



Sprinkler Fitter

Guide to Course Content

2025

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Recognition:

To promote transparency and consistency, portions of this document has been adapted from the 2017 Sprinkler Fitter Red Seal Occupational Standard (Employment and Social Development Canada).

A complete version of the Occupational Standard can be found at www.red-seal.ca

STRUCTURE OF THE GUIDE TO COURSE CONTENT

To facilitate understanding of the occupation, this guide to course content contains the following sections:

Task Matrix: a chart which outlines graphically the major work activities, tasks and sub-tasks of this standard detailing the essential skills and the level of training where the content is covered. The Task Matrix is broken down into the following:

Major Work Activity: the largest division within the standard that is comprised of a distinct set of trade activities.

Task: distinct actions that describe the activities within a major work activity.

Sub-task: distinct actions that describe the activities within a task.

Training Profile Chart: a chart which outlines the model for Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training.

Technical Training Course Content for the Sprinkler Fitter trade: a chart which outlines the model for SATCC technical training sequencing. For the harmonized level of training, a cross reference to the Harmonized apprenticeship technical training sequencing, at the learning outcome level, is provided.



TRAINING REQUIREMENTS FOR THE SPRINKLER FITTER TRADE

To graduate from each level of the apprenticeship program, an apprentice must successfully complete the required technical training and compile enough on-the-job experience to total at least 1800 hours each year. Total trade time required is 7200 hours and at least 4 years in the trade.

There are three levels of technical training for Sprinkler Fitter delivered by Saskatchewan Piping Industry at the Regina Campus.

- Level One: 8 weeks
- Level Two: 8 weeks
- Level Three: 8 weeks

The information contained in this document details the technical training delivered for each level of apprenticeship. An apprentice spends approximately 15% of their apprenticeship term in a technical training institute learning the technical and theoretical aspects of the trade. The hours and percentages of technical and practical training may vary according to class needs and progress.

The content of the technical training components is subject to change without notice.

Entrance Requirements for Apprenticeship Training

Your grade twelve transcripts (with no modified classes) or GED 12 is your guarantee that you meet the educational entrance requirements for apprenticeship in Saskatchewan. In fact, employers prefer and recommend apprentices who have completed high school. This ensures the individual has all of the necessary skills required to successfully complete the apprenticeship program, and receive journeyman certification.

Individuals with “modified” or “general” classes in math or science do not meet our entry requirements. These individuals are required to take an entrance assessment prescribed by the SATCC.

English is the language of instruction in all apprenticeship programs and is the common language for business in Saskatchewan. Before admission, all apprentices and/or “upgraders” must be able to understand and communicate in the English language. Applicants whose first language is not English must have a minimum Canadian Language Benchmark Assessment of six (CLB6).

Note: A CLB assessment is valid for a one-year period from date of issue.

Sprinkler Fitter	Math Credit at the Indicated Grade Level ^❶	Science Credit at Grade Level
Sprinkler Fitter	Grade 11	Grade 10
<p>❶ - (One of the following) WA – Workplace and Apprenticeship; or F – Foundations; or P – Pre-calculus, or a Math at the indicated grade level (Modified and General Math credits are not acceptable).</p> <p>*Applicants who have graduated in advance of 2015-2016, or who do not have access to the revised Science curricula will require a Science at the minimum grade level indicated by trade.</p> <p>For information about high school curriculum, including Math and Science course names, please see: http://www.curriculum.gov.sk.ca/</p> <p>Individuals not meeting the entrance requirements will be subject to an assessment and any required training</p>		

SPRINKLER FITTER TASK MATRIX CHART

This chart outlines the major work activities, tasks and sub-tasks from the 2017 Red Seal Occupational Standard. Each sub-task details the corresponding essential skill and level of training where the content is covered. *

* Sub-tasks with numbers in the boxes is where the content will be delivered in training.

A - Performs Common Occupational Skills

20%

A-1 Performs safety-related functions	1.01 Maintains safe work environment 1, In-Context in 2, 3	1.02 Uses personal protective equipment (PPE) and safety equipment 1, In-Context in 2, 3	1.03 Performs lock-out and tag-out procedures 1, In-Context in 2, 3	1.04 Performs work in confined space 1, In-Context in 2, 3	
A-2 Uses and maintains tools and equipment	2.01 Uses hand tools 1, In-Context in 2, 3	2.02 Uses portable and stationary power tools 1, In-Context in 2, 3	2.03 Uses measuring and testing equipment 1, In-Context in 2, 3	2.04 Uses access equipment 1, In-Context in 2, 3	2.05 Uses rigging, hoisting and lifting equipment 1, In-Context in 2, 3
	2.06 Uses soldering and brazing equipment 1, In-Context in 2, 3				
A-3 Organizes work	3.01 Interprets codes, standards, regulations and procedures 1, 2, 3	3.02 Uses drawings and specifications 1, 2, 3	3.03 Uses documentation and reference material 1, 2	3.04 Plans job tasks and procedures 1, 2	3.05 Prepares work site 1, 2
	3.06 Performs layout of systems 1, 2				

A-4 Commission systems	4.01 Commissions water supply systems 2, 3	4.02 Commissions fire protection systems 2, 3
A-5 Uses communication and mentoring techniques	A-5.01 Uses communication techniques 1, 3	A-5.02 Uses mentoring techniques 1, 3

B – Installs Water Supply

15%

B-6 Installs underground water supplies	6.01 Supervises trenching and backfilling (NOT COMMON CORE) 2	6.02 Installs underground piping and components (NOT COMMON CORE) 2	6.03 Flushes underground system 2
B-7 Installs fire pump units	7.01 Determines location of pumps, drivers, controllers and components 3	7.02 Installs pumps, drivers, controllers and components 3	
B-8 Installs fire department connections	8.01 Determines location, size and type of fire department connections 2	8.01 Installs fire department connection piping and components 2	
B-9 Installs private water supply systems	9.01 Installs water tanks 3	9.02 2 Installs related equipment 3	

C – Installs Piping

28%

C-10 Prepares pipe, tube and fittings for installation	10.01 Cuts pipe and tube 1, In-Context in 2, 3	10.02 Bends pipe and tube 1, In-Context in 2, 3	10.03 Threads pipe 1, In-Context in 2, 3	10.04 Grooves pipe 1, In-Context in 2, 3	10.05 Drills pipe and tube 1, In-Context in 2, 3
	10.06 Grinds pipe 1, In-Context in 2, 3	10.07 Prepares fittings 1, In-Context in 2, 3			
C-11 Installs pipe, tube and fittings	11.01 Installs steel pipe, tube and fittings 1, In-Context in 2, 3	11.02 Installs plastic pipe, tube and fittings 1, In-Context in 2, 3	11.03 Installs copper pipe, tube and fittings 1, In-Context in 2, 3	11.04 Paints and labels pipe and tube 1, In-Context in 2, 3	
C-12 Installs piping components	12.01 Selects sprinklers 1	12.02 Installs sprinklers and nozzles 1	12.03 Installs sleeves 1	12.04 Installs supports and hangers 1	12.05 Installs seismic protection 1, 2
	12.06 Installs cross-connection control assemblies 2	12.07 Installs system drainage 1, 2			

D – Installs and Lays Out Fire Protection Systems and Devices

21%

D-13 Installs water-based systems	13.01 Installs wet pipe systems <p style="text-align: center;">1</p>	13.02 Installs dry pipe systems <p style="text-align: center;">1</p>	13.03 Installs antifreeze systems <p style="text-align: center;">1</p>	13.04 Installs preaction/deluge systems <p style="text-align: center;">1, 2</p>	13.05 Installs foam systems <p style="text-align: center;">3</p>
	13.06 Installs standpipe systems <p style="text-align: center;">2</p>	13.07 Installs water mist and hybrid systems <p style="text-align: center;">3</p>			
D-14 Installs specialty fire suppression systems	14.01 Installs dry and wet chemical, clean agent and carbon dioxide systems <p style="text-align: center;">3</p>	14.02 Installs portable extinguishers <p style="text-align: center;">3</p>			
D-15 Installs detection devices	15.01 Installs wet and dry pilot lines <p style="text-align: center;">2</p>	15.02 Installs heat-actuated devices (HADs) (NOT COMMON CORE) <p style="text-align: center;">2</p>	15.03 Installs spark detection systems (NOT COMMON CORE) <p style="text-align: center;">3</p>	15.04 Installs air sampling systems (NOT COMMON CORE) <p style="text-align: center;">3</p>	15.05 Installs electrical detection systems (NOT COMMON CORE) <p style="text-align: center;">3</p>
D-16 Installs signal-initiating devices	16.01 Installs alarm-initiating devices <p style="text-align: center;">2, In-Context in 1, 3</p>	16.02 Installs supervisory-initiating devices <p style="text-align: center;">2, In-Context in 1, 3</p>			



E – INSPECTS, TESTS AND MAINTAINS (ITM) FIRE PROTECTION SYSTEMS

16%

E-17 Maintains and repairs fire protection systems	17.01 Troubleshoots fire protection systems 3	17.02 Repairs deficiencies 3	17.03 Performs scheduled maintenance 3
E-18 Inspects and tests fire protection systems	18.01 Performs scheduled tests 3	18.02 Performs scheduled inspections 3	18.03 Inspects portable fire extinguishers 3

TRAINING PROFILE CHART

This Training Profile Chart represents Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training at the topic level.

Level One	Hours
Common Occupational Skills	60
Installs Piping Components	60
Installs Piping- Layout	61
Installs & Layout Fire Protection Systems & Devices	59
	240

Level Two	Hours
Performs Common Occupational Skills	44
Installs Water Supply	22
Installs Piping	87
Installs & Lays Out Fire Protection Systems & Devices	86
	240

Level Three	Hours
Performs Common Occupational Skills	80
Installs Water Supply	46
Installs & Lays Out Fire Protection Systems & Devices	66
Inspections, Tests & Maintains (ITM) Fire Protection Systems	48
	240

TECHNICAL TRAINING COURSE CONTENT

This chart outlines the model for Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training sequencing. For the harmonized level of training, a cross reference to the Red Seal Occupational Standard (RSOS) apprenticeship technical training sequencing, at the learning outcome level, is provided.

Sub-tasks listed are the minimum to be covered in a topic. Related sub-tasks not listed may be used as a reference and taught “in context” in other topics.

Level One	8 weeks	240 hours
Section One- Performs Common Occupational Skills		60 hours total
Safety		9 hours
<ul style="list-style-type: none"> • demonstrate knowledge of safe work practices • demonstrate knowledge of regulatory requirements pertaining to safety • demonstrate knowledge of personal protective equipment (PPE) and safety equipment, their applications, maintenance and procedures for use • demonstrate knowledge of applications and procedures for locking out/tagging out equipment • demonstrate knowledge of applications and procedures for working in confined spaces 		
RSOS topics covered in this section of training:		
A-1 Performs safety-related functions		
A-1.01 Maintains safe work environment		
A-1.02 Uses personal protective equipment (PPE) and safety equipment		
A-1.03 Performs lock-out and tag-out procedures		
A-1.04 Performs work in confined space		
Tools and Equipment		9 hours
<ul style="list-style-type: none"> • demonstrate knowledge of hand tools, their applications, maintenance and procedures for use • demonstrate knowledge of portable and stationary power tools, their applications, maintenance and procedures for use • demonstrate knowledge of measuring and testing • demonstrate knowledge of measuring and testing equipment, their applications, maintenance and procedures for use 		
RSOS topics covered in this section of training:		
A-2 Uses and maintains tools and equipment		
A-2.01 Uses hand tools		
A-2.02 Uses portable and stationary power tools		
A-2.03 Uses measuring and testing equipment		
A-2.04 Uses access equipment		
A-2.05 Uses rigging, hoisting and lifting equipment		
A-2.06 Uses soldering and brazing equipment		

Access Equipment**4 hours**

- demonstrate knowledge of the selection, assembly and procedures for using access equipment

RSOS subtasks covered in this section of training:**A-2 Organizes Work**A-2.04 Uses Access equipment

Rigging, Hoisting and Lifting**4 hours**

- demonstrate knowledge of rigging, hoisting and lifting equipment, their applications, limitations and procedures for use
- demonstrate knowledge of calculations required to perform rigging, hoisting and lifting operations
- demonstrate knowledge of knots, bends and hitches, their applications and procedures for tying
- demonstrate knowledge of communication methods used for hoisting and lifting
- demonstrate knowledge of the procedures used to plan and perform rigging, hoisting and lifting operations

RSOS subtasks covered in this section of training:**A-2 Organizes Work**A-2.05 USES lifting, rigging and hoisting equipment

Drawings**13 hours**

- demonstrate knowledge of sprinkler system drawings and on-site drawings
- demonstrate knowledge of the procedures to read and interpret drawings and on-site drawings

RSOS subtasks covered in this section of training:**A-3 Organizes Work**A-3.02 Uses drawings and Specifications

Uses Documentation and Reference Material**4 hours**

- demonstrate knowledge of trade-related codes, standards, regulations, procedures and their applications
- demonstrate knowledge of trade-related documentation and reference material and their application

RSOS subtasks covered in this section of training:**A-3 Organizes work**

A-3.01 Interprets codes, regulations and procedures

A-3.02 Uses drawings and specifications

A-3.03 Uses documentation and reference material

A-3.04 Plans job tasks and procedures

A-3.05 Prepares work site

A-3.06 Performs layout of systems

Uses Communication Techniques**4 hours**

- demonstrate knowledge of trade terminology
- demonstrate knowledge of effective communication practices
- demonstrate knowledge of strategies for learning skills in the workplace

RSOS subtasks covered in this section of training:**A-5 Uses communication and mentoring techniques**

A-5.01 Uses communication techniques

A-5.02 Uses mentoring techniques

Soldering, Brazing and Oxy-Acetylene Cutting**9 hours**

- demonstrate knowledge of soldering and brazing equipment, applications and procedures
- demonstrate knowledge of the procedures used to grind pipe
- demonstrate knowledge of the procedures used to braze and solder joints

RSOS subtasks covered in this section of training:**A-2 Uses and maintains tools and equipment**

A-2.06 Uses soldering and brazing equipment

C-10 Prepares pipe, tube and fittings for installation

C-10.06 Grinds pipe

Principles of Electricity**4 hours**

- identify principles of electricity including direct and alternating current flow, electrolysis and electromagnetism
- identify and explain Ohm's Law
- identify hazards and describe safe work practices when working with electricity
- identify tools and equipment used to test electrical circuits and describe the procedure for use
- identify different types of circuits and describe their characteristics and purposes

RSOS subtasks covered in this section of training:

- This section of training exceeds the minimum sequencing as set out in the Sprinkler Fitter RSOS

Section Two- Installs Piping Components**60 hours total****Steel Pipe and Fittings – Pipe Preparation****17 hours**

- demonstrate knowledge of steel pipe, tube and fittings.
- demonstrate knowledge of the procedures used to install steel pipe, tube and fittings.

RSOS subtasks covered in this section of training:**C-10 Prepares pipe, tube and fittings for installation**

C-10.01 Cuts pipe and tube

C-10.02 Bends pipe and tube

C-10.03 Threads pipe

C-10.04 Grooves pipe

C-10.05 Drills pipe and tube

C-10.06 Grinds pipe

C-10.07 Prepares fittings

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C-11 Installs pipe, tube and fittings

- C-11.01 Installs steel pipe, tube and fittings
- C-11.02 Installs plastic pipe, tube and fittings
- C-11.03 Installs copper pipe, tube and fittings
- C-11.04 Paints and labels pipe and tube

Plastic Pipe and Fittings – Pipe Preparation**17 hours**

- demonstrate knowledge of plastic pipe, tube and fittings
- demonstrate knowledge of the procedures used to install plastic pipe, tube and fittings

RSOS subtasks covered in this section of training:**C-10 Prepares pipe, tube and fittings for installation**

- C-10.01 Cuts pipe and tube
- C-10.02 Bends pipe and tube
- C-10.03 Threads pipe
- C-10.04 Grooves pipe
- C-10.05 Drills pipe and tube
- C-10.06 Grinds pipe
- C-10.07 Prepares fittings

C-11 Installs pipe, tube and fittings

- C-11.01 Installs steel pipe, tube and fittings
- C-11.02 Installs plastic pipe, tube and fittings
- C-11.03 Installs copper pipe, tube and fittings
- C-11.04 Paints and labels pipe and tube

Copper Pipe, Fittings and Tubing – Pipe Preparation**9 hours**

- demonstrate knowledge of copper pipe, tube and fittings.
- demonstrate knowledge of the procedures used to install copper pipe, tube and fittings
- demonstrate knowledge of the procedures used to braze and solder joints

RSOS subtasks covered in this section of training:**C-10 Prepares pipe, tube and fittings for installation**

- C-10.01 Cuts pipe and tube
- C-10.02 Bends pipe and tube
- C-10.03 Threads pipe
- C-10.04 Grooves pipe
- C-10.05 Drills pipe and tube
- C-10.06 Grinds pipe
- C-10.07 Prepares fittings

C-11 Installs pipe, tube and fittings

- C-11.01 Installs steel pipe, tube and fittings
- C-11.02 Installs plastic pipe, tube and fittings
- C-11.03 Installs copper pipe, tube and fittings
- C-11.04 Paints and labels pipe and tube

Supports and Hangers**17 hours**

- demonstrate knowledge of supports and hangers and their installation procedures and requirements

RSOS subtasks covered in this section of training:**C-12 Installs piping components**

- C-12.01 Selects sprinklers
- C-12.02 Installs sprinklers and nozzles
- C-12.03 Installs sleeves
- C-12.04 Installs supports and hangers
- C-12.07 Installs system drainage

Section Three- Installs Piping Layout**61 hours total****Sprinkler Heads and Nozzles****40 hours**

- demonstrate knowledge of sprinklers and nozzles and their selection
- demonstrate knowledge of the procedures used to install sprinklers and nozzles

RSOS subtasks covered in this section of training:**C-12 Installs piping components**

- C-12.01 Selects sprinklers
- C-12.02 Installs sprinklers and nozzles

Pipe Layout and Install 1**17 hours**

- demonstrate knowledge of the procedures to plan and organize jobs
- demonstrate knowledge of procedures to receive materials
- demonstrate knowledge of procedures used to plan for and prepare work sites
- demonstrate knowledge of procedures used to store, secure, organize and maintain materials
- demonstrate knowledge of sprinkler system layout
- demonstrate knowledge of the tools, materials and procedures used to prepare pipe fittings
- demonstrate knowledge of the tools, equipment, materials used to cut, grind, groove, thread, bend, paint and label pipe and tube
- demonstrate knowledge of the procedures to cut, grind, groove, thread, bend, paint and label pipe and tube
- demonstrate knowledge of pipe sleeves and their installation

RSOS subtasks covered in this section of training:**C-12 Installs piping components**

- C-12.01 Selects sprinklers
- C-12.02 Installs sprinklers and nozzles
- C-12.03 Installs sleeves
- C-12.04 Installs supports and hangers
- C-12.07 Installs system drainage

System Drainage I**4 hours**

- demonstrate knowledge of system drainage and their operation and characteristics

RSOS subtasks covered in this section of training:**C-12 Installs piping components**

C-12.07 Installs system drainage

Section Four- Installs & Lays Out Fire Protection Systems & Devices **59 hours total**

Wet Pipe Systems**17 hours**

- demonstrate knowledge of wet pipe systems, and their operation and characteristics
- demonstrate knowledge of the procedures used to install wet pipe systems and components

RSOS subtasks covered in this section of training:**D-Installs water-based systems**

D-13.01 Installs wet pipe systems

Antifreeze Systems**4 hours**

- demonstrate knowledge of antifreeze systems, their operation, and characteristics
- demonstrate knowledge of the procedures to install and maintain antifreeze systems

RSOS subtasks covered in this section of training:**D-Installs water-based systems**

D-13.03 Installs antifreeze systems

Dry Pipe Systems**20 hours**

- demonstrate knowledge of dry pipe systems, their operation and characteristics
- demonstrate knowledge of the procedures used to install dry pipe systems and their components

RSOS subtasks covered in this section of training:**D-Installs water-based systems**

D-13.02 Installs dry pipe systems.

Pre-Action/Deluge Systems**18 hours**

- demonstrate knowledge of pre-action/deluge systems, their applications and operating principles

RSOS subtasks covered in this section of training:**D-Installs water-based systems**

D-13.04 Installs preaction/deluge systems

Level One topics from the RSOS that are taught in context:

D -16 Installs signal-initiating devices

For details regarding the In Context Topic, see page 27



Level Two**8 weeks****240 hours**

Section One- Performs Common Occupational Skills**44 hours total**

Drawings II**24 hours**

- drawings II Demonstrate knowledge of sprinkler system drawings and on-site drawings
- demonstrate knowledge of the procedures to read and interpret drawings and on-site drawings rate
- demonstrate knowledge of the procedures to draw and label orthographic and isometric drawings
- demonstrate knowledge of the procedures to read and interpret information pertaining to sprinkler systems found in construction drawings

RSOS subtasks covered in this section of training:**A-3 Organizes work**

A-3.01 Interprets codes, regulations and procedures

A-3.02 Uses drawings and specifications

A-3.03 Uses documentation and reference material

Commissions Water Supply I**8 hours**

- demonstrate knowledge of the selection, assembly and procedures for using access equipment

RSOS subtasks covered in this section of training:**A-Commissions Systems**

A-4.01 Commissions water supply systems

A-4.02 Commissions fire protection systems

Commissions Fire Protection Systems I**12 hours**

- demonstrate knowledge of the procedures to commission fire protection systems

RSOS subtasks covered in this section of training:**A-Commissions Systems**

A-4.01 Commissions water supply systems

A-4.02 Commissions fire protection systems

Section Two- Installs Water Supply**22 hours total**

Underground Water Supply**18 hours**

- demonstrate knowledge of safety procedures and requirements for trenching and backfilling in accordance with codes and regulations
- demonstrate knowledge of communication practices for trenching and backfilling
- demonstrate knowledge of clearances and tolerances
- demonstrate knowledge of water source connections
- demonstrate knowledge of underground piping and their components' installation procedures
- demonstrate knowledge of flushing requirements of underground systems.

- demonstrate knowledge of safe work procedures for flushing of underground systems

RSOS subtasks covered in this section of training:

D-13 Installs water-based systems

- D-13.04 Installs preaction/deluge systems
- D-13.06 Installs standpipe systems

Fire Department Connections

4 hours

- demonstrate knowledge of fire department equipment and their installation procedures

RSOS subtasks covered in this section of training:

B-8 Installs fire department connections

- B-8.01 Determines location, size and type of fire department connections
- B-8.02 Installs fire department connection piping and components

Section Three- Installs Piping

87 hours total

Pipe Layout and Install II

42 hours

- demonstrate knowledge of the procedures to plan and organize jobs
- demonstrate knowledge of procedures to receive materials
- demonstrate knowledge of procedures used to plan for and prepare work sites
- demonstrate knowledge of procedures used to store, secure, organize and maintain materials
- demonstrate knowledge of sprinkler system layout
- demonstrate knowledge of the procedures to paint and label pipe and tube
- demonstrate knowledge of pipe sleeves and their installation

RSOS subtasks covered in this section of training:

A-3 Organizes work

- A-3.04 Plans job tasks and procedures
- A-3.05 Prepares work site
- A-3.06 Performs layout of systems

D-15 Installs detection devices

- D-15.01 Installs wet and dry pilot lines
- D-15.02 Installs heat-actuated devices (HAD). (NCC)

Seismic Protection

14 hours

- demonstrate knowledge of the procedures to select and locate sway/seismic bracing
- demonstrate knowledge of the procedures used to install sway/seismic bracing

RSOS subtasks covered in this section of training:

C-12 Installs piping components

- C-12.05 Installs seismic protection
- C-12.06 Installs cross-connection control assemblies
- C-12.07 Installs system drainage

Cross Connection Control**24 hours**

- demonstrate knowledge of cross-connection control assemblies, their characteristics, purpose, applications, and operation
- demonstrate knowledge of the procedures to install cross-connection control assemblies

RSOS subtasks covered in this section of training:**C-12 Installs piping components**C-12.06 Installs cross-connection control assemblies

Drainage II**7 hours**

- demonstrate knowledge of system drainage, and their operation and characteristics
- demonstrate knowledge of the procedures to install system drainage and components according to code requirements

RSOS subtasks covered in this section of training:**C-12 Installs piping components**

C-12.05 Installs seismic protection

C-12.06 Installs cross-connection control assemblies

C-12.07 Installs system drainage

Section Four- Installs & Lays Out Fire Protection Systems & Devices**86 hours total****Pre-Action/Deluge Systems****36 hours**

- demonstrate knowledge of pre-action/deluge systems, their applications and operating principles
- demonstrate knowledge of installation requirements and associated test procedures for pre- action/deluge systems

RSOS subtasks covered in this section of training:**D-13 Installs water-based systems**

D-13.04 Installs preaction/deluge systems

D-13.06 Installs standpipe systems

Standpipe Systems**24 hours**

- demonstrate knowledge of standpipe and hose systems, their applications and operating principles
- demonstrate knowledge of installation requirements and associated test procedures for standpipe systems

RSOS subtasks covered in this section of training:**D-13 Installs water-based systems**

D-13.04 Installs preaction/deluge systems

D-13.06 Installs standpipe systems

Detection Devices

14 hours

- demonstrate knowledge of the procedures used to install, test and maintain wet and dry pilot lines and their associated pilot line detectors
- demonstrate knowledge of the procedures used to install, test and maintain HADs and their associated components

RSOS subtasks covered in this section of training:

D-15 Installs detection devices

D-15.01 Installs wet and dry pilot lines

D-15.02 Installs heat actuated devices (HADs) (NCC)

Signal Initiating Devices

12 hours

- demonstrate knowledge of the procedures and requirements to install, test, and maintain alarm-initiating devices
- demonstrate knowledge of procedures and requirements to install, test and maintain supervisory-initiating devices

RSOS subtasks covered in this section of training:

D-16 Installs signal-initiating devices

D-16.01 Installs alarm-initiating devices

D-16.02 Installs supervisory-initiating devices

Level Two topics from the RSOS that are taught in context:

A-1 Performs safety-related functions

A-2 Uses and maintains tools and equipment

C-10 Prepares pipe, tube and fittings for installation

C-11 Installs pipe, tube and fittings

D-13 Installs water-based systems

For details regarding the In Context Topic, see page 27

Level Three**8 weeks****240 hours**

Section One- Performs Common Occupational Skills**80 hours total**

Drawings III**24 hours**

- demonstrate knowledge of sprinkler system drawings and on-site drawings
- demonstrate knowledge of the procedures to read and interpret drawings and on-site drawings rate
- demonstrate knowledge of the procedures to draw and label orthographic and isometric drawings
- demonstrate knowledge of the procedures to read and interpret information pertaining to sprinkler systems found in construction drawings

RSOS subtasks covered in this section of training:**A-3 Organizes work**

A-3.01 Interprets codes, regulations and procedures

A-3.02 Uses drawings and specifications

Commissions Water Supply II**9 hours**

- demonstrate knowledge of the procedures used to commission water supply systems

RSOS subtasks covered in this section of training:**A-4 Commission systems**A-4.01 Commissions water supply systems

Commissions Fire Protection Systems**12 hours**

- demonstrate knowledge of the procedures to commission fire protection systems

RSOS subtasks covered in this section of training:**A-4 Commission systems**A-4.02 Commissions fire protection systems

Mentoring**14 hours**

- demonstrate knowledge of trade terminology
- demonstrate knowledge of effective communication practices
- demonstrate knowledge of strategies for learning skills in the workplace
- demonstrate knowledge of strategies for teaching workplace skills

RSOS subtasks covered in this section of training:**A-5 Uses communication and mentoring techniques**

A-5.01 Uses communication techniques

A-5.02 Uses mentoring techniques

Job Planning**21 hours**

- demonstrate knowledge of the procedures to produce material take-off lists
- demonstrate knowledge of the procedures to read and interpret 3D drawings
- demonstrate knowledge of trade-related codes, standards, regulations, procedures and their applications

RSOS subtasks covered in this section of training:

- 3.01 Interprets codes, regulations and procedures
3.02 Uses drawings and specifications
-

Section Two- Installs Water Supply**46 hours total**

Fire Pumps**30 hours**

- demonstrate knowledge of pumps, drivers, controllers, and components
- demonstrate knowledge of water source connections
- demonstrate knowledge of fire pump components and their installation

RSOS subtasks covered in this section of training:**B-7 Installs fire pump units**

- B-7.01 Determines location of pumps, drivers, controllers and components
B-7.02 Installs pumps, drivers, controllers and components
-

Private Water Supply Systems**16 hours**

- demonstrate knowledge of water tanks
- demonstrate knowledge of installation of water tanks and related equipment

RSOS subtasks covered in this section of training:**B-9 Installs private water supply systems**

- B-9.01 Installs water tanks
B-9.02 Installs related equipment
-

Section Three- Installs & Lays Out Fire Protection Systems & Devices**66 hours total**

Foam Systems**12 hours**

- demonstrate knowledge of foam systems, their applications and operating principles
- demonstrate knowledge of installation requirements and associated test procedures for foam systems

RSOS subtasks covered in this section of training:

- D-13.05 Installs foam systems.
-

Water Mist & Hybrid Systems**18 hours**

- demonstrate knowledge of water mist and hybrid systems, their applications and operating principles
- demonstrate knowledge of installation requirements for water mist and hybrid systems

RSOS subtasks covered in this section of training:**D-13 Installs water-based systems**D-13.07 Installs water mist and hybrid systems

Wet & Dry Chemical Systems**10 hours**

- demonstrate knowledge of wet and dry chemical systems and their operation and characteristics
- demonstrate knowledge of installation of wet and dry chemical systems
- demonstrate knowledge of inspection, and testing of wet and dry chemical systems
- demonstrate knowledge of procedures used to service, maintain, and remove wet and dry chemical systems

RSOS subtasks covered in this section of training:**D-14 Installs specialty fire suppression systems**D-14.01 Installs dry and wet chemical, clean agent and carbon dioxide systems

Clean Agent Systems**8 hours**

- demonstrate knowledge of clean agent systems and their operation and characteristics
- demonstrate knowledge of installation of clean agent systems
- demonstrate knowledge of inspection and testing of clean agent systems
- demonstrate knowledge of procedures used to service, maintain, and remove clean agent systems

RSOS subtasks covered in this section of training:**D-14 Installs specialty fire suppression systems**14.01 Installs dry and wet chemical, clean agent and carbon dioxide systems

CO2 Systems**9 hours**

- demonstrate knowledge of CO2 systems and their operation and characteristics
- demonstrate knowledge of installation of CO2 systems
- demonstrate knowledge of inspection and testing of CO2 systems
- demonstrate knowledge of procedures used to service, maintain, and remove CO2 systems

RSOS subtasks covered in this section of training:**D-14 Installs specialty fire suppression systems**D-14.01 Installs dry and wet chemical, clean agent and carbon dioxide systems

Detection Devices II**9 hours**

- demonstrate knowledge of the procedures used to install, test and maintain spark detection systems and their associated components
- demonstrate knowledge of the procedures used to install, test and maintain air sampling systems and their associated components
- demonstrate knowledge of the procedures used to install, test and maintain electrical detection systems and their associated components

RSOS subtasks covered in this section of training:**D-15 Installs detection devices**

D-15.03 Installs spark detection systems (NCC)

D-15.04 Installs air sampling systems (NCC)

D-15.05 Installs electrical detection systems (NCC)

Section Four- Inspection, Tests & Maintains (ITM) Fire Protection Systems**48 hours total****Repair & Maintenance****20 hours**

- demonstrate knowledge of procedures and requirements used to troubleshoot, repair and maintain fire protection systems and their components
- demonstrate knowledge of the relationship between sprinkler systems and fire panels

RSOS subtasks covered in this section of training:**E- 17 Maintains and repairs fire protection systems**

E-17.01 Troubleshoots fire protection systems

E-17.02 Repairs deficiencies

E-17.03 Performs scheduled maintenance

Inspection & Testing**20 hours**

- demonstrate knowledge of procedures and requirements used to test fire protection systems and their components
- demonstrate knowledge of the relationship between sprinkler systems and fire panels
- demonstrate knowledge of the procedures and requirements to perform scheduled inspections of fire protection systems and their components

RSOS subtasks covered in this section of training:**E-18 Inspects and tests fire protection systems**

E-18.01 Performs scheduled tests

E-18.02 Performs scheduled inspections

Fire Extinguishers**8 hours**

- demonstrate knowledge of procedures and requirements used to install portable fire extinguishers
- demonstrate knowledge of the procedures used to inspect and maintain portable fire extinguishers

RSOS subtasks covered in this section of training:**D-14 Installs specialty fire suppression systems**

D-14.02 Installs portable extinguishers

E-18 Inspects and tests fire protection systems

E-18.03 Inspects portable fire extinguishers

Level Three topics from the RSOS that are taught in context:*A-1 Performs safety-related functions**A-2 Uses and maintains tools and equipment**A-3 Organizes work**C-10 Prepares pipe, tube and fittings for installation**D-16 Installs signal-initiating devices**For details regarding the In Context Topic, see page 27*

In Context Topics

In context means learning that has already taken place and is being applied to the applicable task. Learning outcomes for in context topics are accomplished in other topics in that level.

A-1 Performs safety-related functions

- A-1.01 Maintains safe work environment
- A-1.02 Uses personal protective equipment (PPE) and safety equipment
- A-1.03 Performs lock-out and tag-out procedures
- A-1.04 Performs work in confined space

A-2 Uses and maintains tools and equipment

- A-2.01 Uses hand tools
- A-2.02 Uses portable and stationary power tools
- A-2.03 Uses measuring and testing equipment
- A-2.04 Uses access equipment
- A-2.05 Uses rigging, hoisting and lifting equipment
- A-2.06 Uses soldering and brazing equipment

A-3 Organizes work

- A-3.01 Interprets codes, regulations and procedures
- A-3.02 Uses drawings and specifications
- A-3.03 Uses documentation and reference material
- A-3.04 Plans job tasks and procedures
- A-3.05 Prepares work site
- A-3.06 Performs layout of systems

C-10 Prepares pipe, tube and fittings for installation

- C-10.01 Cuts pipe and tube
- C-10.02 Bends pipe and tube
- C-10.03 Threads pipe
- C-10.04 Grooves pipe
- C-10.05 Drills pipe and tube
- C-10.06 Grinds pipe
- C-10.07 Prepares fittings

C-11 Installs pipe, tube and fittings

- C-11.01 Installs steel pipe, tube and fittings
- C-11.02 Installs plastic pipe, tube and fittings
- C-11.03 Installs copper pipe, tube and fittings
- C-11.04 Paints and labels pipe and tube

D-13 Installs water-based systems

- D-13.01 Installs wet pipe systems
- D-13.02 Installs dry pipe systems
- D-13.03 Installs antifreeze systems
- D-13.04 Installs preaction/deluge systems
- D-13.05 Installs foam systems
- D-13.06 Installs standpipe systems
- D-13.07 Installs water mist and hybrid systems

D-16 Installs signal-initiating devices

- D-16.01 Installs alarm-initiating devices
- D-16.02 Installs supervisory-initiating devices