



ONTARIO COLLEGE OF TRADES
ORDRE DES MÉTIERS DE L'ONTARIO

Apprenticeship Training Standard

Sprinkler and Fire Protection Installer

Trade Code: 427A

Development Date: January 2010

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**COMPETENCY ANALYSIS PROFILE
SPRINKLER AND FIRE PROTECTION INSTALLER – 427A**

SKILL SETS

SKILLS

PROTECT SELF AND OTHERS 5440.0	Comply with acts, regulations, codes, standards, and directives	Utilize personal protective equipment	Maintain personal protective equipment	Maintain safe workplace	Control hazards and hazardous conditions, equipment and materials
	5440.01	5440.02	5440.03	5440.04	5440.05
	Manually move equipment, supplies, and components	Employ simple first aid relating to illness and occupational injury	Report injuries to supervisor and first- aid personnel	Respond to audio and visual alarms	Follow company and worksite fire emergency procedures
	5440.06	5440.07	5440.08	5440.09	5440.10
	Handle hazardous/toxic materials	Assess worksite conditions	Apply confined space and exit procedures	Perform lockout, tagging and hold-off procedures	Manage personal health
	5440.11	5440.12	5440.13	5440.14	5440.15

COMMUNICATE IN THE WORKPLACE 5441.0	Communicate orally	Communicate in writing	Communicate graphically	Communicate by computer	Communicate by mechanical and electronic devices
	5441.01	5441.02	5441.03	5441.04	5441.05
	Communicate by hand signals	Build and maintain interpersonal relationships	Practice customer relations (internal and external)	Present a professional image	Mentor co-workers
	5441.06	5441.07	5441.08	5441.09	5441.10

SPRINKLER & FIRE PROTECTION INSTALLER

SKILL SETS

SKILLS

RIG, HOIST, LIFT, AND HANDLE MATERIALS 5442.0	Plan rig layout 5442.01	Select rigging equipment and components 5442.02	Utilize rigging equipment and components 5442.03	Maintain rigging equipment and components 5442.04	Disassemble rigging equipment and components 5442.05
	Select hoisting and lifting equipment and components 5442.06	Utilize hoisting and lifting equipment and components 5442.07	Secure hoisting and lifting equipment and components 5442.08	Maintain hoisting and lifting equipment and components 5442.09	Disassemble hoisting and lifting equipment and components 5442.10
	Calculate the weight of the load to be lifted 5442.11	Coordinate loading and off-loading operations 5442.12			
PLAN AND PREPARE FOR INSTALLATIONS 5443.0	Obtain project drawings 5443.01	Review project drawings 5443.02	Correlate information from drawings 5443.03	Assess job site conditions 5443.04	Estimate material, labour, and equipment for projects 5443.05
	Schedule projects 5443.06	Prepare as-built drawings 5443.07			
DESIGN SYSTEMS 5444.0	Verify occupancy classification and design criteria 5444.01	Verify water supply source 5444.02	Verify system drawings 5444.03	Calculate system hydraulic demand 5444.04	Obtain approval of working plans and documentation 5444.05

SKILLS

INSTALL WATER SUPPLY	Determine site excavation location	Prepare site for excavation	Monitor excavation	Install private water supply	Connect to the water supply
	5446.01	5446.02	5446.03	5446.04	5446.05
	Install underground piping and components	Install thrust blocks and restraining devices	Install hydrants and control valves	Complete installation of water supply	Supervise backfill operations
	5446.06	5446.07	5446.08	5446.09	5446.10

FABRICATE FIRE PROTECTION SYSTEMS	Identify fabrication area	Organize material for fabrication	Prepare piping and fittings for site installation	Fabricate hangers, brackets, and supports	
5447.0	5447.01	5447.02	5447.03	5447.04	

SPRINKLER & FIRE PROTECTION INSTALLER

SKILL SETS

SKILLS

INSTALL HEADERS, VALVES, AND TRIM 5448.0	Verify the underground water supply	Isolate water supply	Perform system bleed-off	Install check, control and drain valves	Install support and brace headers
	5448.01	5448.02	5448.03	5448.04	5448.05
	Test fire protection headers and components				
	5446.06				

INSTALL FIRE PROTECTION SYSTEMS 5449.0	Install clean agent fire suppression system	Install high and low-pressure carbon dioxide systems	Install dry and wet chemical systems	Install standpipe and hose rack systems	Install wet systems
	5449.01	5449.02	5449.03	5449.04	5449.05
	Install anti-freeze systems	Install dry systems	Install combination dry pipe and pre-action systems	Install pre-action systems	Install deluge systems
	5449.06	5449.07	5449.08	5449.09	5449.10
	Install foam systems	Install water mist systems	Install detection systems		
	5449.11	5449.12	5449.13		

SPRINKLER & FIRE PROTECTION INSTALLER

SKILL SETS

SKILLS

COMMISSION FIRE PROTECTION SYSTEMS 5450.0	Commission clean agent fire suppression systems	Commission high and low-pressure carbon dioxide systems	Commission dry and wet chemical systems	Commission standpipe and hose rack systems	Commission wet systems
	5450.01	5450.02	5450.03	5450.04	5450.05
	Commission anti-freeze systems	Commission dry systems	Commission combination dry pipe and pre-action systems	Commission pre-action systems	Commission deluge systems
	5450.06	5450.07	5450.08	5450.09	5450.10
	Commission foam systems	Commission water mist systems	Commission detection systems		
	5450.11	5450.12	5450.13		

INSTALL PUMPS, DRIVERS, AND CONTROLLERS 5451.0	Verify the water supply	Select fire pump assembly	Identify the location of the fire pump installation	Prepare site location for installation of the fire pump assembly	Install fire pump assembly
	5451.01	5451.02	5451.03	5451.04	5451.05
	Install controllers and auxiliary devices	Install fuel system for diesel drivers	Install jockey pumps	Commission fire pump assembly and auxiliary components	
	5451.06	5451.07	5451.08	5451.09	

SPRINKLER & FIRE PROTECTION INSTALLER

SKILL SETS

SKILLS

INSTALL AND MAINTAIN PORTABLE FIRE EXTINGUISHERS	Select portable extinguishers	Install portable extinguishers	Perform scheduled inspections of extinguishers and components	Maintain extinguishers and components	
5452.0	5452.01	5452.02	5452.03	5452.04	

INSPECT FIRE PROTECTION SYSTEMS	Coordinate notification of authorities	Arm and disarm control panels on fire protection systems	Inspect clean agent fire suppression systems	Inspect high and low-pressure carbon dioxide systems	Inspect dry and wet chemical systems
5453.0	5453.01	5453.02	5453.03	5453.04	5453.05
	Inspect standpipe and hose rack systems	Inspect wet systems	Inspect anti-freeze systems	Inspect dry systems	Inspect combination dry pipe and pre- action systems
	5453.06	5453.07	5453.08	5453.09	5453.10
	Inspect pre- action systems	Inspect deluge systems	Inspect foam systems	Inspect water mist systems	Inspect fire pump assembly and auxiliary components
	5453.11	5453.12	5453.13	5453.14	5453.15
	Inspect water supplies and auxiliary components				
	5453.16				

SPRINKLER & FIRE PROTECTION INSTALLER

SKILL SETS

SKILLS

TEST FIRE PROTECTION SYSTEMS	Coordinate notification of authorities	Disable and enable fire alarm control and releasing panels	Test clean agent fire suppression systems	Test high and low-pressure carbon dioxide systems	Test dry and wet chemical systems
5454.0	5454.01	5454.02	5454.03	5454.04	5454.05
	Test standpipe and hose rack systems	Test wet systems	Test anti-freeze systems	Test dry systems	Test combination dry pipe and pre-action systems
	5454.06	5454.07	5454.08	5454.09	5454.10
	Test pre-action systems	Test deluge systems	Test foam systems	Test water mist systems	Test fire pump assembly and auxiliary components
	5454.11	5454.12	5454.13	5454.14	5454.15
	Test water supplies and auxiliary components				
	5454.16				

MAINTAIN FIRE PROTECTION SYSTEMS	Maintain clean agent fire suppression systems	Maintain high and low-pressure carbon dioxide systems	Maintain dry and wet chemical systems	Maintain standpipe and hose rack systems	Maintain wet systems
5455.0	5455.01	5455.02	5455.03	5455.04	5455.05
	Maintain anti-freeze systems	Maintain dry systems	Maintain combination dry pipe and pre-action systems	Maintain pre-action systems	Maintain deluge systems
	5455.06	5455.07	5455.08	5455.09	5455.10
	Maintain foam systems	Maintain mist systems	Maintain fire pump assembly and auxiliary components		
	5455.11	5455.12	5455.13		

PREFACE

This training standard was developed by the Ministry of Training, Colleges, and Universities (MTCU), in partnership with the Provincial Advisory Committees and in consultation with representatives from the industry. This document is intended to be used by apprentice, supervisor/trainer and sponsor/employer as a "blueprint" for training and as a prerequisite for completion and certification.

This training document becomes the apprentice's only record of workplace training performance. Supervisor/trainer and apprentice are required to sign off and date the skills following each successful acquisition, unless a skill is marked shaded (optional).

The care and maintenance of this training document are the joint responsibility of the apprentice and the sponsor/employer. By signing off the skill, the supervisor/trainer and the apprentice are indicating that the apprentice has demonstrated competence of the skill. This training standard has been developed specifically for documenting the apprentice's acquisition of skills of the trade.

The technical and work processes that this apprenticeship program involves have been reviewed to include requirements for emerging green technologies, managing surplus or scrap materials, conservation (materials and energy), preventing spills and escape of contaminated, toxic or hazardous gases and waste.

As apprenticeable trades and occupations are more mindful of the need for environmental sustainability, they are adopting materials, tools and procedures that offer environmental harm reduction.

Please Note: Apprenticeship Training and Curriculum Standards were developed by the Ministry of Training, Colleges and Universities (MTCU). As of April 8th, 2013, the Ontario College of Trades (College) has become responsible for the development and maintenance of these standards. The College is carrying over existing standards without any changes.

However, because the Apprenticeship Training and Curriculum Standards documents were developed under either the Trades Qualification and Apprenticeship Act (TQAA) or the Apprenticeship and Certification Act, 1998 (ACA), the definitions contained in these documents may no longer be accurate and may not be reflective of the Ontario College of Trades and Apprenticeship Act, 2009 (OCTAA) as the new trades legislation in the province. The College will update these definitions in the future. Meanwhile, please refer to the College's website (<http://www.collegeoftrades.ca>) for the most accurate and up-to-date information about the College. For information on OCTAA and its regulations, please visit: <http://www.collegeoftrades.ca/about/legislation-and-regulations>

DEFINITIONS

ACA

Apprenticeship and Certification Act, 1998

Certificate of Apprenticeship (C of A)

Certification issued to individuals who have demonstrated that they have completed an apprenticeship in Ontario.

Certificate of Qualification (C of Q)

Certification issued to C of Q applicants who have achieved a passing grade on the certification exam for their trade.

Competency Analysis Profile

A document that identifies the training needs of an individual trade and details the skills/skill sets that must be demonstrated.

Competence

The ability of an individual to perform a skill repeatedly and without assistance in the workplace to the standard set out in the Training Standard or Schedule of Training.

General Performance Objective (On-the-job Skill Set)

Describes set of skills, which include all performance objectives under that skill set.

Industry Committee (IC) - under the ACA and Provincial Advisory Committee (PAC) under the TQAA

Under the ACA and TQAA, the Minister may appoint a provincial committee in any trade or group of trades to advise the Minister in matters relating to the establishment and operation of apprenticeship training programs and trades qualifications.

Journeyman or Equivalent

A person who has acquired the knowledge and skills in a trade, occupation or craft as attested to by a provincial or territorial authority.

Mandatory

Status assigned to unshaded individual skills, skill sets or general performance objective which must be signed off for the apprentice to complete their program.

Optional

Status assigned to shaded individual skills, skills sets or general performance objective for which sign-off is not required for the apprentice to complete the program.

Sign-off

Signature of the sponsor/employer of record or an individual to whom, that sponsor or employer has delegated signing authority, indicating an apprentice's achievement of competence.

Skill

Individual skill described in the Training Standard (note: does not mean the larger skill groups referred to in the Training Standard as Skill Sets, Training Units, or General Performance Objective, but the individual skills that make up those groups).

Skill Sets

Group of individual skills found in the Training Standard (may also be called Training Unit or General Performance Objective)

Skill Set Completion Form

Lists all skill sets and includes space for sign-off by sponsor/employer of record.

Sponsor/Employer

Means a person that has entered into a registered training agreement under which the person is required to ensure that an individual is provided with workplace-based training in a trade, other occupation or skill set as part of an apprenticeship program approved by the Director.

Sponsor/Employer of Record

Refers to the sponsor or employer documented as the signatory to the current training agreement or contract. In order for a sponsor/employer to be considered for the training of apprentices, they must identify that the workplace has qualified journeypersons or equivalent on site and can identify that the workplace has the tools, equipment, materials, and processes which have been identified by Provincial Advisory Committees (PACs) or Industry Committees (ICs) to be required for the trade.

Supervisor

An individual, who oversees the execution of a task; oversees the actions or work of others.

Trainer

A qualified trainer in a compulsory trade is a journeyperson with a Certificate of Qualification or in a voluntary trade is an individual who is considered equivalent to a journeyperson with a Certificate of Qualification.

TQAA

Trades Qualification and Apprenticeship Act.

Training Standard

A document that has been written in concise statements, which describe how well an apprentice must perform each skill in order to become competent. In using the document, trainers will be able to ensure that the apprentice is developing skills detailed for the occupation.

IMPORTANT DIRECTIONS

Apprentice

1. All complete skills or skill sets must be signed and dated by both the apprentice and sponsor/employer when either all terms of the contract have been completed or the apprentice leaves the employ of the employer.
2. It is the responsibility of the apprentice to inform the local Apprenticeship Client Services Office regarding the following changes:
 - change of sponsor/employer address
 - change of apprentice name or address
 - transfer to a new sponsor/employer.
3. The Skill Set Completion Form must be completed and signed by the current sponsor/employer and presented to the local Apprenticeship Client Services Office at the fulfillment of all terms of a Contract of Apprenticeship/Training Agreement.
4. The apprentice completion form with the Completed and Authorized Training Standard must be presented to the local Apprenticeship Client Services Unit.

Sponsors/Employers and Supervisors/Trainers

The Training Standard identifies skills required for this trade/occupation and its related training program.

This Training Standard has been written in concise statements, which describe how an apprentice must perform each skill in order to become competent. Competence means being able to perform the task to the required standard.

In using this Training Standard, supervisors/trainers will be able to ensure that the apprentice is developing the skills detailed for the trade/occupation.

Supervisors/Trainers and apprentices are required to sign off and date the skills following each successful acquisition.

Sponsors/Employers participating in this training program will be designated as the Signing Authority and are required to attest to successful achievement by signing the appropriate box included at the end of each skill set.

NOTICE OF COLLECTION OF PERSONAL INFORMATION

1. At any time during your apprenticeship training, you may be required to show this training standard to the Ministry of Training, Colleges and Universities (the Ministry). You will be required to disclose the signed Apprenticeship Completion form to the Ministry in order to complete your program. The Ministry will use your personal information to administer and finance Ontario's apprenticeship training system, including confirming your completion and issuing your certificate of apprenticeship.
2. The Ministry will disclose information about your program completion and your certificate of apprenticeship to the Ontario College of Trades, as it is necessary for the College to carry out its responsibilities.
3. Your personal information is collected, used and disclosed by the Ministry under the authority of the Ontario College of Trades and Apprenticeship Act, 2009.
4. Questions about the collection, use and disclosure of your personal information by the Ministry may be addressed to the:

Manager, Employment Ontario Contact Centre
Ministry of Training, Colleges and Universities
33 Bloor St. E, 2nd floor, Toronto, Ontario M7A 2S3
Toll-free: 1-800-387-5656; Toronto: 416-326-5656
TTY: 1-866-533-6339 or 416-325-4084.

ROLES & RESPONSIBILITIES OF APPRENTICE, SPONSOR/EMPLOYER AND SUPERVISOR/TRAINER

Apprentice “Apprenticeship is Learning On-the-job”

- Practice safe work habits.
- Use your apprenticeship training standard as a journal to keep track of which skills you have achieved.
- Talk over your training plan with your Training Consultant, Employer, Union, or Sponsor.
- Know what tools are required for your trade and how to use them.
- Ask questions and keep asking.
- Talk to your employer about your training needs.
- Demonstrate enthusiasm and good work habits.
- Ensure that you and your supervisor/trainer sign off skill/skill sets upon demonstration of competency.

Sponsor/Employer “Training is an Investment”

- Demonstrate safe work habits.
- Attest to successful achievement by signing the skill/skills sets.
- Provide opportunities and time for the apprentice to learn the trade.
- Offer practical trade training experiences that cover all of the skill sets.
- Foster work ethics that support training while minimizing productivity losses.
- Set out clear expectations, then recognize or reward performance excellence.
- Involve both the apprentice and supervisor/trainer in developing the training plan.
- Use the Training Standard as a monitoring tool and part of regular performance evaluations.
- Select supervisors/trainers with good communication skills and who work well with others.
- Encourage supervisors/trainers to take upgrading courses - (e.g. Train the Trainer, Mentor Coach, etc).
- Complete the Skill Set Completion Form once the apprentice has demonstrated competency in the training.
- Ensure that the apprentice always works under the direction of or has access to a qualified supervisor/trainer.
- Vary the apprentice’s exposure to all the skills set out in the training standard.

Supervisor/Trainer

- Demonstrate safe work habits.
- Treat apprentices fairly and with respect.
- Use the Training Standard as a guide to evaluating competence in each skill area. In using the Training Standard, supervisors/trainers will be able to ensure that the apprentice is developing skills detailed for the trade/occupation.
- Review the Training Standard with the apprentice and develop a training plan.
- Respond fully to all questions.
- Be patient. Explain what is to be done then, show how it is done, and then let the apprentice demonstrate the task.
- Provide continuous feedback.
- Sign off individual skills/skill sets once the apprentice demonstrates competence in the skill.

Suggestions for Assessing the Progress of the Apprentice in the Workplace

- Use informal daily observation.
- Provide constructive feedback to build confidence.
- Allow the supervisor/trainer time to teach and demonstrate the skills.
- Take prompt action wherever problems occur.
- Conduct regular performance reviews involving the apprentice, supervisor/trainer and sponsor/employer.
- Use the Training Standard as the reference for establishing the competency of the apprentice.

SKILL SET COMPLETION FORM

SKILLS SETS	TITLE	SIGNING AUTHORITY
5440.0	PROTECT SELF AND OTHERS	
5441.0	COMMUNICATE IN THE WORKPLACE	
5442.0	RIG, HOIST, LIFT AND HANDLE MATERIALS	
5443.0	PLAN AND PREPARE FOR INSTALLATIONS	
5444.0	DESIGN SYSTEMS	
5445.0	UTILIZE TOOLS AND EQUIPMENT	
5446.0	INSTALL WATER SUPPLY	
5447.0	FABRICATE FIRE PROTECTION SYSTEMS	
5448.0	INSTALL HEADERS, VALVES, AND TRIM	
5449.0	INSTALL FIRE PROTECTION SYSTEMS	
5450.0	COMMISSION FIRE PROTECTION SYSTEMS	
5451.0	INSTALL PUMPS, DRIVERS, AND CONTROLLERS	
5452.0	INSTALL AND MAINTAIN PORTABLE FIRE EXTINGUISHERS	
5453.0	INSPECT FIRE PROTECTION SYSTEMS	
5454.0	TEST FIRE PROTECTION SYSTEMS	
5455.0	MAINTAIN FIRE PROTECTION SYSTEMS	

5440.0 PROTECT SELF AND OTHERS

GENERAL PERFORMANCE OBJECTIVES

Protect self and others by: complying with acts, regulations, codes, standards, and directives; utilizing personal protective equipment; maintaining personal protective equipment; maintaining personal protective equipment; maintaining safe workplace; controlling hazards and hazardous conditions, equipment, and materials; manually moving equipment supplies, and components; employing simple first aid relating to illness and occupational injury; reporting injuries to supervisor and first-aid personnel; responding to audio-visual alarms; following company and worksite fire procedures; handling hazardous/toxic materials; assessing worksite conditions; applying confined space entry and exit procedures; performing lockout, tagging, and hold-off procedures; and managing personal health; according to the written content of documents and verbal direction of regulatory authorities, regulatory requirements, codes, safety requirements, site conditions, site procedures, recommended standards and guidelines, victims condition, manufacturers' recommendations and specifications, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5440.01 **Comply with acts, regulations, codes, standards, and directives** including *Occupational Health and Safety Act (OHSA)*, *Environmental Protection Act (EPA)*, *Dangerous Goods Transportation Act (DGTA)*, *Workplace Safety Insurance Act (WSIA)*, *Trades Qualification and Apprenticeship Act (TQAA)*, *Building Code Act (BCA)*, *Ontario Building Code (OBC)*, *Ontario Fire Code (OFC)*, *National Fire Code (NFC)*, *National Building Code (NBC)*, and *Workplace Hazardous Materials Information System (WHMIS)*; the *Construction Safety Association of Ontario (CSAO)*, *Canadian Standards Association (CSA)* *Canadian Radio-television and Telecommunications Commission (CRTC)*, *Technical Standards and Safety Authority (TSSA)*, *National Fire Protection Association (NFPA)* standards, municipal requirements, and company policies, by reading, interpreting, and following direction; according to the written content of documents and verbal direction of regulatory authorities.

Date Completed

Apprentice

Supervisor/Trainer

5440.0 PROTECT SELF AND OTHERS...cont'd

5440.02 Utilize personal protective equipment including hard hats, gloves, glasses, goggles, masks, face shields, ear protectors/plugs, coveralls, reflector vests, safety footwear, fall-protection equipment, respirators, harnesses, breathing apparatus, air samplers, gas detectors, barrier creams, and radiation badges; by inspecting, selecting, wearing, and adjusting equipment to ensure the safety of self and others; according to regulatory requirements, safety requirements site conditions, manufacturers' recommendations and specifications, and. company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.03 Maintain personal protective equipment including hard hats, gloves, glasses, goggles, masks, face shields, ear protectors/plugs, coveralls, reflector vests, safety footwear, fall-protection equipment, respirators, harnesses, breathing apparatus, air samplers, gas detectors, and radiation badges; by checking for wear, breaks, tears, cracks, leakage, and loose and defective components, inspecting and analysing performance and function, and by storing or noting/tagging deficiencies and removing devices and components from service to ensure the safety of self and others; according to regulatory requirements, safety requirements, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.04 Maintain safe workplace by removing, and disposing of excess or unwanted materials, recycling and reusing materials, positioning equipment, identifying the location of first-aid supplies and equipment, erecting protective barriers and signs, and ensuring work area is free of obstructions to ensure the safety of self and others; according to regulatory requirements, codes, safety requirements job requirements, site procedures, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.0 PROTECT SELF AND OTHERS...cont'd

5440.05 Control hazards and hazardous conditions, equipment, and materials including worksite conditions, heavy equipment operations, hoisting and lifting operations, overhead operations, material handling, and storage; by visually inspecting and analysing performance and function, checking for obstructions, and taking remedial action to ensure the safety of self and others and to protect the environment; according to regulatory requirements, codes, safety requirements, site conditions, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.06 Manually move equipment, supplies, and components by utilizing safe lifting, lowering, carrying, pushing, climbing and pulling techniques to protect self and others against injury; according to weight and size to be moved, regulatory requirements, codes, safety requirements, job requirements, site procedures, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.07 Employ simple first aid relating to illness and occupational injury including sudden illness, burns, cuts, sprains, chemical and smoke inhalations, and contaminants in eyes, so that the condition of the victim is stabilized and prepared for further first-aid treatment, and by obtaining emergency medical assistance as required; according to the victim's condition, regulatory requirements, safety requirements, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.08 Report injuries to supervisor and first-aid personnel promptly and clearly, ensuring that the injured person is attended to and by describing precisely how the incident occurred; according to regulatory requirements, safety requirements, site procedures, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.0 PROTECT SELF AND OTHERS...cont'd

5440.09 Respond to audio-visual alarms including warning signs, danger notices, alarm bells, whistles, and buzzers, by recognizing the sign/alarm and taking action; according to regulatory requirements, company environmental safety procedures, and site conditions.

Date Completed

Apprentice

Supervisor/Trainer

5440.10 Follow company and worksite fire emergency procedures by assessing the type and severity of the fire, activating the alarm system, taking action to suppress a minor fire, reporting the fire, and following evacuation procedures; using communication skills, extinguishers, hoses, and fire blankets to protect self and others; according to regulatory requirements, codes, site procedures, manufacturers' recommendations and specifications, safety requirements, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.11 Handle hazardous/toxic materials including gases, acids, solvents, and cleaners; by identifying, selecting, transporting, and storing them to protect self and others, property and the environment; according to regulatory requirements, codes, site conditions, manufacturers' recommendations and specifications, safety requirements, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.12 Assess worksite conditions by inspecting lighting and ventilation, confined space entry, height clearances, floor/base conditions, environmental conditions, presence of hazardous conditions, and unsafe equipment and materials and by reporting unsafe conditions to designated supervisory personnel to minimize injury to self, bystanders or co-workers and no damage to equipment; according to regulatory requirements, codes, safety requirements, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.0 PROTECT SELF AND OTHERS...cont'd

5440.13 Apply confined space entry and exit procedures by assessing site conditions, checking for ventilation, chemical hazards, electrical hazards, warning signs, space constraints and proximity to operating machinery to minimize the danger to the safety of self and others; using air monitors, safety lines, breathing apparatus, lighting equipment, communication skills and devices and personal protective equipment; according to regulatory requirements, codes, safety requirements, site conditions, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.14 Perform lockout, tagging, and hold-off procedures by isolating hazardous or defective equipment, advising site authority or designate, installing a lockout device and retaining the key, attaching tags, performing the repairs, and removing the lockout device on completion of work; using hand tools, tags, locks, keys, log books, communication skills and personal protective equipment, so that self and others are safe from electrical shock and other dangers; according to regulatory requirements, codes, safety requirements, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5440.15 Manage personal health by adopting strategies to recognize the signs of fatigue and taking effective measures, maintaining physical and mental fitness, alertness, and a healthy diet, managing stress and time and ensuring adequate rest, and accessing assistance as required to ensure the well being of self and the safety of others; according to safety requirements, recommended standards/guidelines, company policies and procedures, and working conditions.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5441.0 COMMUNICATE IN THE WORKPLACE

GENERAL PERFORMANCE OBJECTIVE

Communicate in the workplace by communicating orally, in writing, by graphics, computers, mechanical and electronic devices, and hand signals; building and maintaining interpersonal relationships; practising customer relations (internal and external); presenting a professional image; and mentoring co-workers; according to regulatory requirements, codes, safety requirements, job requirements, site conditions, international hand signal standards, manufacturers' recommendations and specifications, business etiquette, netiquette, workplace standards, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5441.01 **Communicate orally** by speaking clearly, concisely and tactfully, listening attentively, seeking validation of the conversation to ensure understanding, conveying and summarizing information, and engaging in constructive feedback; according to business etiquette, workplace standards, and company policies.

Date Completed

Apprentice

Supervisor/Trainer

5441.02 **Communicate in writing** clearly, concisely, tactfully, and in a timely manner; interpreting and verifying details, editing and verifying for language usage, completeness, and accuracy, and ensuring that correspondence/documentation requiring signature has been completed; using correspondence, memoranda, work and change orders, project and environmental reports, check-off forms/sheets, proposals, estimates, test certificates, deficiency reports, and accident forms; according to regulatory requirements, job requirements, business etiquette, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5441.0 COMMUNICATE IN THE WORKPLACE...cont'd

5441.03 Communicate graphically by preparing and interpreting installation, isometric and as-built drawings, verifying thoroughness, accuracy and presenting a clear and concise understanding of the work to be performed; using sketches, construction drawings, and three- dimensional models; according to job requirements, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5441.04 Communicate by computer including software and peripheral equipment; using keyboards, touch screens, internet, e-mail, scanners, and printers, accessing files, materials and parts, and verifying that instructions and procedures are conveyed accurately and efficiently; according to job requirements, manufacturers' recommendations and specifications, netiquette, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5441.05 Communicate by mechanical and electronic devices ensuring that clear, concise, and accurate instructions and procedures are conveyed safely and efficiently; using public address systems, telephones, pagers, radios, and wireless devices; according to regulatory requirements, codes, job requirements, safety requirements, site conditions, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5441.06 Communicate by hand signals ensuring that information is given and received in full view and on a timely basis, and responding to the message, so that self and others are protected; according to regulatory requirements, codes, safety requirements, job requirements, international hand signal standards, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5441.0 COMMUNICATE IN THE WORKPLACE...cont'd

5441.07 Build and maintain interpersonal relationships by networking, maintaining confidentiality, respecting others, collaborating, consulting, participating at meetings, demonstrating availability, applying conflict resolution and problem-solving skills and methodologies, identifying and recommending alternative solutions, and listening effectively; using verbal and non-verbal methods to convey messages/meaning, using acceptable language in the workplace, recognizing and respecting the chain of authority on the job site, explaining problems and procedures, and obtaining approvals from clients; according to business etiquette, workplace standards, and company policies.

Date Completed

Apprentice

Supervisor/Trainer

5441.08 Practice customer relations (internal and external) by demonstrating professionalism with customers, other trade personnel, and the general public, following site protocol, handling enquiries, confirming delivery and installation of fire protection systems and components, sharing information about customer requirements with company staff, advising of delays, reporting general concerns, and keeping customer and business information confidential; using oral and written communication skills, and communication devices; according to business etiquette, workplace standards, and company policies.

Date Completed

Apprentice

Supervisor/Trainer

5441.09 Present a professional image by communicating appropriately, wearing clothing and equipment according to location/event, maintaining clean clothing, and following a hygiene regimen so that personal communication, appearance and hygiene are not offensive to clients or co-workers; according to safety requirements, business etiquette, workplace standards, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5441.0 COMMUNICATE IN THE WORKPLACE...cont'd

5441.10 Mentor co-workers by demonstrating and explaining workplace practices, procedures, and requirements, promoting company policies and procedures, assessing workplace performance and progress, and ensuring timely feedback is provided, to enable a positive learning process and achievement of learning objectives; using communication skills and physical demonstration; according to business etiquette, adult learning principles, workplace standards, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5442.0 RIG, HOIST, LIFT, AND HANDLE MATERIALS

GENERAL PERFORMANCE OBJECTIVE

Rig, hoist, and handle materials by: planning rig layout; selecting rigging equipment and components; utilizing rigging equipment and components; maintaining rigging equipment and components; disassembling rigging equipment and components; selecting hoisting and lifting equipment and components; utilizing hoisting and lifting equipment and components; maintaining hoisting and lifting equipment and components; disassembling hoisting and lifting equipment and components; calculating the weight of the load to be lifted; and coordinating loading and off-loading operations; according to regulatory requirements, safety requirements, job requirements, site conditions, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5442.01 Plan rig layout including pipes, ladders, cables, ropes, slings, pads, shackles, clamps, block and tackle, motorized chain hoists, suspension equipment, and fasteners; by visually inspecting site and/or interpreting written documentation, sketches, and working drawings, assessing the type of equipment, load characteristics, and the load distribution of equipment, performing calculations, and documenting and/or sketching rig layout; according to regulatory requirements, safety requirements, job requirements, site conditions, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.0 RIG, HOIST, LIFT AND HANDLE MATERIALS...cont'd

5442.02 Select rigging equipment and components including pipes, cables, ropes, slings, pads, shackles, clamps, block and tackle, motorized chain hoists, suspension equipment, and fasteners; by checking for wear, crimps, fraying, fit, fractures, cracks, corrosion, alignment, lubrication, and loose and defective components; inspecting and assessing performance and function and exchanging and/or identifying equipment and components for servicing; using measuring and testing devices and personal protective equipment; according to regulatory requirements, safety requirements, job requirements, site conditions, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.03 Utilize rigging equipment and components including pipes, cables, ropes, slings, pads, shackles, clamps, block and tackle, motorized chain hoists, suspension equipment, and fasteners; by positioning, moving, and adjusting the equipment, and placing or attaching the rigging to the load according to the weight, balance, and size of the equipment to be moved or lifted; checking for capacity, stability, and alignment, and inspecting and testing and analysing performance and function; using hand and power tools, personal protective equipment; measuring, levelling, and fastening devices, and voice, electronic, and communication devices; according to regulatory requirements, safety requirements, job requirements, site conditions, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.0 RIG, HOIST, LIFT AND HANDLE MATERIALS...cont'd

5442.04 Maintain rigging equipment and components including pipes, cables, ropes, slings, pads, shackles, clamps, block and tackle, motorized chain hoists, suspension equipment, and fasteners; by checking for wear, crimps, fraying, fit, fractures, cracks, corrosion, alignment, lubrication, and loose and defective components; inspecting, testing, and assessing performance and function, exchanging, aligning, lubricating, storing, or removing/tagging defective equipment and components from service, and ensuring equipment performs efficiently; using hand and power tools, fastening devices, personal protective equipment, cleaners, abrasives, and lubricants; according to regulatory requirements, safety requirements, job requirements, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.05 Disassemble rigging equipment and components including pipes, cables, ropes, slings, pads, shackles, clamps, block and tackle, motorized chain hoists, suspension equipment, and fasteners; by checking for wear, crimps, fraying, fit, fractures, cracks, corrosion, alignment, lubrication, and loose components; inspecting, testing, and assessing performance and function, exchanging, aligning, lubricating, storing, or tagging/removing defective equipment and components for servicing, and ensuring equipment is stored securely and ready for use on the next job; using hand and power tools, fastening devices, personal protective equipment, cleaners, abrasives, and lubricants; according to regulatory requirements, safety requirements site conditions, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.0 RIG, HOIST, LIFT AND HANDLE MATERIALS...cont'd

5442.06 Select hoisting and lifting equipment and components including cranes, personnel and equipment lifts, chain hoists, hooks and cables, jacks, slings, trolleys, ropes, block and tackle, lift trucks; by checking for wear, crimps, fraying, fractures, cracks, corrosion, alignment, lubrication, stability, noise, and loose and defective components; inspecting and assessing performance and function, and exchanging and/or identifying equipment and components for servicing; using personal protective equipment and measuring devices; according to regulatory requirements, job requirements, safety requirements, site conditions, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.07 Secure hoisting and lifting equipment and components including cranes, personnel and equipment lifts, chain hoists, hooks and cables, jacks, slings, trolleys, ropes, block and tackle, lift trucks; by checking for fit, wear, crimps, fraying, fractures, cracks, corrosion, alignment, lubrication, stability, noise, and loose and defective components, and inspecting and assessing performance and function, and exchanging, tagging/removing defective equipment; using hand and power tools, personal protective equipment; according to regulatory requirements, safety requirements, site conditions, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.0 RIG, HOIST, LIFT AND HANDLE MATERIALS...cont'd

5442.08 Utilize hoisting and lifting equipment and components including cranes, personnel and equipment lifts, chain hoists, hooks and cables, jacks, slings, trolleys, ropes, block and tackle, lift trucks; by positioning, moving and adjusting the equipment, and placing or attaching the material to the equipment, according to the weight, balance, and size of the equipment to be moved or lifted; by checking for capacity, wear, crimps, fraying, fractures, cracks, corrosion, alignment, lubrication, stability, noise, and loose and defective components; inspecting and assessing performance and function, and exchanging or identifying equipment and components for servicing; using hand and power tools, personal protective equipment, measuring, levelling, and fastening devices, and voice, electronic, and hand communication; according to regulatory requirements, safety requirements, job requirements, site conditions, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.09 Maintain hoisting and lifting equipment and components including cranes, personnel and equipment lifts, chain hoists, hooks and cables, jacks, slings, trolleys, ropes, block and tackle, lift trucks; by checking for wear, crimps, fraying, fractures, cracks, corrosion, alignment, lubrication, stability, noise, and loose and defective components; inspecting and assessing performance and function, aligning, lubricating, exchanging, storing, or removing equipment and components from service, and ensuring equipment performs efficiently; using hand and power tools, personal protective equipment, cleaners, abrasives, and lubricants; according to regulatory requirements, safety requirements, job requirements, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.0 RIG, HOIST, LIFT AND HANDLE MATERIALS...cont'd

5442.10 Disassemble hoisting and lifting equipment and components including cranes, personnel and equipment lifts, chain hoists, hooks and cables, jacks, slings, trolleys, ropes, block and tackle, lift trucks; by checking for wear, crimps, fraying, fractures, cracks, corrosion, lubrication, leaks, stability, noise, and loose and defective components; inspecting and assessing performance and function, lubricating, and exchanging, tagging/removing defective equipment, and ensuring equipment is stored securely and ready for use on the next job; using hand and power tools, elevated work platforms, ladders, personal protective equipment, cleaners, abrasives, and lubricants; according to regulatory requirements, safety requirements, site conditions, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.11 Calculate the weight of the load to be lifted by inspecting material to be hoisted, referring to load charts and manufacturers' charts and specifications when performing calculations to ensure that rigging and hoisting is performed safely and efficiently within the equipment capabilities and limitations; according to regulatory requirements, safety requirements, job requirements, site conditions, Safe Working Load (SWL) charts, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5442.0 RIG, HOIST, LIFT AND HANDLE MATERIALS...cont'd

5442.12 **Coordinate loading and off-loading operations** by inspecting and conveying clear and concise directions to co-workers and equipment operators, and verifying directions are received as intended, assessing performance and ensuring that rigging and hoisting operations are performed safely to protect self and others; using hand signals and/or voice communication, and communication devices; according to regulatory requirements, safety requirements, job requirements, site conditions, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5443.0 PLAN AND PREPARE FOR INSTALLATIONS

GENERAL PERFORMANCE OBJECTIVE

Plan and prepare for installations by: obtaining project drawings; reviewing project drawings; correlating information from drawings; assessing job site conditions; estimating material, labour and equipment for projects; scheduling projects; and preparing as-built drawings; according to regulatory requirements, codes, NFPA, safety requirements, job requirements, site conditions, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5443.01 Obtain project drawings, including architectural, mechanical, electrical, structural and project specifications; by reading the title block and/or page, and cross-checking drawings and schematics to verify that the correct set has been obtained and is complete to enable the preparation for an efficient start-up and completion of the project; according to customer requirements, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5443.02 Review project drawings including architectural, mechanical, electrical, structural and project specifications; by interpreting charts, guides, and schedules, reading and assessing architectural and piping symbols, ensuring adherence to design specifications, and noting and reporting errors/omissions; according to regulatory requirements, NFPA, job requirements, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5443.0 PLAN AND PREPARE FOR INSTALLATIONS...cont'd

5443.03 Correlate information from drawings including architectural, mechanical, electrical, structural and project specifications; by cross-checking for compatibility between drawings and relevance to the job specifications, and developing a checklist of requirements, limitations, questions and a preliminary list of equipment and material requirements, so that issues and requirements are noted and available for a pre-job meeting; using lists, recording devices, and communication skills; according to regulatory requirements, codes, safety requirements, job requirements, site conditions, and company policies procedures.

Date Completed

Apprentice

Supervisor/Trainer

5443.04 Assess job site conditions by visually inspecting site and verifying accessibility for people and equipment; by checking for conformance to drawings and other information received, referring to checklists of questions, measuring equipment parameters, and checking for obstructions; using observation, communication skills, and measuring devices; according to regulatory requirements, codes, safety requirements, job requirements, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5443.05 Estimate material, labour and equipment for projects including piping, pumps, hangers, fittings, valves, sprinkler heads and auxiliary devices, lifting, hoisting and rigging devices, tools, manpower and skill requirements and the job hours required; using lists and other calculation methods, drawings, installation manuals, and estimating sheets to ensure adherence to the design specifications, so that the material and personnel will be scheduled for the job; according to regulatory requirements, codes, safety requirements, NFPA, job requirements, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5443.0 PLAN AND PREPARE FOR INSTALLATIONS...cont'd

5443.06 Schedule projects by preparing work plans and flow charts, coordinating work with other trades, participating in job-site meetings, and verifying material and personnel requirements and delivery dates of material; ensuring efficient handling, storage, and installation of equipment, and detailing time-lines; using oral and written communication skills, and electronic and mechanical devices; according to regulatory requirements, codes, safety requirements, job requirements, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5443.07 Prepare as-built drawings by identifying and recording revisions and sketching or drawing graphics of the modifications to the actual site installation of the fire protection system and creating a labeling system and maintenance/equipment directory; using communication skills, and submitting as-built drawings to supervisor/management in a timely manner; according to regulatory requirements, codes, NFPA, job requirements, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5444.0 DESIGN SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Design systems by: verifying occupancy classification and design criteria; verifying water supply source; verifying system drawings; calculating system hydraulic demand; and obtaining approval of working plans and documentation; according to regulatory requirements, codes, NFPA, job specifications, accepted methods of calculation, site conditions, company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5444.01 Verify occupancy classification and design criteria by determining the building use, building structural materials, structure dimensions, and commodity classification, so that the design criteria will meet requirements; according to regulatory requirements, codes, NFPA, job specifications, and site conditions.

Date Completed

Apprentice

Supervisor/Trainer

5444.02 Verify water supply source including public/private, gravity tank, and reservoir; by interpreting reference materials and data; using plans, architectural drawings, city maps, and water flow test data, ensuring that the source is adequate, and meets design criteria; according to regulatory requirements, NFPA, job requirements, and site conditions.

Date Completed

Apprentice

Supervisor/Trainer

5444.03 Verify system drawings including plan, elevation, isometric, schematics, using basic drawing equipment and Computer-Assisted Design (CAD) printouts to validate that they meet design criteria; according to regulatory requirements, codes, NFPA, job requirements, and company standards.

Date Completed

Apprentice

Supervisor/Trainer

5444.0 DESIGN SYSTEM...cont'd

5444.04 Calculate system hydraulic demand by determining friction loss and pipe sizing needed to meet the water flow requirements of the design criteria; using formulas, calculation devices, computers and software; according to NFPA, codes and accepted methods of calculation.

Date Completed

Apprentice

Supervisor/Trainer

5444.05 Obtain approval of working plans and documentation including shop drawings, sketches, and fire protection system drawings, verifying that they are complete and submitting them for approval in a timely manner for approval; according to regulatory requirements, codes, NFPA, job requirements, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5445.0 UTILIZE TOOLS AND EQUIPMENT

GENERAL PERFORMANCE OBJECTIVE

Utilize tools and equipment by: selecting, using, maintaining, storing or identifying for servicing, hand and power tools and accessories; testing devices; selecting, assembling, maintaining and dismantling scaffolds and accessories; and utilizing step and extension ladders; according to regulatory requirements, NFPA, safety requirements, Safe Working Load (SWL) charts, job requirements, site conditions, manufacturers' recommendations and specifications, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5445.01 Utilize hand tools and accessories including pipe wrenches, fastening devices, cutting tools, grinding tools, levelling tools, and measuring devices; by checking for wear, fit, alignment, and broken tools and accessories; selecting, inspecting, testing, and analysing performance and function, and by using, exchanging, aligning, cleaning, lubricating, reconditioning, so that the tools and accessories will function as intended, and storing or removing tools and accessories from service; according to safety requirements, job requirements, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5445.02 Utilize power tools and accessories including threading, grooving and drilling machines, cutting and welding devices, and tool accessories (bits, blades, etc.); by checking for wear, fit, alignment, lubrication, and damaged components or parts, including cords and plugs, housings, and control devices; selecting, inspecting, testing, and analysing performance and function, and by operating, exchanging, aligning, cleaning, lubricating, reconditioning, so that the tools and accessories will function as intended, and storing or removing tools and accessories from service; according to job requirements, manufacturers' recommendations and specifications, company policies and procedures, and safety requirements.

Date Completed

Apprentice

Supervisor/Trainer

5445.0 UTILIZE TOOLS AND EQUIPMENT...cont'd

5445.03 Utilize testing devices including distance measuring devices, voltmeters, refractometers, callipers, backflow test kits, gauges, pitot tube, flowmeters, checking for pressure, leaks, water flow, specific gravity, electrical current; by inspecting, operating, testing, analysing performance and function, making adjustments, so that the equipment will function as intended, and storing or identifying devices for servicing, so that they will perform efficiently; according to regulatory requirements, NFPA, safety requirements, job requirements, manufacturers' recommendations and specifications, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5445.04 Select scaffolds and accessories including rolling towers, suspended platforms and swing stages, frames, pipes, braces, platform materials, and fastening devices; by checking for wear, fit, cracks, alignment, stability, and missing or damaged components and parts, and by inspecting, testing, and analysing performance and function, exchanging, reconditioning, aligning, or removing equipment and components from service; using personal protective equipment; according to regulatory requirements, safety requirements, manufacturers' recommendations and specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5445.05 Assemble scaffolds and accessories including rolling towers, suspended platforms and swing stages, frames, pipes, braces, platform materials, and fastening devices; by checking for wear, fit, vibration, cracks, alignment, stability, lubrication, and missing or damaged components and parts so that self and others will be safe during use and by inspecting and analysing performance and function; using hand, power, and/or specialized tools, levelling and fastening devices, personal protective equipment, rigging and hoisting devices, and personnel and equipment lifts; according to regulatory requirements, Safe Working Load (SWL) charts, safety requirements, job requirements, manufacturers' recommendations and specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5445.0 UTILIZE TOOLS AND EQUIPMENT...cont'd

5445.06 Maintain scaffolds and accessories including rolling towers, suspended platforms and swing stages, frames, pipes, braces, platform materials, and fastening devices; by checking for wear, fit, vibration, cracks, alignment, stability, lubrication, and missing or damaged components and parts; inspecting and testing and analysing performance and function, and by exchanging, adjusting, tightening, reconditioning, aligning, or removing equipment and components from service, so that self and others will be safe during use; using hand, power, and/or specialized tools; levelling and fastening devices, personal protective equipment, rigging and hoisting devices, and personnel and equipment lifts; according to regulatory requirements, safety requirements, Safe Working Load (SWL) charts, job requirements, manufacturers' recommendations and specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5445.07 Dismantle scaffolds including frames, pipes, braces, platform materials, and fastening devices; by checking for wear, cracks, alignment, lubrication, and missing or damaged components and parts, and by storing or identifying defective equipment and components and removing equipment and components from future service, ensuring safe components are accessible for future use; using hand, power, and/or specialized tools, personal protective equipment, rigging and hoisting devices, and personnel and equipment lifts; according to regulatory requirements, safety requirements, job requirements, manufacturers' recommendations and specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5445.0 UTILIZE TOOLS AND EQUIPMENT...cont'd

5445.08 Utilize step and extension ladders by checking for wear, fit, stability, lubrication, positioning, clearances, and missing or damaged components and parts; by inspecting and testing and analysing performance and function, and by exchanging, adjusting, tightening, aligning, or removing equipment and components from service, ensuring that they are secure so that self and others are safe; using hand, power, and/or specialized tools, levelling and fastening devices, and personal protective equipment; according to regulatory requirements, safety requirements, job requirements, manufacturers' recommendations and specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5446.0 INSTALL WATER SUPPLY

GENERAL PERFORMANCE OBJECTIVE

Install water supply by: determining site excavation location: preparing site for excavation; supervising excavation; installing private water supply; connecting to the water supply; installing underground piping and components; connecting to the water supply; installing underground piping and components; installing thrust blocks and restraining devices; installing hydrants and control valves; completing installation of water supply; and monitoring backfill operations; according to regulatory requirements, codes, NFPA, TSSA, safety requirements, manufacturers' specifications and recommendations, site plans, site conditions, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5446.01 Determine site excavation location by verifying the location of other utility positions, supply connections, and building water supply entry; by interpreting site plans, as-built record drawings, liaising with and verifying location with utility department personnel, minimizing environmental impact, verifying soil composition, and ensuring permits are obtained; according to regulatory requirements, codes, NFPA, safety requirements, reports, and site conditions.

Date Completed

Apprentice

Supervisor/Trainer

5446.02 Prepare site for excavation including identifying and marking location of existing utilities, overhead hazards, and marking excavation routing; using spray paint, stakes, flags, caution tape, safety barricades, communication skills and communication devices and personal protective equipment, while ensuring adequate lighting, that pumps are available for the removal of water, that drainage meets requirements and that access is available for excavation machinery, so that equipment, self and others are safe, and that an adverse impact on the environment is minimized; according to regulatory requirements, codes, safety requirements, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5446.0 INSTALL WATER SUPPLY...cont'd

5446.03 Monitor excavation by inspecting, checking that the trench is shored, determined grade is followed, that access and exit is safe, and barriers are in place so that self and others are safe and that work may proceed efficiently; using measuring devices, oral communication skills and communication devices, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site plans, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5446.04 Install private water supply including storage tanks, pressure tanks, reservoir, ponds, and wells; by assembling, and checking for damage, leaks, pressure, drainage, soil conditions, environmental conditions, erosion, water table, and stability; using hand and power tools, measuring devices, rigging, lifting and hoisting devices, and personal protective equipment, according to regulatory requirements, codes, NFPA, TSSA, manufacturers' specifications and recommendations, company policies and procedures, and safety requirements.

Date Completed

Apprentice

Supervisor/Trainer

5446.0 INSTALL WATER SUPPLY...cont'd

5446.05 Connect to the water supply including private and public sources, ensuring prior notification to authorities and affected water supply users, by isolating pipe to be connected to, removing pressure, cutting or tapping into existing main, removing excess water from the trench, installing fittings and valves, chlorinating and flushing water, and restoring water supply in order to perform connection; by inspecting and analysing performance and function, checking for fit, alignment, support and leaks; using hand and power tools, measuring devices, rigging, hoisting and lifting equipment, personal protective equipment, and communication skills; according to regulatory requirements, codes, NFPA, safety requirements, job requirements, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5446.06 Install underground piping and components including ductile iron, galvanized steel, copper, and plastic piping, mechanical and flanged fittings, control valves, post indicator valves (PIV's), cathodic protection, and tracer wire, by preparing and compacting the trench bed, ensuring pipe is supported, and fitted, sleeving and piping protected, chlorinating and flushing, and restoring water supply; inspecting, checking for leaks, pressure, drainage, soil conditions, environmental conditions, erosion, water table, and stability, verifying depth of bury, so that the water supply will be provided and will operate efficiently; using hand and power tools, measuring devices, lifting, rigging and hoisting equipment, adhesives, testing devices, disinfecting solutions, and personal protective equipments; according to regulatory requirements, codes, NFPA, safety requirements, site conditions, manufacturers' specifications and recommendations, and company policy and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5446.0 INSTALL WATER SUPPLY...cont'd

5446.07 Install thrust blocks and restraining devices including rodding and clamps by identifying items for grade and soil conditions, constructing formwork, fabricating, assembling, and installing thrust blocks, bracing, and/or restraining devices, so that pipe will not move when pressurized; using hand and power tools, rigging, hoisting and lifting equipment, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5446.08 Install hydrants and control valves including yard and wall hydrants, rodding and clamps, by identifying spacing requirements; checking for fire department access, finished grade, drainage, environmental conditions; constructing formwork; fabricating, assembling, and installing thrust blocks, bracing, and/or restraining devices, chlorinating and flushing water so that hydrant will provide water efficiently when pressurized; using hand and power tools, disinfecting solutions, rigging, hoisting and lifting equipment, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site drawings and site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5446.0 INSTALL WATER SUPPLY...cont'd

5446.09 Complete installation of water supply including private water supplies, water supply main, underground piping and components, hydrants, and control valves, by connecting all lines, checking for leaks, pressure, stability and movement; submitting water samples for evaluation, and completing test certificates; inspecting, flushing, testing and analysing performance; using hand and power tools, disinfecting solutions, testing devices, communication skills and devices and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site conditions, job requirements, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5446.10 Supervise backfill operations by ensuring that filling material is compacted and leveled, site restoration is complete, and safety barriers removed upon completion, so that self and others are protected and impact to the environment minimized; using observation, communication skills and devices, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site plan, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5447.0 FABRICATE FIRE PROTECTION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Fabricate fire protection systems by: identifying fabrication area; organizing material for fabrication; preparing piping and fittings for site installation; and fabricating hangers, brackets, and supports; according to regulatory requirements, codes, NFPA, safety requirements, site plan, site conditions, job specifications, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5447.01 Identify fabrication area by referencing site plan, inspecting site, determining material and equipment accessibility, traffic flow, material, and equipment storage and lighting and electrical requirements, and establishing in coordination with other tradespersons at site meetings the location of the fabrication area, ensuring that the site location has minimal adverse impact on the environment, location is secure and the work may proceed efficiently; according to regulatory requirements, codes, safety requirements, site plan, site conditions, job specifications, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5447.02 Organize material for fabrication including pipes, valves, hangers, fittings, and auxiliary devices, using shop drawings, take-off and cut sheets, delivery schedules, lifting, rigging and hoisting devices, communication skills and devices, and personal protective equipment so that fabrication process proceeds efficiently; according to regulatory requirements, codes, NFPA, safety requirements, site plan, site conditions, job specifications, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5447.0 FABRICATE FIRE PROTECTION SYSTEMS...cont'd

5447.03 Prepare piping and fittings for site installation by measuring, cutting, threading, grooving, benching, and welding pipe, so that piping is prepared and ready for installation with minimal wastage; using hand and power tools, measuring devices, cutting equipment, threaders, groovers, drills, adhesives, solvents, soldering and welding equipment, lifting rigging and hoisting equipment and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site plan, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5447.04 Fabricate hangers, brackets, and supports including angle irons, trapeze hangers, seismic/sway bracing, threaded rods, rings, fastening devices, and braces, ensuring that wastage is minimized and hangers will support the installation of the piping system components; using hand and power tools, bending devices, welding and cutting equipment rigging, lifting and hoisting devices, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site plan, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5448.0 INSTALL HEADERS, VALVES, AND TRIM

GENERAL PERFORMANCE OBJECTIVE

Install headers, valves, and trim by: verifying the underground water supply; isolating water supply; performing system bleed-off; installing check, control and drain valves; installing support and brace headers; and testing fire protection headers and components; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5448.01 Verify the underground water supply by obtaining all completed test results and flushing certificates and if not available perform a flushing and test of underground water supply to establish the suitability of the water supply; inspecting, checking for and recording issues and bringing them to the attention of a supervisor; using report results, pitot tubes, discharge lines, gauges, communication skills and devices, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5448.02 Isolate water supply by closing and securing control valves underground curb valves, PIV's, outside stem and yoke (OS&Y), verifying the full closure of the water supply isolation valve, and following safety and lockout procedures, so that the supply piping can be drained; using hand tools and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5448.0 INSTALL HEADERS, VALVES, AND TRIM...cont'd

5448.03 Perform system bleed-off by verifying that the water supply isolation valve is closed, opening drain valve on the testing flange, checking for absence of pressure and water flow, so that pressure is relieved from the supply or spigot, for safe removal of the testing flange; using hand tools, and personal protective equipment; according to safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5448.04 Install check, control and drain valves including outside stem and yoke (OS&Y), butterfly, wallpost indicators, indicating and non-indicating drain valves, ensuring that valves are securely installed and accessible; using hand, power and cutting tools, rigging, lifting and hoisting devices, ladders, personnel lifts, and personal protective equipment, so that the flow of the water is distributed according to plan and specifications and the integrity of the water supply is protected; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5448.05 Install support and brace headers including piping, flanges, couplings, riser clamps, specialty fittings with bracing and pipe supports; inspecting and checking for fit, stability, and alignment, so that the installation is supported and can be completed; using hand, power and cutting tools, fasteners, rigging, lifting and hoisting devices, ladders, personnel lifts, and personal protective equipment,; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5448.0 INSTALL HEADERS, VALVES, AND TRIM...cont'd

5448.06 Test fire protection headers and components including check valves, control valves, detector check valves, by restoring the water supply, bleeding off the air; inspecting, checking for leaks, pressure and full flow; testing and analysing performance and recording results, so that test report will be accepted by the regulatory authority; using gauges and specialized testing equipment, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturer s' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5449.0 INSTALL FIRE PROTECTION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Install fire protection systems including: clean agent fire suppression systems; high and low-pressure carbon dioxide systems; dry and wet chemical systems; standpipe and hose rack systems; wet systems; anti-freeze systems; dry systems; combination dry pipe and pre-action systems; pre-action systems; deluge systems; foam systems; water mist systems; and detection systems; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5449.01 Install clean agent fire suppression systems including hangers, fasteners, bracing, piping, nozzles, inert gas storage cylinders, pull stations, abort stations, solenoid valves, warning signals, detection equipment, building system shutdown equipment, ensuring that components are securely installed; using hand, power and cutting tools, specialized tools, measuring devices, rigging, lifting and hoisting devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.0 INSTALL FIRE PROTECTION SYSTEMS...cont'd

5449.02 Install high and low-pressure carbon dioxide systems including hangers, fasteners, bracing, piping, nozzles, carbon dioxide gas storage cylinders, slave cylinders, low pressure storage tanks, reserve cylinder bank, pull stations, abort stations, solenoid valves, warning signals, detection equipment, applicable building system shutdown equipment; checking for fit and ensuring that components are securely installed; using hand, power and cutting tools, measuring devices, rigging, lifting and hoisting devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.03 Install dry and wet chemical systems including hangers, fasteners, bracing, piping, nozzles, agent storage cylinders, pull stations, abort stations, solenoid valves, warning signals, detection equipment, and building system shutdown equipment; checking for fit and ensuring that components are securely installed; using hand, power and cutting tools, measuring devices, rigging, lifting and hoisting devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.0 INSTALL FIRE PROTECTION SYSTEMS...cont'd

5449.04 Install standpipe and hose rack systems including fire pumps, test headers, fire department connections, flow switches, sleeves, hangers, fasteners, bracing, piping, riser clamps, fire stopping, drain risers, fire hose cabinets, riser control valves, fire hose valves, pressure regulating valves, pressure reducing valves, pressure relief valves, check valves, dry pipe valves, fire extinguishers, hose spanners, water stops, hose racks and reels, security cabinets, and institutional cabinets; checking for fit and alignment and ensuring that components are securely installed; using hand, power and cutting tools, measuring devices, gauges, rigging, lifting and hoisting devices, ladders, personnel lifts, lift trucks, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.05 Install wet systems including test headers, alarm valves, check valves, flow switches, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, sleeves, hangers, fasteners, seismic bracing, sprinkler heads, piping, riser clamps, fire stopping, zone control valves, drain risers, pressure reducing valves, floor control assemblies and cabinets; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, rigging, lifting and hoisting devices, ladders, personnel lifts, lift trucks, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.0 INSTALL FIRE PROTECTION SYSTEMS...cont'd

5449.06 Install anti-freeze systems including fire department connections, inspector's test connection, expansion tanks, check valves, control valves, drain valves, filling valves, flow switches, pressure switches, solution test connections, anti-freeze solutions, sleeves, hangers, fasteners, seismic bracing, sprinkler heads, piping, riser clamps, fire stopping, and gauges; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, rigging, lifting and hoisting devices, ladders, personnel lifts, lift trucks, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.07 Install dry systems including test headers, dry pipe valves, check valves, air compressors, shop air supply, air maintenance devices, accelerators, exhausters, pressure switches, water motor alarms, inspector's test connections, fire department connections, drum drips, sleeves, hangers, fasteners, seismic bracing, sprinkler heads, piping, riser clamps, fire stopping, drain risers, pressure relief valves, and pre-trimmed cabinets; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, rigging, lifting and hoisting devices, ladders, personnel lifts, lift trucks, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.0 INSTALL FIRE PROTECTION SYSTEMS...cont'd

5449.08 Install combination dry pipe and pre-action systems including test headers, dry pipe valves, check valves, fire detection tubing, fire detection wiring, tripping devices, supplemental chambers, air compressors, shop air supply, air maintenance devices, accelerators, exhausters, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, drum drips, sleeves, hangers, fasteners, seismic bracing, sprinkler heads, piping, riser clamps, fire stopping, drain risers, and gauges; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, rigging, lifting and hoisting devices, ladders, personnel lifts, lift trucks, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.09 Install pre-action systems including non-interlock, single interlock and double interlock arrangements, test headers, pre-trimmed cabinets, pre-action valves, isolation test valves, check valves, solenoid valves, fire detection wiring, air sampling activating devices, manual pull stations, air compressors, shop air supply, air maintenance devices, accelerators, exhausters, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, drum drips, electrical detection systems, dry and wet pilot lines, sleeves, hangers, fasteners, seismic bracing, sprinkler heads, drum drips, piping, riser clamps, fire stopping, drain risers, and pressure gauges; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, rigging, lifting and hoisting devices, ladders, personnel lifts, lift trucks, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.0 INSTALL FIRE PROTECTION SYSTEMS...cont'd

5449.10 Install deluge systems including test headers, fire line strainers, deluge valves, pre-trimmed cabinets, isolation test valves, check valves, fire detection wiring, manual pull stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sleeves, hangers, fasteners, seismic bracing, sprinkler heads, open sprinklers, spray nozzles, water monitors, piping, riser clamps, fire stopping, drain risers, and pressure gauges; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, rigging, lifting and hoisting devices, ladders, personnel lifts, lift trucks, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.11 Install foam systems including fire pumps, pump test headers, deluge valves, alarm valves, foam proportioners, foam solutions, foam tanks, foam makers, foam pumps, foam monitors, pre-trimmed cabinets, isolation test valves, check valves, hose hand lines, fire detection wiring, manual pull stations, abort stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sleeves, hangers, fasteners, seismic bracing, sprinkler heads, open sprinklers, spray nozzles, piping, riser clamps, fire stopping, drain risers, pressure gauges; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, rigging, lifting and hoisting devices, ladders, personnel lifts, lift trucks, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.0 INSTALL FIRE PROTECTION SYSTEMS...cont'd

5449.12 Install water mist systems including fire pumps, pump test headers, hangers, fasteners, bracing, piping, nozzles, strainers, inert gas storage cylinders, water storage tanks, pull stations, abort stations, isolation valves, drain valves, check valves, test valves, solenoid valves, pressure reducing valves, pressure switches, pressure regulators, gauges, warning signals, detection equipment, building system shutdown equipment, and solenoids; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, specialized tools, measuring devices, rigging, lifting and hoisting devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5449.13 Install detection systems including rate of rise systems, fixed temperature systems, air sampling/air aspiration systems, detection wire systems, fasteners, hangers, brackets, piping, control panels, and test connections; checking for fit and stability and ensuring that components are securely installed; using hand, power and cutting tools, specialized tools, measuring devices, rigging, lifting and hoisting devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5450.0 COMMISSION FIRE PROTECTION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Commission fire protection systems including: clean agent fire suppression systems; high and low-pressure carbon dioxide systems; dry and wet chemical systems; standpipe and hose rack systems; wet systems, anti-freeze systems; dry systems; combination dry pipe and pre-action systems; pre-action systems; deluge systems; foam systems; water mist systems; and detection systems; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5450.01 Commission clean agent fire suppression systems including piping, pull stations, abort stations, solenoid valves, detection equipment, warning signal equipment, building system shutdown equipment; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room spacing, age, approval stamps, fluid levels, drainage, clearance, and code compliance; performing acceptance tests on equipment, verifying room integrity, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized service tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.02 Commission high and low-pressure carbon dioxide systems including piping, pull stations, abort stations, solenoid valves, detection equipment, warning signal equipment, slave cylinders, and building system shutdown equipment; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, gas levels, clearance, and code compliance; performing acceptance tests on equipment, verifying room integrity, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer, site

5450.03 Commission dry and wet chemical systems including piping, pull stations, abort stations, solenoid valves, warning signals, detection equipment, building system shutdown equipment; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, verifying room integrity, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, and testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.04 Commission standpipe and hose rack systems including fire pumps, test headers, fire department connections, flow switches, piping, riser control valves, fire hose cabinets, fire hose valves, check valves, dry pipe valves, pressure regulating valves, pressure reducing valves, and pressure relief valves; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.05 Commission wet systems including test headers, alarm valves, check valves, flow switches, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, sprinkler heads, piping, zone control valves, drain risers, pressure reducing valves, floor control assemblies and cabinets; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.06 Commission anti-freeze systems including test headers, fire department connections, inspector's test connection, expansion tanks, check valves, control valves, drain valves, filling valves, flow switches, pressure switches, anti-freeze solutions, piping, sprinkler heads, and gauges; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.07 Commission dry systems including test headers, dry pipe valves, check valves, accelerators, exhausters, air maintenance devices, air compressors, shop air supply, pressure switches, sprinkler heads, water motor alarms, inspector's test connections, fire department connections, drum drips, and piping; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.08 Commission combination dry pipe and pre-action systems including test headers, dry pipe valves, check valves, fire detection tubing, fire detection wiring, tripping devices, supplemental chamber, air compressors, shop air supply, air maintenance devices, exhausters, accelerators, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, drum drips, sprinkler heads, gauges, piping, and drain risers; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.09 Commission pre-action systems including non-interlock, single interlock and double interlock arrangements, test headers, pre-trimmed cabinets, pre-action valves, isolation test valves, check valves, solenoid valves, fire detection wiring, air sampling activating devices, manual pull stations, air compressors, shop air supply, air maintenance devices, accelerators, exhausters, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, drum drips, electrical detection systems, dry and wet pilot lines, sleeves, hangers, seismic bracing, sprinkler heads, drum drips, piping, riser clamps, fire stopping, drain risers, and pressure gauges; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations and, company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.10 Commission deluge systems including test headers, fire line strainers, deluge valves, pre-trimmed cabinets, isolation test valves, check valves, fire detection wiring, manual pull stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sleeves, hangers, seismic bracing, sprinkler heads, open sprinklers, spray nozzles, water monitors, piping, riser clamps, fire stopping, drain risers, and pressure gauges; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.11 Commission foam systems including fire pumps, pump test headers, deluge valves, pre-trimmed cabinets, foam concentrations, deluge valves, alarm valves, foam proportioners, foam solutions, foam tanks, foam makers, foam pumps, foam monitors, hose hand lines, isolation test valves, check valves, fire detection wiring, air sampling activating devices, manual pull stations, abort stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, open sprinklers, spray nozzles, piping, pressure gauges; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by performing acceptance tests on equipment, inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.12 Commission water mist systems including fire pumps, pump test headers, piping, nozzles, strainers, inert gas storage cylinders, water storage tanks, pull stations, abort stations, isolation valves, drain valves, check valves, test valves, solenoid valves, pressure reducing valves, pressure switches, pressure regulators, warning signals, detection equipment, building system shutdown equipment, and solenoids; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance; by inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand tools, specialized service tools, testing devices, communication skills, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5450.0 COMMISSION FIRE PROTECTION SYSTEMS...cont'd

5450.13 Commission detection systems including rate of rise systems, fixed temperature systems, air sampling/air aspiration systems, detection wire systems, fasteners, hangers, brackets, piping, control panels, and test connections, ensuring that components are securely installed; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, flow, fit, stability, temperature rating, temperature of the room, spacing, age, approval stamps, pressure, clearance, and code compliance; by inspecting, testing and analysing performance and function, recording results, and issuing a test certificate; using hand, power and cutting tools, specialized tools, testing devices, communication skills, rigging, lifting and hoisting devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5451.0 INSTALL PUMPS, DRIVERS, AND CONTROLLERS

GENERAL PERFORMANCE OBJECTIVE

Install pumps, drivers, and controllers by: verifying the water supply; selecting the fire pump assembly; identifying the location of the fire pump installation; preparing the site location for installation of the fire pump assembly; installing fire pump assembly; installing controllers and auxiliary devices; installing fuel system for diesel drivers; installing jockey pumps; and commissioning fire pump assembly and auxiliary components; according to regulatory requirements, codes, NFPA, TSSA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5451.01 Verify the water supply including wells, ponds, pits, reservoirs, storage tanks, and underground piping, by obtaining all completed test results and certificates, and assessing data, checking and recording data pertaining to depth, volume of water, water pressure, and water conditions, to ensure that the that water supply is adequate for the application; using report results, pitot tubes, discharge lines, gauges, communication skills, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5451.0 INSTALL PUMPS, DRIVERS, AND CONTROLLERS...cont'd

5451.02 Select fire pump assembly including horizontal split case, in-line, vertical turbine, centrifugal pumps with electric or diesel drivers, positive displacement pumps, transfer switches, controllers, pump test headers, bypass, relief valves, check valves, drains, gauges, and sensing lines; by checking for fit, and capacity, ensuring that the fire pump assembly will meet system demands; using plans, specifications, hydraulic calculations and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5451.03 Identify the location of the fire pump installation by ensuring the positioning of pump assembly in relation to water supply and discharge connections, inspecting, checking for accessibility, clearances, power supply, fuel supply, ventilation, engine exhaust routing, and environmental conditions; by inspecting, and assessing potential locations; using measuring devices, site plans, personal protective equipment, and by coordinating with other tradespersons; according to regulatory requirements, codes, NFPA, safety requirements, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5451.04 Prepare site location for installation of the fire pump assembly by reading and interpreting job specifications, and site plans; selecting and organizing tools and equipment, installing fire pump assembly pads, test headers, and exhaust; coordinating sub-trades to construct and install floor drains, fuel and electrical supplies, man holes, ventilation, lighting, heating; using hand and power tools, measuring devices, communication devices, site plans, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site conditions, job specifications, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5451.0 INSTALL PUMPS, DRIVERS, AND CONTROLLERS...cont'd

5451.05 Install fire pump assembly including horizontal split case, vertical in-line and vertical turbine centrifugal pumps with electric or diesel drivers, positive displacement pumps jockey pumps, pump test headers, flowmeter, bypass, relief valves, check valves, drains, gauges, sensing lines, piping, fittings, valves, switches, bracketing, bracing, and exhaust piping; by inspecting, checking for fit, stability, and alignment so that the assembly will meet systems demands; using hand and power tools, measuring devices, rigging, lifting and hoisting devices, lift trucks, communication devices, site plans, and personal protective equipment; according to regulatory requirements, codes, NFPA, safety requirements, site conditions, job specifications, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5451.06 Install controllers and auxiliary devices including electric and electronic controllers, internal block heaters, batteries, pressure switches, flow switches, sensing lines, and gauges; using hand and power tools, measuring devices, rigging, lifting and hoisting devices, lift trucks, communication devices, site plans, and personal protective equipment, so that the fire pump will immediately activate when requested; according to regulatory requirements, codes, safety requirements, NFPA, site conditions, job specifications, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5451.0 INSTALL PUMPS, DRIVERS, AND CONTROLLERS...cont'd

5451.07 Install fuel system for diesel drivers including fuel storage tanks, piping, ventilation components, fill piping, pressure switches, gauges, valves, supports, and spill containment; by inspecting, checking for fit, alignment, and stability; using hand and power tools, measuring devices, rigging, lifting and hoisting devices, lift trucks, communication devices, site plans, and personal protective equipment, so that the fuel supply will meet diesel driver requirements and adverse impact on the environment is minimized; according to regulatory requirements, codes, NFPA, TSSA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5451.08 Install jockey pumps including controllers, sensing lines, piping, fittings, valves and switches, hangers, bracing, ensuring the sizing needed to facilitate the main fire pump sequencing; by inspecting, checking for fit, alignment, and stability; using hand and power tools, measuring devices, rigging, lifting and hoisting devices, lift trucks, communication devices, site plans, and personal protective equipment, so that the pump will operate; according to regulatory requirements, codes, NFPA, safety requirements site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5451.0 INSTALL PUMPS, DRIVERS, AND CONTROLLERS...cont'd

5451.09 Commission fire pump assembly and auxiliary components including electric and diesel drivers, fire pumps, jockey pumps, controllers, transfer switches, power supply, fuel supply, water supply, batteries, sensing lines, gauges, pipes, bracing, relief valves, and check valves; checking alignment, fluid levels, charge, rotation, leaks, lubrication, noise, vibration, flow, discharge pressures, cavitation, temperature, ventilation, and wiring; by inspecting, testing and analysing performance, calibrating and sequencing pump assemblies, verifying operation of switches, alarms, sensing devices and pump performance, recording results, and issuing a test certificate; using hand and power tools, specialized tools, testing devices, measuring devices, communication skills, electrolyte, lubricants, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, TSSA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5452.0 INSTALL AND MAINTAIN PORTABLE FIRE EXTINGUISHERS

GENERAL PERFORMANCE OBJECTIVE

Install and maintain portable fire extinguishers by: selecting portable extinguishers; installing portable extinguishers; performing scheduled inspections of extinguishers and components; and maintaining extinguishers and components; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5452.01 Select portable extinguishers including carbon dioxide, water, wet and dry chemical, and clean agent extinguishers, identifying the number required, type, size, and spacing, inspecting and verifying that the extinguisher is fully charged and ready for application, and meets all requirements; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5452.02 Install portable extinguishers including carbon dioxide, water, wet and dry chemical, and clean agent extinguishers with fasteners, hangers, and brackets; using hand and power tools, measuring devices, and fastening devices; ensuring extinguishers are secure, visible, accessible, rated for the application and ready for use; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5452.0 INSTALL AND MAINTAIN PORTABLE FIRE EXTINGUISHERS...cont'd

5452.03 Perform scheduled inspections of extinguishers and components including hoses, cylinders, nozzles, gauges, pins and seals; checking for charge, leaks, wear, missing, loose and damaged components, location, type and size, ensuring that extinguisher is secure, recording on extinguisher tags the date of inspection and recording inspection data in the property maintenance log and ensuring that the that extinguishers are in place, accessible, and ready for use; using personal protective equipment, hand and power tools, testing devices, communication skills, and recording/marking devices; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5452.04 Maintain extinguishers and components including hoses, cylinders, nozzles, gauges, pins, seals, fasteners, brackets, and hangers; by servicing and/or replacing extinguishers or defective components, inspecting, testing and verifying pressure and weight, and that extinguishers are reinstalled securely; using hand and power tools, recharging equipment, testing devices, fastening devices, and personal protective equipment, ensuring that the extinguishers are ready for use and accessible; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5453.0 INSPECT FIRE PROTECTION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Inspect fire protection systems by: notifying clients/representatives prior to inspection; and inspecting fire alarm control and releasing panels, clean agent fire suppression systems, high and low-pressure carbon dioxide systems, dry and wet chemical systems, standpipe and hose rack systems, wet systems, anti-freeze systems, dry systems, combination dry pipe and pre-action systems, pre-action systems, deluge systems, foam systems, water mist systems; fire pump assembly and auxiliary components; and water supplies and auxiliary components; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5453.01 Notify client/representative prior to inspection using oral and written communication skills and communication devices; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.02 Inspect fire alarm control and releasing panels in order to facilitate test of fire protection systems; checking for malfunctioning lights, damage, and wear; according to manufacturers' specifications and recommendations, regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.03 **Inspect clean agent fire suppression systems** including vessels, piping, pull stations, abort stations, solenoid valves, detection equipment, warning signal equipment, building system shutdown equipment, hangers, brackets and supports; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature and integrity, spacing, age, approval stamps, fluid levels, pressure, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, arranging for repairs, recording results, and issuing an inspection report; using observation and communication skills, hand tools, specialized service tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.04 **Inspect high and low-pressure carbon dioxide systems** including vessels, piping, pull stations, abort stations, solenoid valves, detection equipment, warning signal equipment, slave cylinders, and building system shutdown equipment; by checking for wear, leaks, obstructions, paint, damaged, loose and/or missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature and integrity, spacing, age, approval stamps, fluid levels, pressure, clearance, and code compliance, recording results, verifying building occupancy, noting discrepancies and deficiencies with the client, arranging for servicing, and issuing an inspection report; using observation and communication skills hand tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer, Site

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.05 Inspect dry and wet chemical systems including vessels, piping, pull stations, abort stations, solenoid valves, warning signals, detection equipment, and building system shutdown equipment; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills hand tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.06 Inspect standpipe and hose rack systems including fire pumps, test headers, fire department connections, flow switches, piping, riser control valves, fire hose cabinets, fire hose, fire hose valves, check valves, dry pipe valves, pressure regulating valves, and pressure reducing valves; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, and arranging for servicing; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment, according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.07 **Inspect wet systems** including test headers, alarm valves, check valves, flow switches, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, sprinkler heads, piping, zone control valves, drain risers, pressure reducing valves, floor control assemblies and cabinets; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, tools, specialized tools, ladders, personnel lifts, and personal protective equipment, according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.08 **Inspect anti-freeze systems** including test headers, fire department connections, inspector's test connection, expansion tanks, check valves, control valves, drain valves, filling valves, flow switches, pressure switches, anti-freeze solutions, piping, sprinkler heads, and gauges; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, hand tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.09 **Inspect dry systems** including test headers, dry pipe valves, check valves, accelerators, exhausters, air maintenance devices, air compressors, shop air supply, pressure switches, pressure relief valves, sprinkler heads, water motor alarms, inspector's test connections, fire department connections, drum drips, and piping; checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, hand tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.10 **Inspect combination dry pipe and pre-action systems** including test headers, dry pipe valves, check valves, fire detection tubing, fire detection wiring, tripping devices, supplemental chamber, air compressors, shop air supply, air maintenance devices, exhausters, accelerators, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, drum drips, sprinkler heads, gauges, piping, and drain risers; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills, hand tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.11 **Inspect pre-action systems** including non-interlock, single interlock and double interlock arrangements, test headers, pre-trimmed cabinets, pre-action valves, isolation test valves, check valves, solenoid valves, fire detection wiring, air sampling activating devices, manual pull stations, air compressors, shop air supply, air maintenance devices, accelerators, exhausters, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, drum drips, piping, drain risers, and pressure gauges; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, hand tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.12 Inspect deluge systems including test headers, fire line strainers, deluge valves, pre-trimmed cabinets, isolation test valves, check valves, fire detection wiring, manual pull stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, open sprinklers, spray nozzles, water monitors, piping, drain risers, and pressure gauges; by checking for wear, leaks, obstructions, paint, damaged, loose and/or missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, hand tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.13 **Inspect foam systems** including fire pumps, pump test headers, pre-trimmed cabinets, foam concentrations, deluge valves, alarm valves, foam proportioners, foam solutions, foam tanks, foam makers, foam pumps, foam monitors, hose hand lines, isolation test valves, check valves, fire detection wiring, air sampling activating devices, manual pull stations, abort stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, open sprinklers, spray nozzles, piping, pressure gauges; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, hand tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.14 Inspect water mist systems including fire pumps, pump test headers, piping, nozzles, strainers, inert gas storage cylinders, water storage tanks, pull stations, abort stations, isolation valves, drain valves, check valves, test valves, solenoid valves, pressure reducing valves, pressure switches, pressure regulators, gauges, warning signals, detection equipment, building system shutdown equipment, and solenoids; by checking for wear, leaks, obstructions, paint, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, temperature rating, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, clearance, and code compliance, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, hand tools, specialized service tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.15 Inspect fire pump assembly and auxiliary components including electric and diesel drivers, fire pumps, fire pump test headers, jockey pumps, controllers, transfer switches, power supply, fuel supply, water supply, batteries, sensing lines, gauges, piping, bracing, relief valves, and check valves; by checking for wear, leaks, charge, obstructions, damaged, loose and missing components, corrosion, fractures, alignment, fit, stability, room temperature, spacing, age, approval stamps, fluid levels, pressure, drainage, rotation, lubrication, clearance, ventilation, wiring and code compliance; noting discrepancies and deficiencies with the client, recording results arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, hand and power tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5453.0 INSPECT FIRE PROTECTION SYSTEMS...cont'd

5453.16 **Inspect water supplies and auxiliary components** including gauges, piping, bracing, relief valves, check valves, hangers, hydrants, post indicator valves, sectional control valves, water monitors, drainage, reservoirs, water level, water level alarms, pressure tanks, wells, trash screens, and wiring; by checking for leaks, wear, leaks, obstructions, damaged, loose and missing components, corrosion, fractures, fit, stability, room temperature, spacing, age, approval stamps, pressure, drainage, clearance, and code compliance,; noting discrepancies and deficiencies with the client, recording results arranging for servicing, and issuing an inspection report; using observation and communication skills, documentation, hand and power tools, specialized tools, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, TSSA, codes, safety requirements job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5454.0 TEST FIRE PROTECTION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Test fire protection systems by: coordinating notification of authorities; disabling and enabling fire alarm control and releasing panels; and testing clean agent fire suppression systems, high and low-pressure carbon dioxide systems, dry and wet chemical systems, standpipe and hose rack systems, wet systems, anti-freeze systems, dry systems, combination dry pipe and pre-action systems, pre-action systems, deluge systems, foam systems, water mist systems, fire pump assembly and auxiliary components, and water supplies and auxiliary components; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5454.01 Coordinate notification of authorities including monitoring companies, local fire department, insurance organizations, and the client or client representatives prior to inspecting, testing, or scheduled impairment of fire protection installations; using oral and written communication skills and communication devices; according to regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.02 Disable and enable fire alarm control and releasing panels for testing of fire protection systems; according to manufacturers' specifications and recommendations, regulatory requirements, codes, NFPA, safety requirements, job specifications, site conditions, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.03 Test clean agent fire suppression systems including vessels, piping, pull stations, abort stations, solenoid valves, detection equipment, warning signal equipment, and building system shutdown equipment; by checking for leaks, obstructions, damaged and loose components, corrosion, fractures, discharge, vibration, stability, room integrity, pressure, code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, recording results, noting discrepancies and deficiencies with the client, arranging for repairs, and issuing a testing report; using observation and communication skills, documentation, hand tools, specialized service tools, testing equipment, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.04 Test high and low-pressure carbon dioxide systems including vessels, piping, pull stations, abort stations, solenoid valves, detection equipment, warning signal equipment, slave cylinders, building system shutdown equipment; by checking for leaks, obstructions, damaged and loose components, fractures, alignment, discharge, fit, stability, vibration, room integrity, pressure, and code compliance, ensuring that all components operate effectively and efficiently; by testing system and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing an test report; using observation and communication skills hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer, site

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.05 Test dry and wet chemical systems including vessels, piping, pull stations, abort stations, solenoid valves, warning signals, detection equipment, building system shutdown equipment; by checking for leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, discharge, fit, stability, vibration, pressure, drainage, clearance, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.06 Test standpipe and hose rack systems including fire pumps, test headers, fire department connections, flow switches, piping, riser control valves, fire hose cabinets, fire hoses, fire hose valves, check valves, dry pipe valves, pressure regulating valves, and pressure reducing valves; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, recording results, verifying building occupancy, noting discrepancies and deficiencies with the client, arranging for servicing, and issuing an test report; using observation and communication skills, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.07 **Test wet systems** including test headers, alarm valves, check valves, flow switches, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, sprinkler heads, piping, zone control valves, drain risers, pressure reducing valves, floor control assemblies and cabinets; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.08 Test anti-freeze systems including test headers, fire department connections, inspector's test connections, expansion tanks, check valves, control valves, drain valves, filling valves, flow switches, pressure switches, anti-freeze solutions, piping, sprinkler heads, and gauges; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.09 Test dry systems including test headers, dry pipe valves, check valves, accelerators, exhausters, air maintenance devices, air compressors, shop air supply, pressure switches, pressure relief valves, sprinkler heads, water motor alarms, inspector's test connections, fire department connections, drum drips, and piping; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.10 Test combination dry pipe and pre-action systems including test headers, dry pipe valves, check valves, fire detection tubing, fire detection wiring, tripping devices, supplemental chamber, air compressors, shop air supply, air maintenance devices, exhausters, accelerators, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, drum drips, sprinkler heads, gauges, piping, and drain risers; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.11 Test pre-action systems including non-interlock, single interlock and double interlock arrangements, test headers, pre-trimmed cabinets, pre-action valves, isolation test valves, check valves, solenoid valves, fire detection wiring, air sampling activating devices, manual pull stations, air compressors, shop air supply, air maintenance devices, accelerators, exhausters, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, drum drips, piping, drain risers, and pressure gauges; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.12 Test deluge systems including test headers, fire line strainers, deluge valves, pre-trimmed cabinets, isolation test valves, check valves, fire detection wiring, manual pull stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, open sprinklers, spray nozzles, water monitors, piping, drain risers, and pressure gauges; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.13 **Test foam systems** including fire pumps, pump test headers, deluge valves, pre-trimmed cabinets, foam concentrations, deluge valves, alarm valves, foam proportioners, foam solutions, foam tanks, foam makers, foam pumps, foam monitors, hose hand lines, isolation test valves, check valves, fire detection wiring, air sampling activating devices, manual pull stations, abort stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, open sprinklers, spray nozzles, piping, and pressure gauges; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.14 Test water mist systems including fire pumps, pump test headers, piping, nozzles, strainers, inert gas storage cylinders, water storage tanks, pull stations, abort stations, isolation valves, drain valves, check valves, test valves, solenoid valves, pressure reducing valves, pressure switches, pressure regulators, gauges, warning signals, detection equipment, building system shutdown equipment, and solenoids; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.15 Test fire pump assembly and auxiliary components including electric and diesel drivers, fire pumps, fire pump test headers, jockey pumps, controllers, transfer switches, power supply, fuel supply, water supply, batteries, sensing lines, gauges, piping, bracing, relief valves, check valves, and lubrication; by checking for charge, rotation, wear, leaks, obstructions, damaged and loose components, corrosion, fractures, flow, fit, stability, noise, vibration, cavitation, temperature, ventilation, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, coordinating engine servicing with engine mechanic, calibrating and sequencing pump assemblies, verifying operation of switches, alarms, sensing devices and pump performance verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, TSSA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5454.0 TEST FIRE PROTECTION SYSTEMS...cont'd

5454.16 Test water supplies and auxiliary components, including: gauges, piping, bracing, relief valves, check valves, hangers, hydrants, post indicator valves, sectional control valves, water monitors, drainage, reservoirs, water level, water level alarms, pressure tanks, wells, trash screens, and wiring; by checking for wear, leaks, obstructions, damaged and loose components, corrosion, fractures, alignment, flow, fit, stability, pressure, drainage, and code compliance, ensuring that all components operate effectively and efficiently; by testing and analysing performance and function, verifying building occupancy, noting discrepancies and deficiencies with the client, recording results, arranging for servicing, and issuing a test report; using observation and communication skills, documentation, hand tools, specialized tools, testing devices, ladders, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, TSSA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

5455.0 MAINTAIN FIRE PROTECTION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Maintain fire protection systems including: clean agent fire suppression systems, high and low-pressure carbon dioxide systems, dry and wet chemical systems, standpipe and hose rack systems, wet systems, anti-freeze systems, dry systems, combination dry pipe and pre-action systems, pre-action systems, deluge systems, foam systems, water mist systems, and fire pump assembly and auxiliary components; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

PERFORMANCE OBJECTIVES

SKILLS

5455.01 Maintain clean agent fire suppression system including vessels, piping, pull stations, abort stations, solenoid valves, detection equipment, warning signal equipment, building system shutdown equipment, hangers, brackets and supports; by testing and analysing performance and function, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials and date left in service; using hand tools, specialized service tools, testing devices, communication skills, ladders, rigging, hoisting and lifting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.0 MAINTAIN FIRE PROTECTION SYSTEMS...cont'd

5455.02 Maintain high and low-pressure carbon dioxide systems including vessels, piping, pull stations, abort stations, solenoid valves, detection equipment, warning signal equipment, slave cylinders, and building system shutdown equipment, ensuring that all components operate; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized service tools, testing devices, communication skills, gas, ladders, rigging, hoisting and lifting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer, site

5455.03 Maintain dry and wet chemical systems including vessels, piping, pull stations, abort stations, solenoid valves, warning signals, detection equipment, and building system shutdown equipment; by testing and analysing performance and function, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, restoring and testing; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, rigging, hoisting and lifting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.0 MAINTAIN FIRE PROTECTION SYSTEMS...cont'd

5455.04 Maintain standpipe and hose rack systems including fire pumps, test headers, fire department connections, flow switches, piping, riser control valves, fire hose cabinets, fire hose, fire hose valves, check valves, dry pipe valves, pressure regulating valves, and pressure reducing valves; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.05 Maintain wet systems including test headers, alarm valves, check valves, flow switches, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, sprinkler heads, piping, zone control valves, drain risers, pressure reducing valves, and floor control assemblies and cabinets; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.0 MAINTAIN FIRE PROTECTION SYSTEMS...cont'd

5455.06 Maintain anti-freeze systems including test headers, fire department connections, inspector's test connection, expansion tanks, check valves, control valves, drain valves, filling valves, flow switches, pressure switches, anti-freeze solutions, piping, sprinkler heads, and gauges; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, anti-freeze, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.07 Maintain dry systems including test headers, dry pipe valves, check valves, accelerators, exhausters, air maintenance devices, air compressors, shop air supply, pressure switches, pressure relief valves, sprinkler heads, water motor alarms, inspector's test connections, fire department connections, drum drips, and piping; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.0 MAINTAIN FIRE PROTECTION SYSTEMS...cont'd

5455.08 Maintain combination dry pipe and pre-action systems including test headers, dry pipe valves, check valves, fire detection tubing, fire detection wiring, tripping devices, supplemental chamber, air compressors, shop air supply, air maintenance devices, exhausters, accelerators, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, drum drips, sprinkler heads, gauges, piping, and drain risers; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.09 Maintain pre-action systems including non-interlock, single interlock and double interlock arrangements, test headers, pre-trimmed cabinets, pre-action valves, isolation test valves, check valves, solenoid valves, fire detection wiring, air sampling activating devices, manual pull stations, air compressors, shop air supply, air maintenance devices, accelerators, exhausters, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, drum drips, piping, drain risers, and pressure gauges; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.0 MAINTAIN FIRE PROTECTION SYSTEMS...cont'd

5455.10 Maintain deluge systems including test headers, fire line strainers, deluge valves, pre-trimmed cabinets, isolation test valves, check valves, fire detection wiring, manual pull stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, open sprinklers, spray nozzles, water monitors, piping, drain risers, and pressure gauges; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.0 MAINTAIN FIRE PROTECTION SYSTEMS...cont'd

5455.11 Maintain foam systems including fire pumps, test headers, deluge valves, pre-trimmed cabinets, foam concentrations, deluge valves, alarm valves, foam proportioners, foam solutions, foam tanks, foam makers, foam pumps, foam monitors, hose hand lines, isolation test valves, check valves, fire detection wiring, air sampling activating devices, manual pull stations, abort stations, solenoid valves, air compressors, shop air supply, air maintenance devices, pressure switches, pressure relief valves, water motor alarms, inspector's test connections, fire department connections, electrical detection systems, dry and wet pilot lines, sprinkler heads, open sprinklers, spray nozzles, piping, and pressure gauges; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, foam solutions, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.12 Maintain water mist systems including fire pumps, pump test headers piping, nozzles, strainers, inert gas storage cylinders, water storage tanks, pull stations, abort stations, isolation valves, drain valves, check valves, test valves, solenoid valves, pressure reducing valves, pressure switches, pressure regulators, gauges, warning signals, detection equipment, building system shutdown equipment, and solenoids; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

5455.0 MAINTAIN FIRE PROTECTION SYSTEMS...cont'd

5455.13 Maintain fire pump assembly and auxiliary components including electric and diesel drivers, fire pumps, test headers, jockey pumps, controllers, transfer switches, power supply, fuel supply, water supply, batteries, sensing lines, gauges, piping, bracing, relief valves, and check valves; by testing and analysing performance and function, draining, decommissioning, isolating, disassembling, replacing devices, parts and components, reassembling, filling, restoring and retesting, so that the system operates to its capabilities; recording service work performed, labour, materials used, and date left in service; using hand tools, specialized tools, testing devices, communication skills, ladders, lifting, rigging and hoisting devices, personnel lifts, and personal protective equipment; according to regulatory requirements, NFPA, TSSA, codes, safety requirements, job specifications, site conditions, manufacturers' specifications and recommendations, and company policies and procedures.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

APPRENTICE RECORD

APPRENTICE NAME (Print):

SPONSOR/EMPLOYER INFORMATION

Training Agreement #	
Name	
Address	
Telephone	
E-mail Address	

SUMMARY OF TRAINING

Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	

Date Completed

Apprentice

Supervisor/Trainer

APPRENTICE RECORD

APPRENTICE NAME (Print):

SPONSOR/EMPLOYER INFORMATION

Training Agreement #	
Name	
Address	
Telephone	
E-mail Address	

SUMMARY OF TRAINING

Employment Start Date	
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Total hours of training & instruction between dates of employment.	

Date Completed

Apprentice

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Telephone	
E-mail Address	

SUMMARY OF TRAINING

Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	

Date Completed

Apprentice

Supervisor/Trainer

APPRENTICE COMPLETION FORM

APPRENTICE INFORMATION	
Name (Print)	
Signature	
Client ID	

Skill Sets when completed should be signed by the Supervisor/Trainer and presented with this completion form to your local Apprenticeship Client Services Office. Any supporting documentation should also be attached.

In-school Completed Yes () No () Not applicable ()
(Proof to be provided)

Hours completed as
Per Contract: Yes () No () Not applicable ()

SPONSOR/EMPLOYER INFORMATION	
Name (Print)	
Address	
Telephone	
E-mail Address	
Signature of Signing Authority	

You will be required to disclose this signed form to the Ministry of Training, Colleges and Universities in order to complete your program. The Ministry will use your personal information to administer and finance Ontario's apprenticeship training system. For further information please see the notice/declaration for collection of personal information that is referenced in the table of contents of this training standard.