Because these areas can freeze, and dry systems use air/nitrogen instead of water.

5. Name two important parts found on a sprinkler riser.

Examples: control valves, gauges, flow switches, drains.

6. Why is your daily awareness important for sprinkler safety?

Because maintenance staff are the first to spot leaks, frozen pipes, damaged heads, or closed valves.

Chapter 2 – Emergency Shut-Off Procedures

Chapter 2 — What This Chapter Covers

Chapter 2 teaches you how to respond to sprinkler emergencies quickly and safely.

Leaks, accidental discharges, broken pipes, or damaged sprinkler heads can cause major flooding if not handled the right way.

This chapter explains how to find the right valves, how to shut down the affected area safely, and how to avoid the common mistakes that cause bigger problems.

Everything is written in simple steps — so even someone brand new can follow along.

In This Chapter, You Will Learn:

- How to find your riser room and the correct valve for each building
- The difference between OS&Y and Butterfly valves
- How to shut off a system during a leak or accidental discharge
- How to confirm you're shutting off the right zone
- What not to do during a sprinkler emergency
- How to start Fire Watch if the system is impaired
- How to reduce water damage using drains
- What information to tell your licensed sprinkler contractor
- How to safely reset everything after repairs

Chapter 2 Worksheet – Emergency Shut-Off Procedures

Part 1 – Finding the Problem

1. What should you check FIRST when a sprinkler is flowing?

2. Where do you go to find the correct shut-off valve?

3. How can you locate which zone is flowing? (Name two ways)

Part 2 – Shutting Off the Water

4. What type of valve do you turn clockwise to close?

5. What should you do after closing the valve to make sure water really stopped?

6. Why should you NEVER shut off the whole system unless told to?

Part 3 – Safety & Communication

7. Who should you call after shutting off the water?

8. Why is it important to notify the fire alarm monitoring company?

9. Why should only trained staff touch sprinkler valves?

Part 4 – Documentation

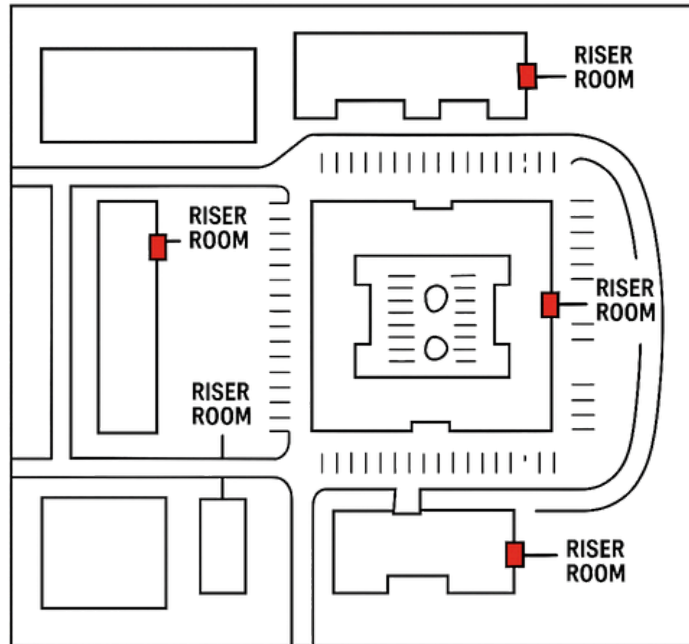
10. List 3 things you must write down after an emergency shut-off.

1. Know Your Shut-Off Locations

Before an emergency happens, you must know exactly where to go. Walk the property and identify:

- All sprinkler riser rooms.
- Zone control valves.
- Fire department connections (FDCs).
- Main and auxiliary drains.

SITE MAP WITH RISER ROOMS



Create a simple site map and post copies in the office, maintenance shop, and inside each riser room door.

3. Emergency Sprinkler Shut-Off Procedure (Leak / Accidental Spray)

Use ONLY when there is no fire.

1. Make Sure There Is NO Fire

Before you touch anything, look and listen for: • Smoke • Flames • Strong burning smell
• Alarms sounding

If you see or hear ANY of these: STOP. Call 911. Evacuate. Do not turn any valves.

Picture Slot #1 — “What a Fire Looks Like vs. No Fire”



What a Fire Looks Like



No Fire

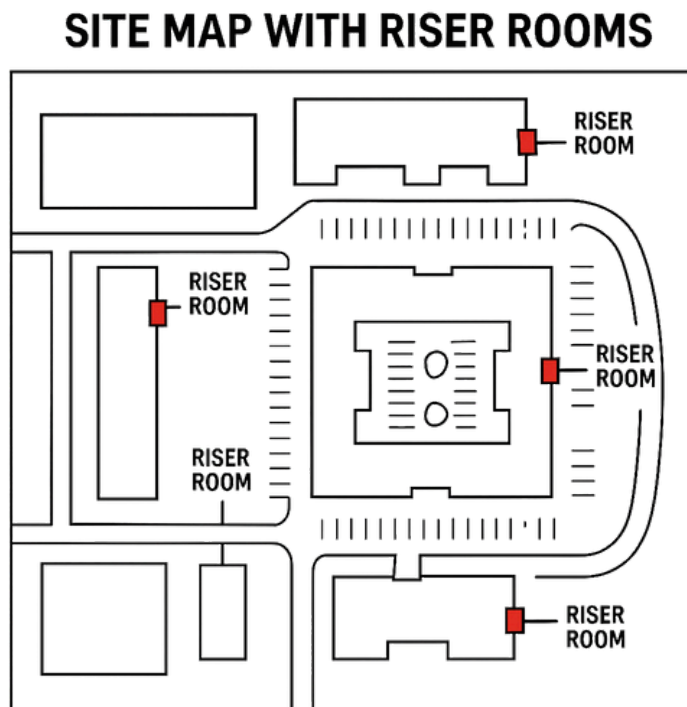
2. Tell Someone Right Away

Let your supervisor or teammate know where the leak is, which building or unit, and what you see. Never do this alone.

3. Get Your Site Map

You must shut off the correct riser room. Use your SITE MAP WITH RISER ROOMS so you shut down the right area.

Picture Slot #2 — Site Map With Riser Rooms



4. Go to the Correct Riser Room

Look for the RISER ROOM sign, building label, and fire sprinkler equipment inside. Make sure it matches the building or units with the leak.



5. Find the Shut-Off Valve

There are two common types of valves:

A. OS&Y; Valve (wheel with a long stem)

How to CLOSE it: Turn the wheel clockwise (to the right). The long stem moves down when it is fully CLOSED.

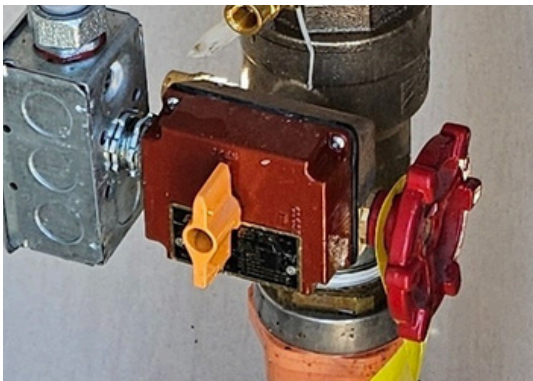


Vertical handle = OPEN

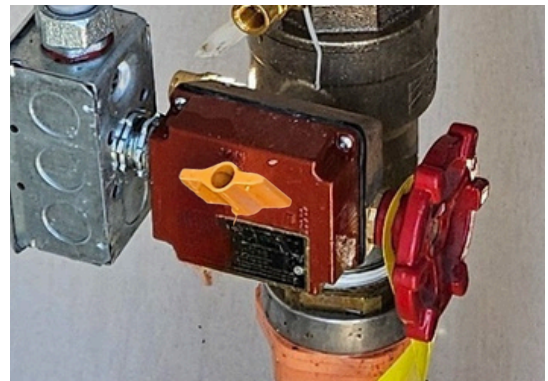


Horizontal handle = CLOSED.

B. Butterfly Valve (handle type) How to CLOSE it: Turn the handle sideways until it is horizontal. Vertical handle = OPEN. Horizontal handle = CLOSED.



Vertical handle = OPEN



Horizontal handle = CLOSED.

6. Make Sure Water Has Stopped

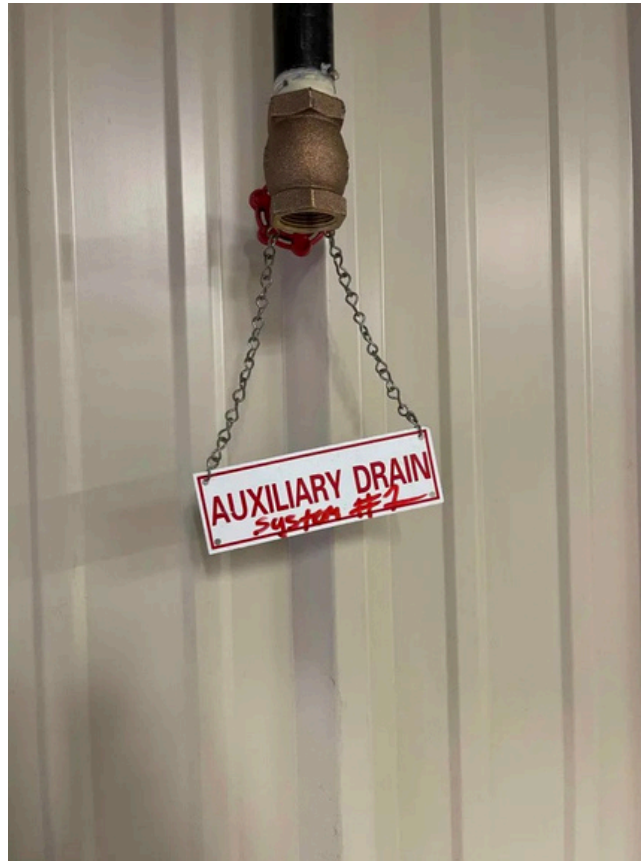
After closing the valve, the rushing water sound should stop. Pressure gauges will slowly drop, and the leak should stop or slow down.

Picture Slot #9 — Pressure Gauges (system and supply)



7. Release Pressure

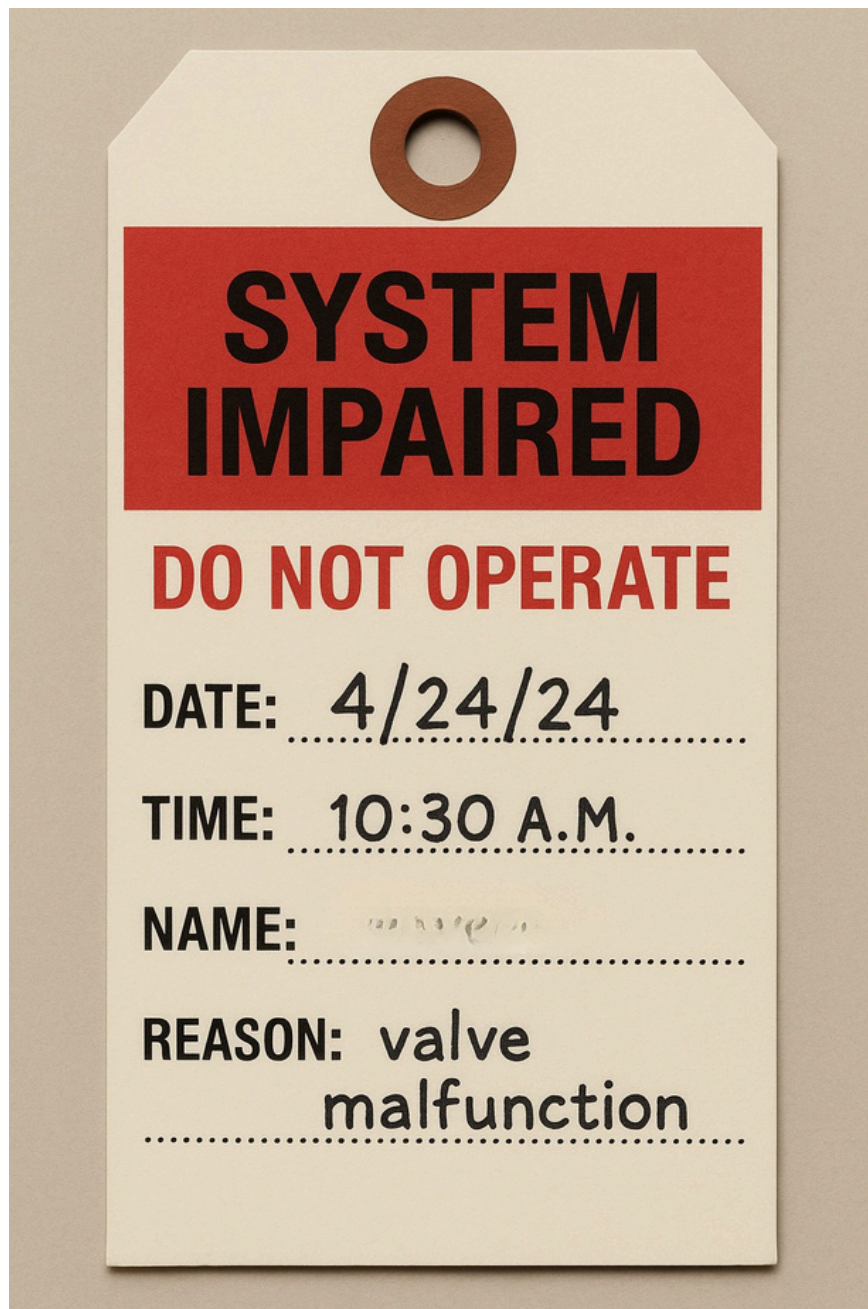
Use the Test-and-Drain valve to gently let out leftover water and pressure. Turn it slowly. This helps stop dripping at the leak.



8. Tag the Valve CLOSED

Attach a tag that says: SYSTEMIMPAIRED – DO NOT OPERATE, with date, time, your name, and what happened.

Example of a Valve Tag



**SYSTEM
IMPAIRED**

DO NOT OPERATE

DATE: 4/24/24

TIME: 10:30 A.M.

NAME: [signature]

REASON: valve
malfunction

9. Start a Fire Watch

Because the system is off, someone must walk the building and look for smoke, fire, or burning smells. However, Fire Watch timing is NOT the same everywhere.

Call your local Fire Department (AHJ) and ask how often they require Fire Watch checks for an impaired sprinkler system.

Some AHJs require every 15 minutes, others every 30, every 60, or more — it depends on your city and fire marshal.

See page 130

Apartment Fire Sprinkler Systems Handbook	
System Impairment & Fire Watch Form	
Purpose: Use this form whenever any part of the fire sprinkler, alarm, or suppression system is out of service, impaired, or undergoing repair. This form also documents the initiation and completion of a required Fire Watch as defined by NFPA 25 and local fire code.	
■ System Impairment Information	
Building / Location:	
System Type (Sprinkler, Alarm, Pump, etc.):	
Impairment Start Date & Time:	
Expected Duration:	
Reason for Impairment / Description of Issue:	
Person Reporting Impairment:	
Company / Contractor (if applicable):	
Phone / Email Contact:	
■ Notifications Made	
Fire Department / AHJ Notified (Date/Time):	
Monitoring Company Notified:	
Property Management Notified:	
Insurance Carrier (if required):	
■ Fire Watch Assignment	
Fire Watch Start Date / Time:	
Assigned Personnel / Company:	
Contact Number:	
Fire Watch End Date / Time:	
Supervisor or Manager Authorizing:	

10. Call the Fire Sprinkler Company

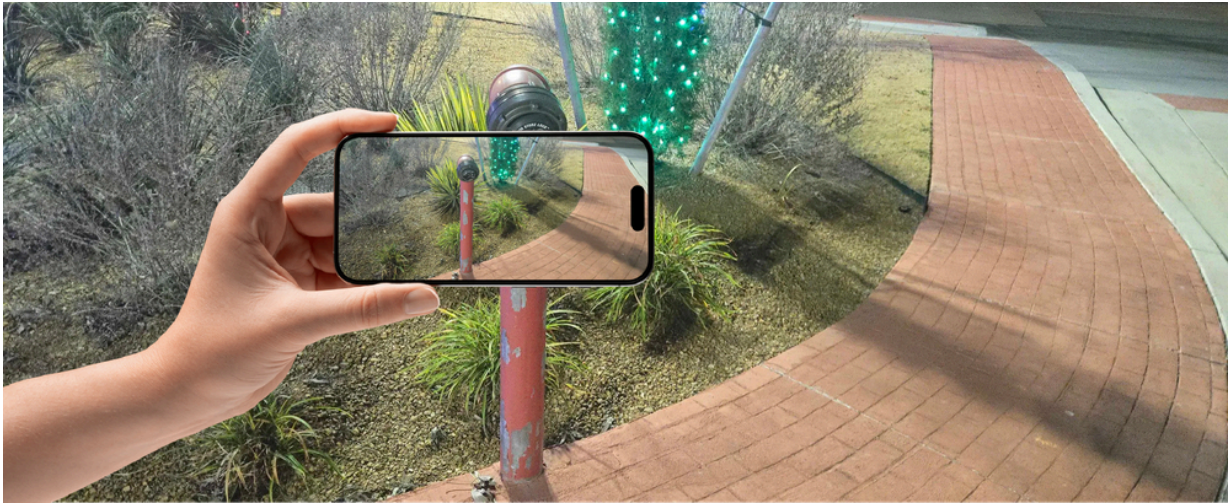
Tell them which building, what happened, which valve you closed, and that fire watch has started.

Picture Slot #15 — “Call Contractor” Icon or Service Truck

Example: Company Name: Metro Fire Systems
Main Office: 555-214-8820
24/7 Emergency Line: 555-907-4412
Email: service@metrofiresystems.com
Technician Assigned: Mark T. (Tech #42)
Dispatcher: Rachel S.

11. Tell Property Management

Send photo and a short description of what broke, what valve you turned off, and any cleanup that is needed.



12. Write a Quick Report

Write down when the leak started, when you shut it off, what you did, who you told, fire watch notes, and attach photos if possible.



INCIDENT REPORT FORM

Maintenance Staff Signature:

Fire Sprinkler Contractor (If Applicable):

Date of Incident:

Time of Incident:

Location / Building:

Person Reporting:

Phone / Contact:

Type of Incident:

- | | |
|--|---|
| ☐ Leak | ☐ Sprinkler Activation |
| ☐ Freeze Damage | ☐ Mechanical Damage |
| ☐ Other: _____ | |

Was the Fire Department Notified?

☐ Yes ☐ No

Detailed Description of What Happened:

[illegible]

4. WHAT NOT TO DO

Fire Sprinkler Leak / Emergency Shut-Off – Critical Warnings

Do NOT shut down the entire sprinkler system unless absolutely necessary. Shutting down everything puts the whole building at risk. Always identify exactly which riser or valve is connected to the leak before closing anything.

Do NOT leave a valve closed after repairs.

A closed valve = no fire protection in that area. After repairs, always reopen the valve and confirm that water flow has returned to normal and alarms are reset.

Do NOT guess which valve to close.

Guessing can shut off the wrong building, floor, or unit. Always use your site map, valve tags, and labels. If you are unsure, stop and call your licensed fire sprinkler contractor for help.

Do NOT use tools, pliers, or force on valves.

Sprinkler valves are designed to be operated by hand. Using tools can bend stems, strip gears, or break internal parts, causing valves to stick open or closed.

Do NOT assume a small leak means a small problem.

A small drip can mean a frozen pipe, failing joint, or high pressure. Take every leak seriously.

Investigate the source or call a fire sprinkler professional.

Do NOT walk away from an impaired system without starting fire watch.

Once a system or zone is shut down or impaired, someone must walk the building on a regular schedule and log each check until protection is restored.

Do NOT delay calling the fire sprinkler company.

Early calls prevent larger damage. When in doubt, contact your contractor, tell them which building is affected, what you see, and which valve (if any) you have operated.

4. WHAT NOT TO DO

Fire Sprinkler Leak / Emergency Shut-Off–Critical Warnings

1. Do NOT shut down the entire sprinkler system.

Never rush to close the main sprinkler control valve for the whole property unless a qualified fire sprinkler contractor or the fire department tells you to. When you shut down the entire system, every apartment, hallway, and stairwell loses protection if a fire starts. Instead, slow down, breathe, and focus on finding which riser or zone is actually leaking. Use your site map, valve chart, or labels to find the right valve for the exact area that is having the problem before you touch anything.



4. WHAT NOT TO DO

Fire Sprinkler Leak / Emergency Shut-Off–Critical Warnings

2. Do NOT leave a valve closed after repairs.

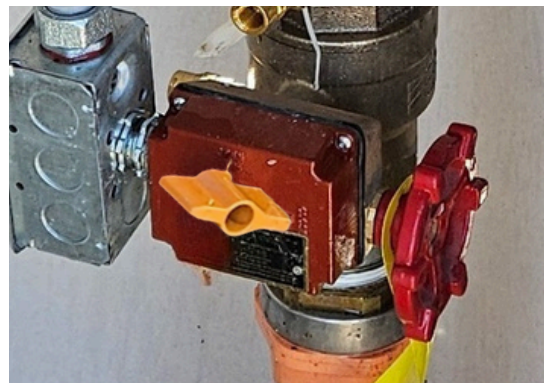
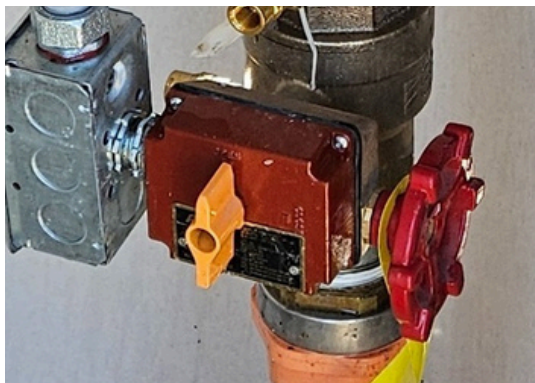
A closed valve means sprinklers in that area will NOT work if a fire happens. After a contractor finishes repairs, part of your job is to make sure protection is fully restored. That means the valve is opened all the way, the supervisory alarm has cleared, and water flow looks normal on gauges or indicators. If you are unsure whether the system is back in service, call your fire sprinkler contractor and confirm before you walk away.



OPEN



Closed



4. WHAT NOT TO DO

Fire Sprinkler Leak / Emergency Shut-Off–Critical Warnings

3. Do **NOT** guess which valve to close.

Guessing can shut off sprinklers in the wrong building, wrong wing, or wrong floor. That means another part of the property could be left unprotected without anyone knowing. Always match the leak location to your site map and valve labels. If the labels are missing, wrong, or confusing, stop and call your licensed fire sprinkler contractor for help instead of guessing. It is always safer to ask than to shut off the wrong system.



4. Do NOT use tools, pliers, or force on valves.

Sprinkler control valves are meant to be turned by hand. If a valve is hard to move, that is a sign that something may be wrong inside it. Using pipe wrenches, pliers, or extra force can bend stems, damage gears, or break internal parts. This can leave the valve stuck partly open or fully closed without you realizing it. If a valve will not operate smoothly by hand, stop and call your fire sprinkler contractor instead of forcing it.



5. Do NOT assume a small leak means a small problem.

A slow drip from a pipe, fitting, or sprinkler head can be the first warning sign of something serious, such as a freeze-damaged pipe, corroded fitting, or high system pressure. Treat every leak as important. Take clear photos, write down where it is, and notify your fire sprinkler contractor. A few drops now could turn into a broken pipe and thousands of dollars in damage if it is ignored.



6. Do NOT walk away from an impaired system without starting firewatch.

If a system, zone, or floor is shut down or impaired, someone must physically walk the building on a set schedule and look for signs of fire, smoke, or hazards. This is called fire watch. Each patrol must be logged with the time, areas checked, and initials of the person on watch. Never leave an area without sprinkler protection unattended. If you cannot maintain fire watch, contact management and your fire sprinkler contractor right away.



7. Do NOT delay calling the fire sprinkler company.

Waiting too long to call your licensed fire sprinkler contractor can turn a small, easy fix into a major emergency. As soon as you control the immediate leak and make the area safe, contact your contractor. Be ready to tell them which building is affected, what you see, which valve (if any) you operated, and whether fire watch has started. Early calls reduce damage, restore protection faster, and help you stay compliant with fire codes and insurance requirements.



POST-INCIDENT RESET CHECKLIST

1. Leak Fixed

A fire sprinkler technician must repair the leak before you continue. Do not reset anything until the repair is confirmed.

2. All Valves Are OPEN

OS&Y valve → stem fully UP. Butterfly valve → handle in line with the pipe. No partially closed valves.

3. Alarm Panel Looks Normal

No beeping, flashing lights, or warning messages. The alarm panel should show NORMAL.

4. All Drains CLOSED

Check the main drain, test-and-drain, and any low-point drains. Make sure all are fully CLOSED.

5. System Pressure Normal

Gauges should show normal pressure. No hissing, dripping, or strange sounds.

6. Call the Monitoring Company

Tell them: "The sprinkler system is back to normal." Write down the time and the name of the person you talked to.

7. Fill Out the Incident Report

Write down what happened, the valve you closed, when it was repaired, and your name.

8. End Fire Watch

Only end fire watch once the system is fully restored and alarms are normal.

9. Clean and Secure the Riser Room

Pick up tools, dump buckets, wipe water, check for leaks, and lock the door.

Great job! Following this guide keeps the building safe and compliant.

Fire Sprinkler Review Quiz

1. *Where do you go first in a non-fire sprinkler discharge?*

- A. The fire department lobby
- B. The janitor's closet
- C. The correct riser/valve
- D. The main electrical room

2. *How should valves normally be positioned?*

- A. Half-open
- B. Fully closed
- C. Cracked open slightly
- D. Fully OPEN

3. *True or False: You can leave a valve closed after repairs if everything looks fine.*

- A. True
- B. False
- C. Only on weekends
- D. Only if water is still leaking

4. *Why is labeling critical?*

- A. It makes the system look cleaner
- B. It's optional but recommended
- C. Labels help with annual inspections only
- D. It prevents confusion and speeds response

5. *What must happen before returning the system to normal?*

- A. A tenant must confirm the floors are dry
- B. The fire alarm company must send an email
- C. Wait 24 hours automatically
- D. A contractor must inspect the system and confirm it is safe

Chapter 2 – Recap

- Know your shut-off locations long before emergencies happen. Every building is different, and hunting for valves during an emergency creates delays that cause unnecessary water damage. Staff should be familiar with where each riser and control valve is located.
- All valves must be clearly labeled and match your site map exactly. Labels prevent mistakes. A mismatched or missing label can lead to shutting off the wrong system, leaving critical areas unprotected.
- Always follow the emergency shut-off steps exactly as trained. Procedures exist to keep you safe. Skipping steps, jumping ahead, or assuming where the water is coming from creates risk.
- Never shut the system off during an active fire unless directed by the Fire Department or AHJ. Water-based fire protection should only be disabled when a qualified authority confirms it is safe.
- Do not guess valve positions or use force on any valve. Guessing creates dangerous situations. Forcing a valve can break stems, damage equipment, or cause accidental activation.
- Always complete a full reset checklist after the incident. This includes verifying all drains are closed, gauges are normal, valves are open, the alarm panel is restored, and supervisory signals have cleared.
- Documentation and contractor verification are required every time. Photos, notes, timestamps, and contractor confirmation protect you, the building, and your company.
- Communication is part of the emergency response. Notify the monitoring company, property manager, and residents when appropriate.

Final Takeaway

Fast, correct shut-offs limit damage — but safety and accuracy always come first. Clear labels, accurate maps, and trained staff turn an emergency into a controlled situation. When everyone follows the same consistent process, your building stays protected, the system is restored faster, and the entire response becomes safer and more confident.

Chapter 3 – Sprinkler Head Awareness

Chapter 3 — What This Chapter Covers

Chapter 3 focuses on sprinkler heads — the small parts of the fire sprinkler system that do the most important job during a fire.

This chapter teaches you how sprinkler heads work, how to recognize damage, and how to spot problems early before they turn into leaks or failed inspections.

Everything is explained in simple, clear steps.

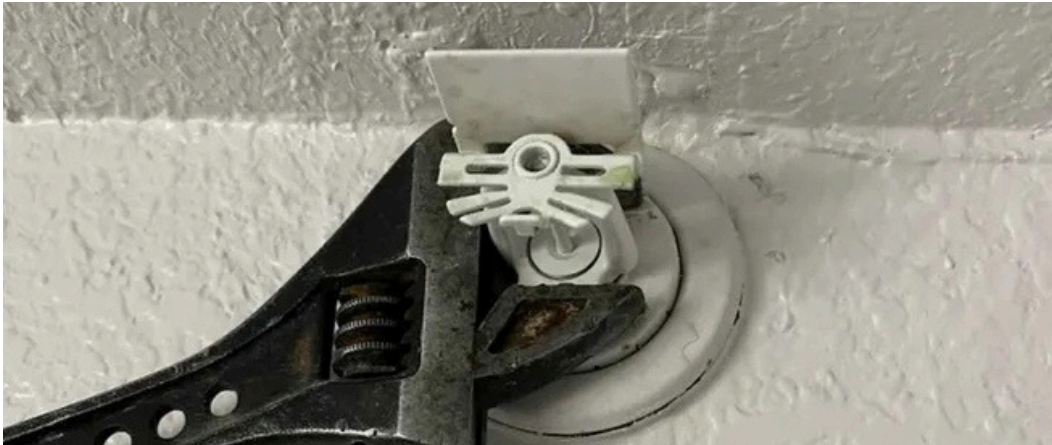
In This Chapter, You Will Learn:

- What sprinkler heads are and how they respond to heat
- Why sprinkler heads are sensitive and must be protected
- The different parts of a sprinkler head and what each part does
- Common sprinkler head problems (dust, paint, damage, bent parts, etc.)
- What a “loaded” sprinkler head is and why it slows activation
- Why missing escutcheons (ESCs) cause instant inspection failures
- How to spot unsafe or damaged sprinkler heads during daily rounds
- Picture examples of Safe vs Unsafe sprinkler head conditions

The Heart of the System

Sprinkler heads are like little fire guards watching over each room. Each sprinkler head protects a specific area and opens when it gets hot enough from a fire. If a head is damaged, painted, blocked, or broken, it might not work during a fire—or it may go off by accident and flood the building.

A single bad sprinkler head can cause failed inspections, major water damage, or a system that does not perform when it is needed most.



Chapter 3 Worksheet – Sprinkler Head Awareness

Part 1 – How Sprinkler Heads Work

1. What makes a sprinkler head activate?

2. Why do only sprinkler heads near the fire turn on?

3. Why is it dangerous if a sprinkler head is damaged or painted?

Part 2 – Keeping Sprinkler Heads Safe

4. Why should you NEVER hang anything on a sprinkler head?

5. Why should sprinkler heads never be painted?

6. List 3 things you should watch out for when working near sprinkler heads.

Part 3 – Clearance & Obstructions

7. How much clearance is required below every sprinkler head?

8. Name two things that could block or stop a sprinkler from working.

9. Where does the clearance rule apply? (Example: closets, storage rooms, etc.)

Part 4 – Spotting Problems Early

10. What does a corroded sprinkler head look like?

11. What is an escutcheon (ESC) and why does it matter?

12. What should you do if you find a damaged, painted, or obstructed sprinkler head?

WHAT NOT TO DO

Never Hang Anything on Sprinkler Heads or Pipes

Sprinkler heads and pipes are there to protect the building from fire. They are not hooks or hangers.

If you hang things on a sprinkler head, even something small, it can bend, crack, or break the head. If that happens, water can spray everywhere and flood a room or hallway.

Think of a sprinkler head like a safety device, not a closet rod. If it gets bumped or pulled, it might go off when there is no fire.

Do NOT hang: coats, jackets, backpacks, hangers, decorations, signs, air fresheners, wires, cords, or lights on sprinkler heads or pipes.

If you see something hanging on a sprinkler head or pipe, tell a manager or maintenance person right away so they can remove it safely.



2. Never Paint Sprinkler Heads

PAINTED VS CLEAN SPRINKLER HEADS

Sprinkler heads should never be painted. They have a special part that feels heat from a fire. If someone puts paint on the sprinkler head, that paint can cover the heat-sensitive part. This means the sprinkler might: • Turn on too late • Not turn on at all Painted sprinkler heads will always fail an inspection and must be replaced. If you see a painted sprinkler head, tell a manager or your fire sprinkler contractor.

Painted Sprinkler Head (Wrong)



Clean Sprinkler Head (Correct)



BE CAREFUL AROUND SPRINKLER HEADS

Maintenance Work Near Sprinklers (Kid-Friendly Guide)

Sprinkler heads are very sensitive. Treat them like tiny glass safety devices. If they break, water will spray everywhere.

Before using a ladder or moving tall furniture, stop and LOOK for sprinkler heads. Plan where you are going so you don't bump into them.

A small tap from a ladder, broom, or long board can break a sprinkler head and flood a whole room in seconds.

When workers must be near a sprinkler head, they can use special **protective caps**. These caps help protect the head from getting hit by accident.

Always REMOVE the protective cap when the job is done. Sprinklers must stay uncovered so they work during a fire.

If you see a sprinkler head that looks bent, cracked, loose, or damaged, tell a supervisor or maintenance worker right away.



Keep It Clear – The 18-Inch Rule

One of the most important rules for sprinkler systems is clearance. There must be at least 18 inches of open space below every sprinkler head so water can spray out and reach a fire properly.

No shelves, boxes, decorations, or light fixtures should be placed within this 18-inch zone. Blocking the spray pattern can make the sprinkler almost useless.



This rule applies everywhere, including closets, laundry rooms, storage rooms, and common areas. There are no exceptions just because a room is small or not used often.

Spot the Red Flags

DAMAGED / CORRODED HEAD EXAMPLES

Catching sprinkler head problems early keeps your system safe and helps you pass inspections. During regular walkthroughs, look for these warning signs: 1. Damaged or Corroded Heads • Bent or twisted frames • Cracked bulbs • Rust or corrosion • Heavy discoloration or buildup Any damaged sprinkler head should be reported and replaced by a qualified fire sprinkler contractor. Damaged heads may not work in a fire and can cause inspection failures.

CORRODED



Loaded



PAINTED OR MISSING ESCUTCHEONS

Good vs. Bad Sprinkler Escutcheon Installation

Escutcheons (ESCs) are the round plates that sit around the sprinkler head where it goes through the ceiling.

They help seal the hole and protect the sprinkler head from dust, heat, bugs, or damage.

A missing or loose escutcheon can make a sprinkler open too slowly during a fire.

A painted escutcheon is not allowed. Paint can glue parts together or hide problems.

Think of an escutcheon like a safety shield—if it's missing, broken, or painted, the sprinkler may not work right.

If you see a sprinkler with a missing, painted, or crooked escutcheon, tell someone so it can be fixed.



DUSTY / LOADED SPRINKLER HEADS

Why Looking Up During Your Rounds Matters

Sprinkler heads can collect dust, dirt, or even spider webs over time.

This happens a lot in places like attics, storage rooms, laundry rooms, and other areas that aren't cleaned often.

When a sprinkler head becomes too dusty, it may not sense heat fast enough during a fire.

Dust can also change the way water sprays, which means the sprinkler might not put out a fire the way it should.

Light dust can sometimes be cleaned by a trained maintenance worker using a soft brush.

Heavy dust or dirt should be reported right away so a fire sprinkler technician can clean or replace the head safely.

A quick look up while walking through the building can help you catch problems early and prevent fire damage.



Review Quiz – Sprinkler Head Awareness

1. *What makes a sprinkler head activate?*

- A. Someone pulling a fire alarm
- B. Heat from a fire
- C. Smoke in the room
- D. Water pressure dropping

2. *True or False: You can paint sprinkler heads to match the ceiling.*

- A. True
- B. False
- C. Only with special paint
- D. Only during remodels

3. *What is the minimum clearance below a sprinkler head?*

- A. 6 inches
- B. 12 inches
- C. 18 inches
- D. 24 inches

4. *Which of the following is a common sprinkler head hazard?*

- A. Dust on the floor
- B. Hanging items from the head or piping
- C. Low lighting
- D. Painted walls

5. *What should you do if you see a corroded or painted sprinkler head?*

- A. Clean it yourself
- B. Ignore it
- C. Paint over it so it matches
- D. Report it so a qualified contractor can replace it

Chapter 3 – Recap

- Sprinkler heads are the ‘fireguards’ of the system, each protecting a small area.
- Hanging items on heads or piping can break a head and cause major water damage.
- Painting a sprinkler head is a serious code violation and requires replacement.
- Keep at least 18 inches of clear space below every sprinkler head.
- Look for damaged, painted, dusty, or obstructed heads during regular walkthroughs.
- Early detection of problems prevents failed inspections and large losses.

Final Takeaway

Sprinkler heads are small but critical parts of your fire protection system. Simple habits—keeping them clear, undamaged, unpainted, and easy to see—help protect lives, property, and your inspection results.

Chapter 4 – Escutcheon (ESC) Replacement

Chapter 4 — What This Chapter Covers

Chapter 4 focuses on escutcheons (ESCs) — the metal plates around sprinkler heads where they pass through the ceiling.

Even though they seem small, ESCs play a HUGE role in fire protection. Missing, painted, loose, or damaged escutcheons are one of the most common inspection failures buildings.

This chapter teaches you what escutcheons do, how to spot problems instantly, and how to fix or report issues before they become violations.

Everything is explained in simple, clear steps so anyone can understand it.

In This Chapter, You Will Learn:

- What an escutcheon (ESC) is and why it matters
- The different types of escutcheons (one-piece, two-piece, recessed, etc.)
- How ESCs protect the sprinkler and the fire barrier
- Why missing or damaged ESCs cause instant inspection failures
- How to tell “GOOD” installs from “BAD” installs
- How to identify painted, bent, loose, or mismatched ESCs
- How ESCs affect sprinkler activation time
- When you can replace an ESC yourself — and when you must call a sprinkler contractor
- Picture examples of correct vs incorrect ESC installations

Understanding Escutcheons

An escutcheon (ESC) is the round metal plate that sits around a sprinkler head where it passes through a ceiling or wall. It may look simple, but it plays a major role in fire safety by sealing the gap and helping the sprinkler respond correctly during a fire.

Without a proper escutcheon, heat and smoke can slip past the sprinkler head, causing delayed activation or a failed inspection.



Chapter 4 Worksheet – Escutcheon (ESC) Replacement

Part 1 – Understanding Escutcheons

1. What is an escutcheon (ESC)?

2. Why is an ESC important for fire safety?

3. What can happen if an ESC is missing or painted?

Part 2 – Safe Replacement Steps

4. Why should you make sure the system is safe before touching an ESC?

5. Why is it important to match the replacement ESC to the sprinkler model?

6. Why should you never twist or force an escutcheon into place?

Part 3 – Proper Storage & Readiness

7. Where should spare ESCs be stored?

8. What items should be kept with the spare ESCs?

9. Why does NFPA 25 require properties to keep spare sprinkler heads on-site?

Part 4 – Spotting Problems

10. What should you do if you see a loose or missing escutcheon?

11. Why is organizing spare ESCs important for passing inspections?

12. How can a missing escutcheon delay sprinkler activation?

WHY ESCUTCHEONS (ESCs) MATTER

Escutcheons (ESCs) are the small metal plates that sit around the sprinkler where it passes through the ceiling.

They help seal the hole and keep heat, smoke, dust, and bugs from getting into the ceiling space.

NFPA 13 and NFPA 25 require escutcheons to be installed the right way because they help the sprinkler work fast during a fire.

If an escutcheon is missing, loose, painted, or damaged, the sprinkler may take longer to activate in a fire.

A missing escutcheon is one of the fastest ways to fail a fire inspection.

These plates only cost a couple of dollars, but catching a missing one early can prevent thousands of dollars in repairs, fines, or fire damage.

A quick look during your normal walk-through can help keep the system safe and compliant.

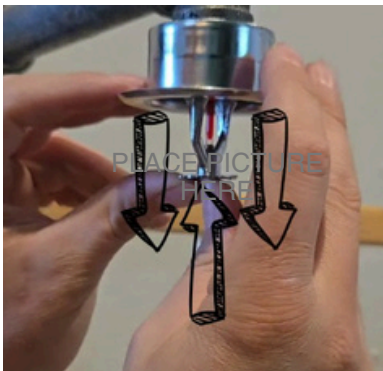


Safe Replacement Steps

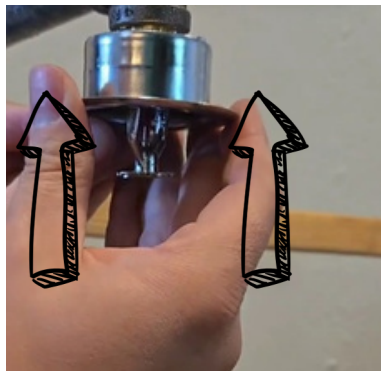
STEP-BY-STEP ESCUTCHEON REPLACEMENT IMAGES

- Confirm the system is safe to work on. If possible, shut off the water or use sprinkler head caps so the system is protected while you work.
- Make sure you have the correct type and size of escutcheon (trim ring) for the sprinkler head model.
- Slide the escutcheon gently into place — never twist, bend, or force it onto the head.
- Check that it sits snug and flat against the ceiling or wall, with no gaps or tilting.
- If you feel like you have to force it, stop. You may damage the sprinkler head and it will need to be replaced by a qualified fire sprinkler contractor.

Take off old



Put On new



Storage and Readiness

SPARE ESC STORAGE BOX

According to NFPA 25, every property with a fire sprinkler system must keep spare sprinkler heads on-site. It's a good practice to store spare escutcheons (ESCs) in the same area as the spare heads so the right parts are always ready. The storage box can be kept in the riser room or in the main office, as long as the fire sprinkler inspector and service technician are told exactly where it is and can access it quickly during inspections or repairs.

- Keep spare ESCs clean and organized.
- Label them by size, type, and finish.
- Store them in a dry, easy-to-access box in or near the riser room, or in a clearly marked spot in the main office.
- Include a spare head wrench and contractor contact information inside the box.



REVIEW QUIZ – ESCUTCHEON AWARENESS

1. What is the main purpose of an escutcheon?

- A. Decoration only
- B. To seal the ceiling opening and help sprinklers work correctly
- C. To hold up ceiling tiles
- D. To improve room temperature

2. Escutcheons are only decorative.

- A. True
- B. False
- C. Only in laundry rooms
- D. Only when painted

3. What should you always do before replacing an escutcheon (ESC)?

- A. Paint it first
- B. Make sure the system is shut off or the head is safely capped
- C. Remove the sprinkler head
- D. Vacuum the ceiling

4. What can happen if an escutcheon is missing or misaligned?

- A. Sprinkler activates too fast
- B. Sprinkler activates too slow & may fail inspection
- C. Nothing happens
- D. It becomes fireproof

5. How should spare escutcheons be stored?

- A. Tossed in any drawer
- B. Outside in a toolbox
- C. Labeled, clean, and organized near the riser room
- D. In a paint bucket

Chapter 4 – Recap

- Escutcheons are small but essential for sprinkler performance.
- Missing or damaged ESCs can delay activation in a fire.
- Never force an escutcheon into place—it can break the sprinkler.
- Keep spare ESCs organized and stored with spare heads.
- Regular inspections help catch missing or loose escutcheons early.

Final Takeaway

Escutcheons may be small, but they protect the sprinkler opening and ensure proper performance. Keeping them installed, aligned, and ready is critical for safety and compliance.

Chapter 5 – Proper Storage of Spare Sprinkler Heads

Chapter 5 — What This Chapter Covers

Chapter 5 teaches you how to properly store, organize, and manage your spare sprinkler heads. Every building with a fire sprinkler system is required by NFPA 25 to keep the correct number and type of spare heads — and to store them in a safe, organized way.

This chapter explains how to set up a compliant spare head box, how to label and separate heads correctly, and how to avoid the common mistakes that lead to failed inspections, delays, and expensive fines.

All instructions are written in simple, clear language so anyone can understand it.

In This Chapter, You Will Learn:

- What NFPA 25 requires for spare sprinkler head storage
- How many spare heads your building must keep
- How to organize heads by type, temperature, and K-factor
- Why each head must be stored in its own compartment
- Why spare heads MUST have a matching sprinkler wrench
- How to keep escutcheons (ESCs) with the correct head type
- How to label the spare head box correctly
- Where the box should be stored (riser room vs office)
- Common storage mistakes to avoid
- Picture examples of good vs bad storage setups

Always Be Ready

If a sprinkler head gets damaged during maintenance, construction, or by accident, it must be replaced right away. A damaged head can compromise the system and may require a temporary shutdown until a replacement is installed.

Having the correct spare heads on hand allows you to restore the system quickly without waiting for emergency deliveries. This saves time, limits risk, and keeps the building protected and compliant.



Chapter 5 Worksheet – Proper Storage of Spare Sprinkler Heads

Part 1 – Why Spare Heads Matter

1. Why must damaged sprinkler heads be replaced immediately?

2. How does having spare heads on-site save time and money?

3. Why is it important for the system to be restored quickly?

Part 2 – NFPA Spare Head Requirements

4. How many spare heads are required when a property has 0–300 sprinkler heads?

5. Why must spare heads match the installed heads exactly?

6. What could happen during an inspection if spares are missing or incorrect?

Part 3 – Proper Storage Setup

7. What should be included in a spare sprinkler head box?

8. Where should the spare head box be stored?

9. Why is it important to label and organize spare heads?

Part 3 – Proper Storage Setup

7. What should be included in a spare sprinkler head box?

8. Where should the spare head box be stored?

9. Why is it important to label and organize spare heads?

Part 4 – Common Storage Mistakes

10. Why is storing spare heads loose in a drawer a bad idea?

11. What happens if wrenches or escutcheons are missing from the spare box?

12. What should you do if you find rusted or mismatched spare heads?

NFPA Spare Head Requirements

According to NFPA25, every sprinklered property must keep spare sprinkler heads available on-site. The number of required spares depends on the total number of sprinkler heads in the system:

Total Sprinkler Heads / Minimum Spares Required:

- 0 – 300 heads: 6 spares
- 301 – 1,000 heads: 12 spares
- Over 1,000 heads: 24 spares

Each spare must match the installed heads by type, temperature rating, orifice size, and finish. This ensures compatibility and code compliance.

16.2.7.5 The stock of spare sprinklers shall include all types and ratings installed and shall be as follows:

- (1) For protected facilities having under 300 sprinklers — no fewer than six sprinklers
- (2) For protected facilities having 300 to 1000 sprinklers — no fewer than 12 sprinklers
- (3) For protected facilities having over 1000 sprinklers — no fewer than 24 sprinklers

From NFPA 13 2019 edition

NFPA Spare Head Requirements

NFPASPAAREHEADTABLE / REFERENCEIMAGE

According to NFPA 25, every sprinklered property must keep spare sprinkler heads available on-site. The number of required spare heads is based on the total number of sprinkler heads installed in the system:

Total Sprinkler Heads	Minimum Spares Required
0 – 300 heads	6 spares
301 – 1,000 heads	12 spares
Over 1,000 heads	24 spares

Spare heads must match the installed heads by type, temperature rating, orifice size, and finish. This ensures safety, compatibility, and full NFPA compliance. Spare heads are usually stored in the riser room, but they ****can be kept in the main office**** instead. This is sometimes safer because heaters inside riser rooms have been known to accidentally activate spare sprinkler heads stored in cabinets. If stored in the office, make sure inspectors and technicians are told exactly where the spare cabinet is located.



How to Look Up Sprinkler Head Model Numbers

WHERE TO FIND MODEL NUMBERS ON THE HEAD ITSELF

Every sprinkler head has important information printed or stamped directly on the metal frame. This information helps inspectors, technicians, and building staff identify the correct replacement parts. Knowing where to look makes it easy to match the right sprinkler head when ordering or replacing one.

- Most sprinkler heads have the model number stamped on the metal frame.
- Look closely at the side or top of the frame — the numbers may be small.
- The manufacturer name or initials are often stamped nearby.
- Temperature rating is usually shown by a color-coded bulb or a stamped temperature value.
- Orifice size may be stamped as a 'K-Factor' (like K5.6 or K8.0).
- Use a flashlight if the ceiling is high or the print is faint.
- Never twist or remove a sprinkler head just to read the numbers.

Once you find the model number, write it down or take a picture. This helps ensure the spare head you choose matches perfectly.



PROPER STORAGE SETUP FOR SPARE SPRINKLER HEADS

Simple Guide for Maintenance and Inspection Teams

The best way to store spare sprinkler heads is in a dedicated spare head box with separate compartments. This box can be metal or sturdy plastic, as long as it keeps sprinkler heads protected, clean, and organized.

Each spare head box should include:

- Labeled compartments for each sprinkler type and temperature rating.
- The correct sprinkler wrench for each head type.
- Extra escutcheons (ESCs) that match the heads stored.
- A laminated ID chart showing each head type for quick and easy reference.

Store the box in a clean, dry, temperature-controlled area. The riser room or the main office are the most common locations.

If the box is stored outside the riser room (such as in the office), make sure inspection staff and fire sprinkler technicians know exactly where it is kept. This prevents delays during repairs and helps avoid accidental heating from space heaters or HVAC units that could set off a sprinkler head inside the storage cabinet.

A well-organized spare head box saves time, prevents mistakes, and helps keep the building fully compliant during inspections.

Real-World Best Practices

INSPECTION OF SPARE HEAD BOX / CHECKLIST

Staying inspection-ready is not just about meeting NFPA requirements — it's about being prepared. These field-proven tips help keep your spare head program in excellent shape:

- Include spare escutcheons (ESCs) with your spare sprinkler heads.
- Check the spare head box during each quarterly and annual inspection.
- Replace any rusted, dirty, painted, or mismatched heads immediately.
- Add a laminated chart or photo reference of each sprinkler type stored in the box.

These small steps help you avoid failed inspections, ensure fast repairs, and build confidence with inspectors and tenants. A five-dollar sprinkler head can save thousands of dollars in damage — but only if it is ready when you need it.

Spare Head Box Inspection Checklist

Spare head box is easy to find (location labeled and known by staff).

Spare heads match installed types (model, temperature, finish).

Spare escutcheons (ESCs) are stored with the spare heads.

Spare head wrench is in the box and in good condition.

Contractor name and phone number are listed inside the box.

Box is clean, dry, and free of dust, rust, or leaks.

Laminated reference chart or photos are up to date.

Spare Head Box Inspection Photo / Diagram



Storage Mistakes to Watch For

Avoid these common mistakes that inspectors frequently flag:

- Loose or unprotected storage (heads tossed into drawers or boxes without compartments).
- Missing wrenches or escutcheons.
- Unlabeled or mixed heads that are not separated by type and temperature rating.

A disorganized spare head box is one of the most common causes of failed inspections—and one of the easiest problems to fix.



STORAGE MISTAKES TO WATCH FOR

Common Problems Inspectors Flag

Avoid these common mistakes that fire inspectors see all the time:

- Sprinkler heads tossed loosely into drawers, bags, or boxes with no protection.
- Missing sprinkler wrenches or missing escutcheons (ESCs).
- Heads mixed together with no labels and no separation by type or temperature rating.

These mistakes can lead to instant inspection failures, and they are very easy to fix with good organization.

A clean, labeled, and protected spare head box keeps the building safe and helps maintenance pass inspections without stress.

Review Quiz – Spare Sprinkler Head Storage

1. How many spare heads are required for a system with 250 sprinklers?

- A. 2 spare heads
- B. 6 spare heads
- C. 12 spare heads
- D. None are required

2. Which items must be included with spare heads?

- A. A flashlight and cleaning wipes
- B. Only the sprinkler heads
- C. The correct wrench and matching escutcheons
- D. A bucket of water

3. True or False: All spare heads can be stored together in one large open compartment.

- A. True
- B. False
- C. Only for small buildings
- D. Only if the inspector approves it

4. What is one way to help identify heads in the box quickly?

- A. Shake each head to listen for rattling
- B. Use a laminated ID chart or photo reference
- C. Store them in a random order
- D. Guess based on color

5. Why is it important to check your spare head box regularly?

- A. So you can repaint the heads if needed
- B. To clean out old paperwork
- C. To make sure all parts are clean, complete, and ready to use
- D. To see if any heads are missing for decoration

Chapter 5 – Recap

- Every sprinklered building must keep spare heads on-site according to NFPA 25.
- The number of required spares is based on the total number of sprinklers in the system.
- Spare heads must match installed heads by type, temperature rating, orifice size, and finish.
- A dedicated, labeled spare head box keeps parts protected and easy to find.
- Regular checks of the spare head box prevent inspection failures and delays in repairs.

Final Takeaway

Keeping your spare head box organized is one of the simplest and most effective ways to stay compliant, save time, and protect your building. When a head is damaged, being prepared with the right spare makes all the difference.

Chapter 6 – Winter Freeze Prevention

Chapter 6 — What This Chapter Covers

Chapter 6 teaches you how to protect your fire sprinkler system during winter — especially in areas that regularly drop below freezing.

A single frozen pipe can break, burst, or split, causing massive flooding and thousands of dollars in damage.

This chapter shows you how to find the “cold spots,” how to heat and seal the riser room, and how to prevent freeze-ups before they start.

Everything is written step-by-step in simple terms so anyone can follow it.

In This Chapter, You Will Learn:

- Why winter causes pipes to freeze
- How to identify cold zones in the building
- How to inspect attics, breezeways, garages, and exterior walls
- Why riser rooms must stay above 40°F at all times
- How to use heaters, thermostats, and insulation correctly
- How to seal gaps that let in cold air
- How to use a thermometer to monitor temperatures
- Common winter mistakes (and how to avoid them)
- Picture examples of frozen pipe damage
- How to build a winter inspection routine
-

Don't Let Cold Snap Your System

When temperatures drop, your sprinkler system is at risk. Even a few hours below freezing can cause serious damage. When water freezes, it expands and can burst fittings or entire sections of pipe.

Once the ice thaws, major flooding and expensive repairs can occur. Freeze damage can also take your fire protection system out of service, creating a dangerous situation.



Chapter 6 Worksheet – Winter Freeze Prevention

Part 1 – Understanding Freeze Risks

1. Why can freezing temperatures damage a sprinkler system?

2. Which areas on a property are most at risk of freezing?

3. Why can a frozen pipe shut the whole fire system down?

Part 2 –IdentifyingProblemAreas

4. Why is the riser room one of the most important areas to protect?

5. Name two places where cold air can sneak in.

6. Why is it important to inspect attics, breezeways, and garages before winter?

Part 3 – Heating & Protecting the System

7. What temperature must the riser room stay above at all times?

8. Why should permanent heaters be used instead of space heaters?

9. Why should wall gaps, vents, and doorframes be sealed?

Part 4 – Best Practices & Avoiding Mistakes

10. Name one tool that can monitor riser room temperature remotely.

11. Why is 'set it and forget it' NOT a good freeze-prevention method?

12. What is one common winter mistake you should avoid?

KNOW WHERE TO LOOK IN WINTER

Simple Guide for Finding Cold Spots

When winter comes, some places in your building get cold faster than others.

Cold spots are dangerous because sprinkler pipes can freeze there first.

Frozen pipes can burst and flood a building, so it's SUPER important to know where to look.

Think of it like a treasure map—but instead of treasure, you're looking for cold areas that need checking!

Here are the main places to check before winter:

Riser Rooms: These rooms MUST stay warm. They should always be at least 40°F or warmer. If they get too cold, big pipes can freeze.

Exterior Walls: Pipes hidden inside outside walls can freeze if there isn't enough insulation. These walls touch the outside cold.

Attics, Breezeways, and Garages: These areas are open or unheated, so they get cold fast. Always check for drafts or open vents.

These are the SAME places inspectors check after a freeze—so checking now saves you trouble later!



Picture Area 1: Riser Room (Warm Zone)

Picture Area 2: Attic or Garage (Cold Zone)



Picture Area 3: Exterior Wall Pipe Area (Hidden Danger Zone)



Heat It, Seal It, Check It

- Install Permanent Heating – Use wall or baseboard heaters, not temporary space heaters.
- Seal Every Gap – Cold air can leak through door gaps, vents, and wall openings.
- Add Thermostat Control – Set to activate at 40°F for consistent heating.
- Monitor Temperature – Place a thermometer near the floor for accurate readings.



Never assume building heat will keep the riser warm. Someone must check it regularly.

HEAT IT, SEAL IT, CHECK IT

Easy Winter Protection Guide

Install Permanent Heating: Use wall or baseboard heaters. Do NOT use small space heaters—they can fail or shut off.

Never assume the building's heat will keep the riser warm. Someone must check it regularly, especially during freezing weather.

Seal Every Gap: Cold air can sneak in through cracks around doors, vents, or holes in the wall. Seal these gaps to stop drafts.

Add Thermostat Control: Set a thermostat to turn heat on automatically at 40°F to keep pipes safe.

Monitor Temperature: Put a thermometer near the floor. Cold air drops, so the floor gives the most accurate reading.

Tips from the Field

- Insulate riser room doors with foam board and weather stripping.
- Install a Wi-Fi temperature monitor that sends alerts.
- Use battery backup heaters for power outages.
- Check exposed pipe temperatures with infrared thermometers.

Don't Risk It

COMMON WINTER MISTAKES GRAPHIC

- Using space heaters with extension cords or power strips.
- Placing space heaters too close to boxes, furniture, or combustibles.
- Relying on tenant heating through shared walls instead of protecting the riser room itself.
- Assuming someone else checked the riser room during a cold snap.
- Not having a backup heat plan or battery backup for temperature monitors during a power outage.
- Ignoring low-temperature alarms or warning signs.
- Failing to open doors and check remote or exterior stairwells, attics, and small rooms with piping.

When pipes burst, insurance companies will look at whether you took reasonable preventive steps. A simple winter checklist, temperature logs, and photos of your setup can help prove you acted responsibly.

REVIEW QUIZ – WINTER FREEZE PREVENTION

1. What is the minimum safe temperature for a riser room?

- A. 32°F
- B. 50°F
- C. 40°F
- D. 25°F

2. Which heating option is best for a riser room?

- A. Space heater
- B. Wall or baseboard heater with thermostat
- C. Electric blanket
- D. Ceiling fan

3. What tool helps monitor temperature remotely?

- A. Flashlight
- B. Wi-Fi thermometer
- C. Tape measure
- D. Cell phone charger

4. True or False: Only exterior pipes can freeze.

- A. True
- B. False
- C. Only in garages
- D. Only in attics

5. What is a common winter mistake?

- A. Ignoring riser room temperature
- B. Checking heaters daily
- C. Sealing air gaps
- D. Using a thermometer

Chapter 6 – Recap

- Freeze damage can disable your fire sprinkler system.
- Riser rooms must stay above 40°F at all times.
- Seal air gaps and use permanent heating solutions.
- Use temperature monitors for alerts and checks.
- Avoid unsafe heating practices and assumptions.

Final Takeaway

Freeze prevention protects your building and your fire sprinkler system. A single frozen pipe can cause massive damage—stay prepared all winter long.

Before the Final Exam – What You Should Know

You're Ready!

You've now reached the end of all the chapters in this handbook. Each section has helped you build real-world confidence in identifying sprinkler problems, staying inspection-ready, and understanding how to protect your property with simple, effective steps. Before taking the Final Exam, take a moment to review everything you've learned. The exam will cover:

- How to locate and operate the correct riser or valve
- How to spot damaged, painted, corroded, or obstructed sprinkler heads
- Common inspection red flags
- Safe escutcheon and sprinkler head replacement steps
- NFPA spare head requirements
- Freeze protection, winter preparation, and riser room best practices
- Proper storage, labeling, readiness, and documentation

This exam is not meant to overwhelm you — it's designed to help confirm that you can apply what you've learned in real life. Every question comes directly from the chapters, diagrams, examples, and field tips in the book. When you're ready, turn the page and begin the Final Exam – Fire Sprinkler Awareness & Readiness Test.

Final Test – Multiple Choice

1. What temperature do most residential sprinkler heads activate at?
 - A. 90°F
 - B. 155°F–175°F
 - C. 300°F
 - D. 40°F

2. True or False: All sprinklers activate at once during a fire.
 - A. True
 - B. False
 - C. Only in large fires
 - D. Only in commercial buildings

3. Which sprinkler system is most common in apartments?
 - A. Dry pipe
 - B. Preaction
 - C. Wet pipe
 - D. Antifreeze

4. What fills the pipes in a dry system?
 - A. Oil
 - B. Nitrogen or air
 - C. Water
 - D. Steam

5. Why is labeling valves important?
- A. It looks professional
 - B. It reduces confusion in emergencies
 - C. It prevents rust
 - D. It helps tenants find them
6. Where should you go first during a sprinkler leak with no fire?
- A. Leasing office
 - B. Break room
 - C. Correct riser/valve location
 - D. Attic
7. True or False: You can leave a valve closed after repairs.
- A. True
 - B. False
 - C. Only during winter
 - D. Only if contractor approved
8. What is the required clearance under sprinkler heads?
- A. 6 inches
 - B. 12 inches
 - C. 18 inches
 - D. 24 inches

9. What should NEVER be hung on sprinkler piping?

- A. Decorations
- B. Clothing
- C. Air fresheners
- D. All of the above

10. What should you do if a sprinkler head is painted?

- A. Clean it
- B. Ignore it
- C. Replace it
- D. Turn it around

11. What is the purpose of an escutcheon (ESC)?

- A. Decoration only
- B. Seal ceiling/wall openings
- C. Hold the pipe up
- D. Protect from dust

12. True or False: ESCs are optional.

- A. True
- B. False
- C. Only in closets
- D. Only in attics

13. What temperature must riser rooms stay above?

- A. 25°F
- B. 32°F
- C. 40°F
- D. 55°F

14. Which heating option is best for a riser room?
- A. Space heater
 - B. Wall/baseboard heater
 - C. Hair dryer
 - D. Heat lamp
15. What should be stored with spare sprinkler heads?
- A. Matching wrench
 - B. Extra ESCs
 - C. ID chart
 - D. All of the above
16. How many spare heads must a building with 250 sprinklers have?
- A. 3
 - B. 6
 - C. 12
 - D. 24
17. True or False: Spare heads can be mixed together in one box.
- A. True
 - B. False
 - C. Only if large box
 - D. Only if labeled
18. Where do pipes freeze fastest?
- A. Interior walls
 - B. Attics and breezeways
 - C. Living rooms
 - D. Bathrooms

19. Why is freeze prevention important?

- A. Saves paint
- B. Prevents burst pipes
- C. Increases water pressure
- D. Lowers rent

20. What tool checks pipe temperature?

- A. Hammer
- B. Thermostat
- C. Infrared thermometer
- D. Ruler

21. True or False: A missing ESC can fail an inspection.

- A. True
- B. False
- C. Only in winter
- D. Only during annual tests

22. Why must spare heads match installed heads?

- A. Looks nicer
- B. Code compliance
- C. Compatibility and rating
- D. Both B and C

23. What should you document after an emergency shutoff?

- A. Weather
- B. Who was working
- C. Valves used & actions taken
- D. What tenants said

24. What is a common winter mistake?

- A. Checking heaters
- B. Ignoring riser room temperature
- C. Sealing gaps
- D. Using thermostat

25. Why is maintenance staff important?

- A. You see system daily
- B. You catch problems early
- C. You prevent failures
- D. All of the above

Final Test – Answer Key

1. B

2. B

3. C

4. B

5. B

6. C

7. B

8. C

9. D

10. C

11. B

12. B

13. C

14. B

15. D

16. B

17. B

18. B

19. B

20. C

21. A

22. D

23. C

24. B

25. D

Emergency Response Quick Guide

Property Name: _____

Main Contact: _____

Maintenance Lead: _____

Fire Sprinkler Contractor: _____

Contractor Phone: _____

Monitoring Company: _____

Monitoring Phone: _____

1. Notify Key Personnel

- Alert property management and maintenance team.
- Contact the fire alarm monitoring company (if applicable).
- Notify your licensed fire sprinkler contractor for emergency service.

2. Confirm the Situation

- Determine if the activation is from a fire, damage, or accidental discharge.
- If fire/smoke is visible — evacuate and call 911.
- If no fire, proceed to locate the flowing sprinkler.

3. Locate the Flowing Zone

- Use posted site maps and riser labels.
- If unsure, check flow switches or sound of running water.

4. Shut Off Only the Affected Area

- Turn the correct control valve slowly until flow stops.
- Do NOT close the entire system unless directed by fire officials.
- Have a second person verify water has stopped.

5. Drain, Inspect, and Secure

- Use main drain to relieve trapped water if required.
- Mop up water and protect electrical systems.

6. Restore System & Report

- Do NOT replace sprinkler heads yourself.
- Document the event and notify management when system is restored.

System Reset & Emergency Contact Reference

System Reset After Repairs

- Once repairs are completed, confirm ALL valves are fully OPEN.
- Verify the sprinkler system is officially back in service.
- Notify the fire alarm monitoring company that the system has been reactivated.
- Document incident details — time, cause, actions taken, and repair notes.
- Only trained staff should ever operate sprinkler valves.

Key Reminder: Document every incident immediately.

Emergency Contact Reference

Contact Type	Phone Number	Notes Primary emergency
Fire Department / AHJ	_____	response Notify for any
Fire Alarm Monitoring Company	_____	impairment Call for
Licensed Fire Sprinkler Contractor	_____	repairs/testing Coordinates
Property Manager / Maintenance Lead	_____	onsite response

Freeze Protection Checklist

Fill this out to make sure your sprinkler system stays safe during cold weather.

Staff Readiness

All staff trained on freeze safety _____

Emergency phone list posted _____

Winter inspection done _____

Contractor report filed _____

Monitoring & Documentation

- WiFi temp monitor working _____
- Backup heater power checked _____
- Daily/weekly temp log filled _____
- Freeze steps posted in riser _____
- Alarm company numbers posted _____

Building & Piping Areas

Pipes in exterior walls insulated _____

Attic/garage pipes checked _____

Stairwells & breezeways inspected _____

Valves & gauges protected _____

Exposed pipes wrapped _____

Riser Room Protection

- Permanent heater working _____

Riser Room Protection

Permanent heater working _____

Thermostat set to 40°F _____

Thermometer on wall _____

All gaps sealed _____ Door

weather stripped _____

No space heaters or cords used _____

Heater power labeled _____

Follow-Up & Verification

Pictures of riser rooms taken _____

Problems fixed and marked _____

Supervisor signed off _____

Key Reminder: Keep every riser room at **40°F (4°C)** or warmer. Checking often saves thousands!

Apartment Fire Sprinkler Pre- Inspection Readiness Checklist

Purpose:

To help managers and maintenance teams prepare for quarterly or annual fire sprinkler inspections under **NFPA 25** and local AHJ requirements. Proper preparation saves time, prevents failed reports, and demonstrates proactive system care.

Riser Room Readiness

- Riser room is unlocked and fully accessible
- Room is clean, well-lit, and free of storage or clutter
- Permanent heater functional ($\geq 40^{\circ}\text{F}$ / 4°C)
- Pressure gauges readable and within normal range
- Valves labeled and in the OPEN position
- Main drain and test valves labeled and operable
- Latest inspection tags or records posted on each riser

System Condition

- No leaks or corrosion visible on pipes, fittings, or valves
- All sprinkler heads clean, free of paint, dust, or obstructions
- Proper 18-inch clearance maintained below heads
- Escutcheons (ESCs) installed and tight against ceiling
- Auxiliary and main drains properly capped
- System monitoring devices (tamper / flow switches) appear intact

Building & Accessibility

- All sprinklered areas unlocked for inspector access
- Ceiling tiles in place (no gaps exposing concealed spaces)
- Storage kept below sprinkler deflectors (18 in. minimum)
- Mechanical rooms and attics free of stored materials near piping
- Fire department connection (FDC) visible and unobstructed
- FDC caps, gaskets, and signage intact and legible

Documentation & Records

- Previous inspection reports on file (NFPA 25 records for 5 years)
- Fire alarm monitoring company contact info posted
- Recent impairment or repair work documented

Freeze-protection log current and available
Sprinkler contractor and building contact list updated

Personnel & Coordination

On-site contact assigned to accompany inspector
Maintenance personnel briefed on valve and system locations
Contractor or inspection company notified of site conditions
Tenants notified if inspection involves alarms or water flow
Any locked areas requiring access pre-arranged

Final Walk-Through

Verify keys available for all riser rooms and restricted areas
Check fire pump room (if applicable) for power and accessibility
Confirm all signage and labeling visible and legible
Ensure backup lighting or flashlights available for dark areas
Note any observed deficiencies for immediate correction

Key Reminder:

A well-prepared property ensures a smoother inspection, fewer deficiencies, and faster system sign-off.
Document every pre-inspection check and keep this sheet filed with your NFPA 25 records.

Basic Fire Sprinkler Systems Handbook

Visual Diagrams & Labels

This section provides labeled reference diagrams and tag examples to help identify key sprinkler system components in apartment buildings. Use these visuals for staff training, riser room signage, and inspection readiness.

1 Typical Building Sprinkler Riser Room Layout

• Main Control Valve – Clearly labeled, normally open. • Check Valve – Prevents backflow into city water supply. • Pressure Gauges – Display system and supply pressure. • Main Drain – Used for flow testing and draining. • Flow Switch – Sends alarm signal when water flows. • Fire Department Connection (FDC) – Exterior point for fire engine connection. Tip: Post a riser diagram on the inside of the riser room door to help new staff identify parts quickly.

2 Sprinkler Head Clearance Reference

Maintain at least **18 inches (45 cm)** of vertical clearance below each sprinkler head. Do not hang items or store materials within this zone. This ensures proper water spray distribution during activation.

3 Standard Label Examples for Valves and Rooms

Component	Example Label Text
Main Control Valve	MAIN SPRINKLER CONTROL VALVE – BUILDING A NORMALLY OPEN – DO NOT CLOSE EXCEPT IN EMERGENCY
Zone Valve	ZONE CONTROL VALVE – 2ND FLOOR EAST NORMALLY OPEN
Main Drain	MAIN DRAIN – OPEN ONLY FOR TESTING
Riser Room Door	SPRINKLER RISER ROOM AUTHORIZED PERSONNEL ONLY
Auxiliary Drain	AUXILIARY DRAIN – KEEP CLOSED WHEN NOT IN USE

4 Suggested Riser Room Sign Layout

Each riser room should have a sign posted on or near the door that includes: • Building and unit number • Type of system (Wet / Dry / Preaction) • Location of main control valve and drains • Emergency contact number for fire sprinkler contractor • Fitter University training QR code or reference for maintenance staff

5 **Valve Position Reference**

Valve Type	Normal Position	Visual Cue
OS&Y Valve	OPEN OPEN Closed	Stem extended upward (visible threads)
Butterfly Valve	one-way flow	Handle aligned parallel to the pipe
Check Valve		Arrow indicates direction of flow

Post valve identification tags and flow direction arrows to assist during emergencies and inspections.

Apartment Fire Sprinkler Systems Handbook

Inspection & Maintenance Log Templates

Purpose:

To help property maintenance and inspection teams document all required checks, tests, and maintenance actions in accordance with **NFPA 25** and local AHJ requirements.

Monthly System Inspection Log

Date	Inspector	Building / Zone	Condition	Notes	Signature

Checklist for Monthly Walkthroughs:

- All valves in OPEN position and sealed or supervised
- Pressure gauges readable and in normal range
- No leaks or corrosion on piping or fittings
- 18-inch sprinkler head clearance maintained
- Riser room heated and free of storage
- Alarm valves and tamper switches accessible
- Escutcheons and covers in place and undamaged

Quarterly Inspection Log (NFPA 25 § 13.3)

Date	Inspector	Test Type	Result / PSI	Deficiencies	Signature

Quarterly Tasks:

- Inspect main drain and waterflow alarm operation
- Test supervisory signals (tamper / flow switches)

Verify spare head inventory and wrench present
Record pressures (supply & system)
Verify control valves locked or electronically supervised

Annual Inspection & Testing Log (NFPA 25 § 13.2)

Inspector

Date		System Type	Pressure	Issues Found	Repair Date	Signature

Annual Tasks:

Main drain test performed and flow verified
Alarm valve operation tested
Gauges calibrated or replaced (every 5 years)
Check valves inspected internally
Full system walkthrough completed with AHJ or contractor

Deficiency & Repair Log

Location

Date		Issue Description	Temporary Fix	Permanent Repair	Completed By	Verified

Recordkeeping Tip: Maintain all inspection and maintenance logs for a minimum of 5 years, as required by NFPA 25 § 4.3. Keep one printed copy in the riser room binder and one digital backup.

Apartment Fire Sprinkler Systems Handbook

System Impairment & Fire Watch Form

Purpose: Use this form whenever any part of the fire sprinkler, alarm, or suppression system is out of service, impaired, or undergoing repair. This form also documents the initiation and completion of a required **Fire Watch** as defined by NFPA 25 and local fire code.

System Impairment Information

Building / Location:	
System Type (Sprinkler, Alarm, Pump, etc.):	
Impairment Start Date & Time:	
Expected Duration:	
Reason for Impairment / Description of Issue:	
Person Reporting Impairment:	
Company / Contractor (if applicable):	
Phone / Email Contact:	

Notifications Made

Fire Department / AHJ Notified(Date/Time):	
Monitoring Company Notified:	
Property Management Notified:	
Insurance Carrier (if required):	

Fire Watch Assignment

Fire Watch StartDate / Time:	
Assigned Personnel / Company:	
Contact Number:	
Fire Watch End Date / Time:	
Supervisor or Manager Authorizing:	

Appendix & Index

Table of Contents

Quick Reference — Codes & Standards

- NFPA 13 – Installation of Sprinkler Systems
- NFPA 13R – Sprinkler Systems in Low-Rise Residential Occupancies • NFPA 25 – Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems • NFPA 241 – Safeguarding Construction, Alteration, and Demolition Operations • IFC – International Fire Code (local enforcement and impairment reporting)

Emergency Contacts Template

Department / Vendor	Contact Name	Phone	Notes
Fire Department / AHJ			
Fire Alarm Monitoring Company			
Licensed Fire Sprinkler Contractor			
Building Maintenance Lead			
Property Management			

Common Terms & Definitions

AHJ – Authority Having Jurisdiction (local fire marshal or inspection authority).

ESC (Escutcheon) – Decorative and protective plate sealing the ceiling penetration around a sprinkler head.

Riser Room – Location where the sprinkler system's main control valves, gauges, and alarms are installed.

FDC (Fire Department Connection) – Exterior connection allowing firefighters to supplement water supply.

Main Drain – Used for testing and draining system zones.

Supervisory Switch – Device monitoring open/closed position of a control valve.

Freeze Protection – Methods preventing water in pipes or riser areas from freezing.

Forms & Logs

- Freeze Season Temperature Log – Record daily riser room temperatures below 40°F.
- Inspection & Maintenance Log – Document monthly system checks, leaks, and repairs.
- Incident Report Form – Record activation events, leaks, or impairments.
- Valve Tag Record – Tracks all valves by zone, location, and position (open/closed).

Training Resources

- **Fitter University Online Training Portal** – www.FitterUniversity.com
- **NFPA Codes & Handbooks** – www.NFPA.org
- **Local AHJ Office Directory** – Verify inspection frequency and permit requirements.

Record Retention

Maintain all system records per NFPA 25 § 4.3:

- Inspection & test reports — retain for 5 years minimum.
- Maintenance & repair records — retain for 5 years minimum.
- Impairment documentation — retain for 1 year after correction.

Tip: Keep hard copies in the riser room binder and digital backups on your secure drive or portal.

Basic Fire Sprinkler Systems Handbook

About the Author & Publisher

Legacy Fire Protection is a full-service fire protection company committed to helping schools, commercial facilities, property managers, and maintenance teams keep their fire protection systems safe, reliable, and ready when they are needed. With extensive hands-on industry experience, Legacy Fire Protection provides fire sprinkler inspections, testing, service, repairs, maintenance, and system support with a practical, straightforward approach.

The Basic Fire Sprinkler Maintenance Handbook was created as part of our commitment to helping facility and maintenance personnel better understand the systems they work around every day. This guide is designed to make fire sprinkler information easier to understand, from identifying valves and common system components to recognizing deficiencies, preparing for inspections, preventing freeze damage, and knowing what to do during an emergency.

Legacy Fire Protection believes that better-informed maintenance teams can help prevent unnecessary damage, reduce downtime, and catch potential problems before they become larger repairs.

In addition to providing free educational resources, Legacy Fire Protection is available for inspections, repairs, maintenance, system testing, troubleshooting, and second opinions on fire protection deficiencies.

For service, inspections, free quotes, or additional fire protection resources, visit us online or contact our team directly.

Legacy Fire Protection

Website: www.Legacyfirep.com

Email:

John@legacyfirep.com © 2026 Legacy Fire
Protection. All rights reserved.

WET RISER LABEL SET

MAIN CONTROL VALVE
WET SYSTEM – NORMALLY OPEN
DO NOT CLOSE EXCEPT IN EMERGENCY

ALARM CHECK VALVE
WET PIPE SYSTEM
INSPECTABLE – DO NOT SHUT OFF

MAIN DRAIN
OPEN ONLY FOR TESTING / RESET
KEEP CLOSED WHEN NOT IN USE

INSPECTOR'S TEST VALVE
SIMULATES SPRINKLER ACTIVATION
USE FOR TESTING ONLY

PRESSURE GAUGE – SYSTEM SIDE
NORMAL RANGE: _____ PSI

PRESSURE GAUGE – SUPPLY SIDE
NORMAL RANGE: _____ PSI

FLOW SWITCH
ACTIVATES FIRE ALARM WHEN WATER MOVES
DO NOT TAMPER

TAMPER SWITCH
MONITORS VALVE POSITION
LEAVE FULLY OPEN

WET RISER ROOM
FIRE SPRINKLER SYSTEM EQUIPMENT
AUTHORIZED PERSONNEL ONLY

WATER MOTOR GONG
OUTDOOR WATERFLOW ALARM
DO NOT BLOCK OR COVER

SYSTEM IDENTIFICATION TAG
BUILDING: _____
RISER #: _____
ZONE / FLOOR: _____

Simple Sprinkler Shut-Off Steps

Step 1 — Check for Fire

Look for smoke or flames. If you see fire, evacuate and call 911. Do NOT shut off the system.

Step 2 — Find the Riser Room

Go to the correct riser room using your site map. Listen for water flow or look for the lit flow switch.

Step 3 — Locate the Right Valve

Find the valve labeled for the area where water is flowing. Never guess — always read the labels.

Step 4 — Turn the Valve Off Slowly

Turn the OS&Y; wheel clockwise or rotate the butterfly valve to CLOSED. Turn slowly until water stops.

Step 5 — Confirm Water Has Stopped

Have a second person check the leaking area or flowing sprinkler head to make sure water is no longer moving.

Step 6 — Call Your Sprinkler Contractor

Tell them what happened so they can repair the system and put it fully back in service.

Step 7 — Document Everything

Write down the time, location, cause, valve used, and any actions taken.

Basic Fire Sprinkler Guide

This guide helps maintenance teams, facility staff, and school personnel better understand basic fire sprinkler systems. Written for beginners, it provides practical, easy-to-follow information on common system components, emergency response, freeze protection, and everyday maintenance awareness.

Inside You Will Learn:

- How basic fire sprinkler systems work
 - How to identify common sprinkler components
 - How to respond during leaks or accidental damage
 - What NOT to shut off or adjust without guidance
 - How to spot common deficiencies and visible damage
 - Freeze protection steps to help prevent costly pipe breaks
 - How to prepare for inspections and document issues
 - Basic maintenance awareness, checklists, and quick guides
-

Free Downloads & Resources

Scan for free checklists, quick guides, and additional fire sprinkler resources from Legacy Fire Protection.



Fire Sprinkler • Fire Alarm • Fire Extinguishers • Hood Suppression

405-410-7600 | john@legacyfirep.com | legacyfirep.com