



**ONTARIO COLLEGE OF TRADES**  

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**ORDRE DES MÉTIERS DE L'ONTARIO**

# Apprenticeship Training Standard

## Plumber

### Trade Code: 306A

Development Date: July 1999

# PLUMBER TRAINING STANDARD

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# PLUMBER TRAINING STANDARD

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## **Competency Analysis Profile**

# PLUMBER TRAINING STANDARD

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## **PREFACE**

This training document was developed by the Workplace Support Services Branch of the Ministry of Training, Colleges and Universities (MTCU) in consultation with representatives from the industry. These Training Standards are intended to be used by apprentice/trainee, instructors and companies as a "blueprint" for training or as a prerequisite for government accreditation/ certification.

The care and maintenance of this book are the joint responsibility of the apprentice/trainee and the employer. By signing off the skill the trainer and apprentice are indicating that the apprentice has demonstrated successful acquisition of that skill at that date. The trainer may not be held responsible if, at a future date, the apprentice does not successfully repeat the acquired skill. Training Standards were developed specifically for documenting the apprentice's/ trainee's acquisition of skills.

The book becomes the only record of an apprentice's/trainee's training.

## **IMPORTANT DIRECTIONS TO TRAINERS**

Training Standards identify skills required for this occupation and its related training program.

These Training Standards have been written in concise statements that describe how well an apprentice/trainee must perform each skill to become competent.

In using these Training Standards, trainers will be able to ensure that the apprentice/trainee is developing skills detailed for the occupation.

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

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

# PLUMBER TRAINING STANDARD

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## IMPORTANT DIRECTIONS TO THE APPRENTICE/TRAINEE

### **Apprentice**

1. All hours working for each employer(s) should be recorded in the Employer Information section.
2. The "Summary of Hours" should be completed, signed and dated by both the apprentice and employer when either all terms of the contract have been completed or the apprentice leaves the employ of the employer.
3. It is the responsibility of the apprentice to inform the local Apprenticeship Client Services office regarding the following changes:
  - change of employer address;
  - change of apprentice name or address;
  - transfer to a new employer.
4. At the fulfilment of all terms of a Contract of Apprenticeship, the Apprentice/Trainee Completion Form must be completed and signed by the current employer. Present these completed and authorized Training Standards and the Apprentice/Trainee Completion Form to your local Apprenticeship Client Services office.

### **Trainee**

1. Training Reports must be signed for modular trainees by a MTCU designated Signing Authority and forwarded to a local Apprenticeship Client Services office.
2. At the completion of training, the Apprentice/Trainee Completion Form must be completed and signed off by the employer/Signing Authority and submitted to local Apprenticeship Client Services office.

## **PLUMBER TRAINING STANDARD**

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### **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.

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>

## PLUMBER TRAINING STANDARD

### APPRENTICE/TRAINEE RECORD

Apprentice/Trainee Name: \_\_\_\_\_

Contract Number: \_\_\_\_\_  
(If applicable)

### EMPLOYER INFORMATION

Company: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

### **SUMMARY OF HOURS:**

Dates of Employment: \_\_\_\_\_  
From To \_\_\_\_\_

Total hours of Training and Instruction between dates of Employment \_\_\_\_\_ Hours

_____ Employer's Signature	_____ Date	_____ Apprentice/Trainee Signature	_____ Date
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## PLUMBER TRAINING STANDARD

### EMPLOYER INFORMATION

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

### **SUMMARY OF HOURS:**

Dates of Employment: \_\_\_\_\_  
From To

Total hours of Training and Instruction between dates of Employment \_\_\_\_\_ Hours

_____ Employer's Signature	_____ Date	_____ Apprentice/Trainee Signature	_____ Date
----------------------------------	---------------	--	---------------

### EMPLOYER INFORMATION

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

### **SUMMARY OF HOURS:**

Dates of Employment: \_\_\_\_\_  
From To

Total hours of Training and Instruction between dates of Employment \_\_\_\_\_ Hours

_____ Employer's Signature	_____ Date	_____ Apprentice/Trainee Signature	_____ Date
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**PLUMBER TRAINING STANDARD**

**EMPLOYER INFORMATION**

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

**SUMMARY OF HOURS:**

Dates of Employment: \_\_\_\_\_  
From To

Total hours of Training and Instruction between dates of Employment \_\_\_\_\_ Hours

_____ Employer's Signature	_____ Date	_____ Apprentice/Trainee Signature	_____ Date
----------------------------------	---------------	--	---------------

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**EMPLOYER INFORMATION**

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

**SUMMARY OF HOURS:**

Dates of Employment: \_\_\_\_\_  
From To

Total hours of Training and Instruction between dates of Employment \_\_\_\_\_ Hours

_____ Employer's Signature	_____ Date	_____ Apprentice/Trainee Signature	_____ Date
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# PLUMBER TRAINING STANDARD

## APPRENTICE/TRAINEE COMPLETION FORM

Apprentice/Trainee Name \_\_\_\_\_  
Print

\_\_\_\_\_  
Signature

Social Insurance Number \_\_\_\_\_

Training Units when completed should be signed off by Trainer/ Signing Authority on the following page and presented with this completion form to your local Apprenticeship Client Services office.

Any supporting documentation should also be attached.

In-School Completed:      Ye ( )      No ( )      Not Applicable ( )  
(proof to be provided)

Hours completed as  
per Contract:              Yes ( )      No ( )      Not Applicable ( )

Employer Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Signing Authority: \_\_\_\_\_  
Signature

---

### **MTCU USE ONLY:**

Recommended for Exam:      Yes ( )      No ( )

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Consultant/Office Code

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.

# PLUMBER TRAINING STANDARD

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## TRAINING UNIT COMPLETION FORM

<b>TRAINING UNITS</b>	<b>TITLE</b>	<b>SIGNING AUTHORITY</b>
U5455.0	Protect Self and Others	_____
U5456.0	Communicate	_____
U5457.0	Read, Interpret, Create and Maintain Drawings and Specifications	_____
U5458.0	Design Systems	_____
U5459.0	Plan and Prepare for the Project	_____
U5460.0	Install Pipe, Fittings, Valves and Supports	_____
U5461.0	Install Piping Systems	_____
U5462.0	Install Fixtures	_____
U5463.0	Install Equipment	_____
U5464.0	Install Devices	_____
U5465.0	Test Systems	_____
U5466.0	Commission/Activate System	_____
U5467.0	Perform Rigging and Hoisting	_____
U5468.0	Service and Maintain Mechanical Systems	_____

# PLUMBER TRAINING STANDARD

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## U5455.0 PROTECT SELF AND OTHERS

### GENERAL PERFORMANCE OBJECTIVE

Protect self and others by: identifying, interpreting and applying acts, codes, regulations and directives; selecting, wearing, adjusting using and maintaining personal protective equipment and apparel; recognizing and assessing hazards and hazardous conditions; controlling hazards; assembling, erecting, using and dismantling platforms and scaffolds; performing lock out and tagging procedures; operating and maintaining tools and equipment; and, performing housekeeping duties.

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### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

\_\_\_\_\_

\_\_\_\_\_

### SKILLS

U5455.01 Identify, interpret and apply applicable acts, codes, regulations and directives including WHMIS (Workplace Hazardous Materials Information System), OSHA (Occupational Health and Safety Act), CSAO (Construction Safety Association of Ontario), OBC (Ontario Building Code), WSIB (Workers Safety Insurance Board), EPA (Environmental Protection Act), ASME (American Society of Mechanical Engineers), TSSA (Technical Standards and Safety Authority), DGTA (Dangerous Goods Transportation Act), OFC (Ontario Fire Code), NFPA (National Fire Protection Association), CEC (Canadian Electrical Code), municipal requirements, and company policies.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## PLUMBER TRAINING STANDARD

### **U5455.0      PROTECT SELF AND OTHERS - Cont'd**

U5455.02      Select, wear, adjust, use and maintain personal protective equipment and apparel including safety footwear, hard hats, gloves, glasses, goggles, masks, face shields, coveralls, safety harnesses, respirators, ear protectors/plugs, harnesses, breathing apparatus, ropes, reflector vests, air samplers, gas detectors, and radiation badges to ensure the safety of self and others in accordance with company, CSAQ, and OHSA requirements, and manufacturers' instructions.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

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U5455.03      Recognize and assess hazards and hazardous conditions including heights, scaffolds, and lifts, work site conditions, welding operations, material handling and storage, heavy equipment operations, crane operations, hoisting and lifting operations and trenching, and others, in compliance with company procedures, OHSA, WHMIS, and applicable codes and regulations.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

U5455.04      Control hazards by taking appropriate steps to contain, eliminate and report hazards to protect self and others, in accordance with company policies, OHSA, WHMIS, and applicable codes and regulations.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5455.0      PROTECT SELF AND OTHERS - Cont'd

U5455.05      Assemble, erect, use and dismantle platforms and scaffolds including lifting devices, swing stages, and bosun's chairs, by following engineering drawings, manufacturers' recommendations, company policies, and OHSA.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5455.06      Perform lock out and tagging procedures to isolate hazardous or defective equipment by advising appropriate authorities, installing lock out device and retaining key, attaching tags, repairing problem if required, and removing lock out device in accordance with OHSA, manufacturers' instructions, CEC, and company policies.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5455.07      Operate and maintain tools and equipment including wrenches, electric hand tools, torches, pipe cutters, fastening tools, measuring tools, cutting tools, joining tools, leveling tools, grinding tools, drilling tools, rigging tools, A-frame, fork lift, and other material handling equipment, in accordance with manufacturers' recommendations, WHMIS, OHSA, and company policies.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

## **PLUMBER TRAINING STANDARD**

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**U5455.0      PROTECT SELF AND OTHERS - Cont'd**

U5455.08      Perform housekeeping duties to ensure a safe working environment by: removing and disposing excess or unwanted materials; positioning equipment; identifying the location of first aid equipment and supplies; maintaining heat, light and ventilation; ensuring job site meets customers' expectations of cleanliness; and, erecting protective barriers; in accordance with company policies, WHMIS, EPA, TSSA, OHSA, and other regulations.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Employer's Name**

**Employer's Signature**

\_\_\_\_\_

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## PLUMBER TRAINING STANDARD

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### U5456.0 COMMUNICATE

#### GENERAL PERFORMANCE OBJECTIVE

Communicate by: demonstrating effective interpersonal relations, recognizing human rights and equality; developing a work plan; giving instructions to others; reading and interpreting documents and specifications; writing job-related documents; and, practicing personal hygiene.

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#### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

\_\_\_\_\_

\_\_\_\_\_

#### SKILLS

U5456.01 Demonstrate effective interpersonal relations, recognizing human rights and equality by: listening to customers and co-workers by: using verbal and non-verbal signals to convey messages; using language acceptable in the work place; recognizing the chain of command on a work site; explaining problems and procedures; identifying alternate solutions; obtaining approvals from customers; leaving a copy of the warranty; and, explaining operation, maintenance and warranties to clients clearly, politely, and completely.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

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## PLUMBER TRAINING STANDARD

### **U5456.0 COMMUNICATE - Cont'd**

U5456.02 Develop a work plan by: receiving, assessing and reacting to instructions; gathering required materials and tools; communicating with others; and, determining time needed to ensure that the task is completed in accordance with specifications, codes, and company standards.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5456.03 Give instructions to others by: clearly identifying steps to be followed; setting out conditions under which instructions are to be completed; and, determining time frames; to ensure recipient can complete assigned task in accordance with the instructions given.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5456.04 Read and interpret documents and/or specifications including codes, acts, regulations, specifications, work orders, change orders, shop drawings, trade-related publications, manufacturers' instructions, office memos, and others in order to complete tasks, gather information, complete installations and ensure compliance with instructions, policies, and legislation.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5456.05 Write job-related documents including work orders, change orders, office memos, letters, accident reports, and forms, ensuring that documents are written clearly, legibly, and completely in accordance with company standards.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

## **PLUMBER TRAINING STANDARD**

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**U5456.0      COMMUNICATE - Cont'd**

U5456.06      Practice personal hygiene by: wearing appropriate apparel; observing personal hygiene standards; and, maintaining clean clothing, in accordance with pertinent safety regulations, clients' requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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**Employer's Name**

**Employer's Signature**

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## PLUMBER TRAINING STANDARD

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### U5457.0 READ, INTERPRET, CREATE AND MAINTAIN DRAWINGS AND SPECIFICATIONS

#### GENERAL PERFORMANCE OBJECTIVE

Read, interpret, create and maintain drawings and specifications by: identifying, reading and interpreting drawings and specifications; identifying and selecting drawing equipment; creating drawings and sketches; following the drawing approval process; and, maintaining documentation.

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#### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

\_\_\_\_\_

\_\_\_\_\_

#### SKILLS

U5457.01 Identify drawings and specifications by: reading the drawing title block and/or title page; determining the logical sequence of site, architectural, mechanical, electrical, structural, and shop drawings; and, cross checking to ensure set is complete; so that the correct drawings and specifications are identified, to contribute to the efficient completion of the project.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

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U5457.02 Read and interpret drawings and specifications by: identifying and interpreting symbols used on drawings, charts, guides, and schedules, ensuring the interpretations are correct and conform to industry standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

### **U5457.0 READ, INTERPRET, CREATE AND MAINTAIN DRAWINGS AND SPECIFICATIONS - Cont'd**

U5457.03 Identify and select drawing equipment including T-squares, triangles, right angles, scale rulers, Computer-Assisted Drawing (CAD) programs, and output devices, ensuring that drawing equipment selected is correct to produce drawings and/or sketches to company and client standards.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5457.04 Create drawings and sketches including schematics, drain plans, elevations, isometric, interference, spool sheets, and “as built,” using available tools and technology to ensure drawing set is complete in order to facilitate the completion of the job.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5457.05 Follow the drawing approval process by: identifying the appropriate authorities including municipalities, engineers, architects, owners, and clients and following the required steps so that drawings are approved and ready, in accordance with company standards.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

## **PLUMBER TRAINING STANDARD**

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**U5457.0      READ, INTERPRET, CREATE AND MAINTAIN DRAWINGS AND SPECIFICATIONS - Cont'd**

U5457.06      Maintain documentation by: entering changes on “as built” drawings; revising, modifying, and updating drawings; creating a tag system, and a maintenance and equipment directory; and, using tools and technology, ensuring documents are updated and complete, in accordance with the requirements of approving authorities and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

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**Employer's Name**

**Employer's Signature**

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# PLUMBER TRAINING STANDARD

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## U5458.0 DESIGN SYSTEMS

### GENERAL PERFORMANCE OBJECTIVE

Design systems by: identifying the type of systems to be installed; completing a heat loss/gain calculation; determining system and installation requirements; determining equipment to be installed; selecting the fixtures to be installed; selecting the devices to be installed; laying out and illustrating the system; submitting design documentation for approval.

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### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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\_\_\_\_\_

### SKILLS

U5458.01 Identify the type of systems to be installed, including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping and medical gas, ensuring that the system listed conforms with applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

U5458.02 Complete a heat loss/gain calculation so that the selection of material and equipment for the installation of hydronic heating and cooling systems complies with drawings, specifications, codes, acts and regulations.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

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## PLUMBER TRAINING STANDARD

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### U5458.0 DESIGN SYSTEMS - Cont'd

U5458.03 Determine system and installation requirements including size of openings, types of opening, fire stopping, types of materials, size of pipe supports and hangers, size of pipe, type of joining method(s), location of piping, type of fixtures, type of equipment, and the number of fixtures, by: reading, interpreting, and applying codes, acts, regulations, by-laws, job specifications, drawings, and manufacturers' catalogues, ensuring the system matches the job requirements.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

U5458.04 Determine equipment to be installed including hot water tanks, pumps, ejectors, interceptors, water conditioning equipment, sprinkler heads, fire hose cabinets, and specialty equipment by: reading, interpreting and applying codes, acts, regulations, by-laws, job specifications, drawings, and manufacturers' catalogues ensuring the equipment matches the job requirements.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

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U5458.05 Select the fixtures to be installed including water closets, bidets, bedpan washers, urinals, lavatories, baths, showers, sinks, drinking fountains, barrier free fixtures, floor drains, hub drains, and speciality fixtures by: reading, interpreting, and applying codes, acts, regulations, by-laws, job specifications, drawings, and manufacturers' catalogues ensuring the fixtures match the job requirements.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### **U5458.0      DESIGN SYSTEMS - Cont'd**

U5458.06      Select the devices to be installed including pressure reducing valves, pressure and temperature relief valves, backflow prevention devices, safety valves, control valves, flushometers, metering valves, water meters, balancing valves, tempering valves, aquastats, flush tanks, trap seal primers, and faucets by: reading, interpreting, and applying codes, acts, regulations, by-laws, job specifications, drawings, and manufacturers' catalogues ensuring the devices match the job requirements.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5458.07      Layout and illustrate the system by: creating drain plans, stack elevations, riser diagrams, schematics, spool sheets, isometric drawings, and specifications so that system layout meets the requirements of the client and/or company, codes, acts, regulations, by-laws, specifications and other governing bodies.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5458.08      Submit design documentation for approval including drawings, sketches, specifications and all related information to ensure compliance with the requirements of governing authorities, engineers, and client or client representatives.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

<b>Employer's Name</b>	<b>Employer's Signature</b>
_____	_____



# PLUMBER TRAINING STANDARD

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## U5459.0 PLAN AND PREPARE FOR THE PROJECT

### GENERAL PERFORMANCE OBJECTIVE

Plan and prepare for the project by: creating material and labour take-off; completing system installation applications and documentation; determining equipment and tools required to complete the project; expediting job material; determining job scheduling; verifying deliveries; and, storing material, equipment and tools.

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### TRAINING PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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\_\_\_\_\_

### SKILLS

U5459.01 Create material and labour take-off by: using project documents to identify material, amount of labour, and equipment required; and, determining the availability and delivery dates of material, to ensure the project meets drawings and job specifications.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

U5459.02 Complete system installation applications and documentation including for private drainage, drainage, waste and vent systems, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping, and medical gas, ensuring that documentation is completed clearly, and accurately, in accordance with municipal and provincial requirements.

Date Completed

Supervisor's Signature

Apprentice's Signature

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\_\_\_\_\_

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## PLUMBER TRAINING STANDARD

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### U5459.0 PLAN AND PREPARE FOR THE PROJECT - Cont'd

U5459.03 Determine equipment and tools required to complete the project by: using project documents; and, confirming availability to ensure efficient and smooth workflow in accordance with company policy and procedures.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

\_\_\_\_\_

U5459.04 Expedite job material by: ordering material, equipment and tools; using job specifications, catalogues, and approved shop drawings; determining the availability and delivery of material; and, confirming request with supplier; to ensure that material ordered arrives on time to fit with project schedule.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

\_\_\_\_\_

U5459.05 Determine job scheduling by: preparing flow charts for project; coordinating with other trades; and, allowing for adverse weather conditions, labour requirements, and specialty equipment; to ensure efficient handling, storage, installation, and smooth workflow.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

\_\_\_\_\_

U5459.06 Verify deliveries including material, equipment, and tools by: checking against copy of order; calling supplier as required; and, determining that material and equipment delivered match those requested.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

\_\_\_\_\_

## PLUMBER TRAINING STANDARD

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### U5459.0 PLAN AND PREPARE FOR THE PROJECT - Cont'd

U5459.07 Store material, equipment and tools so that they are available for installation by; observing any special requirements, and ensuring that materials and equipment are handled safely and are secured and protected in accordance with manufacturers' recommendations, company and site policies, OHSA, and other applicable safety regulation.

Date Completed

Supervisor's Signature

Apprentice's Signature

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Employer's Name

Employer's Signature

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## PLUMBER TRAINING STANDARD

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### U5460.0 INSTALL PIPE, FITTINGS, VALVES AND SUPPORTS

#### GENERAL PERFORMANCE OBJECTIVE

Install pipe, fittings, valves and supports by: identifying piping materials; determining pipe fittings; identifying control valves; identifying joining methods; identifying pipe supports and hangers; creating a series of openings in the structure; installing pipe supports and hangers; installing pipe and fittings; and, joining the pipe and fittings.

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#### TRAINING PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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#### SKILLS

U5460.01 Identify piping materials including cast iron, steel, copper, plastics, stainless steel, glass, aluminum, vitrified clay, and composite pipe ensuring that materials listed conform with applicable codes, acts, regulations, job specification and drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### **U5460.0 INSTALL PIPE, FITTINGS, VALVES AND SUPPORTS - Cont'd**

U5460.02 Determine pipe fittings including elbows; Y's, T's, TY's, double Y's, and double TY branch fittings; cross fittings; combination Y and  $\times$  fittings; and, double waste fittings, clean outs, fixture carriers, flanges, couplings, reducing bushings, adaptors, and expansion joints ensuring that listed fittings conform with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5460.03 Identify control valves including gate, globe, ball, check, backwater, and needle ensuring that listed control valves conform with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5460.04 Identify joining methods used in the installation of piping systems including caulked, mechanical joints, flanged, threaded, soldered, brazed, welded, bonded, compression, grooved, swaged, and flared ensuring that listed joining methods conform with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### **U5460.0 INSTALL PIPE, FITTINGS, VALVES AND SUPPORTS - Cont'd**

U5460.05 Identify pipe supports and hangers used for the installation of piping systems including clevis, ring and roller, concrete inserts, and strut systems ensuring that listed pipe supports and hangers conform with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed	Supervisor's Signature	Apprentice's Signature
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U5460.06 Create a series of openings in the structure including sleeving and drilling to allow for the installation of piping systems in conformance with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5460.07 Install pipe supports and hangers including clevis, ring and roller, concrete inserts, and metal strut ensuring that installation is completed in conformance with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5460.08 Install pipe and fittings including cast iron, steel, copper, plastics, stainless steel, glass, aluminum, vitrified clay, and composite pipe materials, ensuring that installation is completed in conformance with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed	Supervisor's Signature	Apprentice's Signature
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## PLUMBER TRAINING STANDARD

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### **U5460.0      INSTALL PIPE, FITTINGS, VALVES AND SUPPORTS - Cont'd**

U5460.09      Join the pipe and fittings using joining methods including caulked, mechanical joints, flanged, threaded, soldered, brazed, welded, bonded, compression, grooved, swaged, and flared ensuring that join is completed in conformance with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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**Employer's Name**

**Employer's Signature**

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# PLUMBER TRAINING STANDARD

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## U5461.0 INSTALL PIPING SYSTEMS

### GENERAL PERFORMANCE OBJECTIVE

Install piping systems by: determining and identifying piping systems to be installed; checking pipe and fitting characteristics; identifying the installation location; installing piping systems; labeling and/or tagging; and, installing fire stopping.

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### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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### SKILLS

U5461.01 Determine and identify piping system to be installed including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping and medical gas systems ensuring that piping system listed is in conformance with applicable codes, acts, regulations, job specifications, conditions, drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5461.02 Check pipe and fitting characteristics including manufacturer, type of material, size, schedule, and joining method(s) ensuring that pipe and fittings are in conformance with applicable codes, acts, regulations, job specification and drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5461.0 INSTALL PIPING SYSTEMS - Cont'd

U5461.03 Identify the installation location of the piping systems including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping and medical gas ensuring that the location conforms with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

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U5461.04 Install piping systems including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping and medical gas ensuring that the installation conforms with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

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U5461.05 Identify piping systems including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping and medical gas, and components by labeling and/or tagging so that piping systems are correctly identified in accordance with job specifications, and client and/or company standards.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5461.0 INSTALL PIPING SYSTEMS - Cont'd

U5461.06 Install fire stopping by: identifying the sections of the piping systems which require their installation; selecting fire stopping devices and material; and, installing fire stopping; so that fire stops are installed in accordance with manufacturers' recommendations, applicable codes, and by-laws.

Date Completed

Supervisor's Signature

Apprentice's Signature

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Employer's Name

Employer's Signature

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# PLUMBER TRAINING STANDARD

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## U5462.0 INSTALL FIXTURES

### GENERAL PERFORMANCE OBJECTIVE

Install fixtures by: identifying the fixtures; checking fixture characteristics; selecting the fixtures; assembling the fixtures and trim; identifying the installation location; installing fixture supports and hangers; installing and connecting the fixtures to piping systems; and, installing bathroom accessories.

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### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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### SKILLS

U5462.01 Identify the fixtures including water closets, bidets, bedpan washers, urinals, lavatories, baths, showers, sinks, drinking fountains, barrier free fixtures, floor drains, hub drains, and speciality fixtures for a given installation by referring to manufacture's catalogues, job specifications and drawings, acts, codes, regulations, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5462.02 Check fixture characteristics including manufacturer, type of material, size, weight, capacity, performance, colour, finish, type and location of connections to ensure that fixture characteristics meet the given system requirements, in accordance with manufacturer's catalogues, job specifications and drawings, acts, codes, regulations, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5462.0 INSTALL FIXTURES - Cont'd

U5462.03 Select the fixtures including water closets, bidets, bedpan washers, urinals, lavatories, baths, showers, sinks, drinking fountains, barrier free fixtures, floor drains, hub drains and speciality fixtures ensuring they comply with the job specifications, drawings, acts, codes, regulations, client requirements and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5462.04 Assemble the fixtures and trim including water closets, bidets, bedpan washers, urinals, lavatories, baths, showers, sinks, drinking fountains, barrier free fixtures, floor drains, hub drains and speciality fixtures ensuring that assembly conforms with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specification and drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5462.05 Identify the installation location of the fixtures including water closets, bidets, bedpan washers, urinals, lavatories, baths, showers, sinks, drinking fountains, barrier free fixtures, floor drains, hub drains and speciality fixtures ensuring that installation location conforms with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5462.0 INSTALL FIXTURES - Cont'd

U5462.06 Install fixture supports and hangers including fixture carriers and mounting brackets, so that installation can be completed in conformance to manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5462.07 Install and connect the fixtures to piping systems including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping and medical gas ensuring that fixtures are connected in conformance with applicable codes, acts, regulations, job specifications, drawings, client and/or company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5462.08 Install bathroom accessories including water closets, bidets, bedpan washers, urinals, baths, showers, sinks and speciality fixtures, ensuring that bathroom accessories are installed in accordance with job specifications, drawings, OBC, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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**Employer's Name**

**Employer's Signature**

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# PLUMBER TRAINING STANDARD

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## U5463.0 INSTALL EQUIPMENT

### GENERAL PERFORMANCE OBJECTIVE

Install equipment by: identifying equipment to be installed; checking the equipment characteristics; selecting the equipment; assembling the equipment; identifying the installation location; installing equipment supports and hangers; and, installing and connecting the equipment to piping systems.

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### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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### SKILLS

U5463.01 Identify equipment to be installed including hot water tanks, pumps, ejectors, interceptors, water conditioning equipment, fire hose cabinets, and specialty equipment using manufacturer's catalogues, job specifications, drawings, acts, codes, regulations, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5463.02 Check the equipment characteristics including manufacturer, type of material, size, weight, capacity, performance, electrical requirements, approvals, colour, finish, type and location of connections, to ensure that equipment meets the given system requirements in accordance with manufacturer's catalogues, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5463.0 INSTALL EQUIPMENT - Cont'd

U5463.03 Select the equipment including hot water tanks, pumps, ejectors, interceptors, water conditioning equipment, sprinkler heads, fire hose cabinets and specialty equipment ensuring that equipment selected complies with the job specifications, drawings, acts, codes, regulations, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5463.04 Assemble the equipment including sprinkler equipment, fire hose cabinets, pumps, ejectors, water conditioning equipment and speciality equipment ensuring that assembled equipment conforms with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5463.05 Identify the installation location of the equipment including sprinkler equipment, fire hose cabinets, pumps, ejectors, water conditioning equipment and speciality equipment ensuring that installation location conforms with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5463.0 INSTALL EQUIPMENT - Cont'd

U5463.06 Install equipment supports and hangers including housekeeping pads, spring hangers, job-built hangers, mounting brackets and supports, flexible connectors and expansion fittings so that installation is completed in conformance with applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5463.07 Install and connect the equipment to piping systems including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping and medical gas, ensuring that equipment is connected in conformance with applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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**Employer's Name**

**Employer's Signature**

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# PLUMBER TRAINING STANDARD

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## U5464.0 INSTALL DEVICES

### GENERAL PERFORMANCE OBJECTIVE

Install devices by: identifying the devices; checking the device characteristics; selecting the devices; assembling the devices; identifying the installation locations of the devices; installing device supports and hangers; and, installing and connecting the devices to equipment and piping systems.

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### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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### SKILLS

U5464.01 Identify the devices including pressure reducing valves, pressure and temperature relief valves, backflow prevention devices, safety valves, control valves, flushometers, metering valves, water meters, balancing valves, tempering valves, aquastats, flush tanks, trap seal primers and faucets for a given installation by referring to manufacturer's catalogues, job specifications and drawings, acts, codes, regulations, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5464.0 INSTALL DEVICES - Cont'd

U5464.02 Check the device characteristics including manufacturer, type of material, size, weight, capacity performance, electrical requirements, approvals, colour, finish, type and location of connections, to ensure that device conforms to system requirements in accordance with manufacturer's catalogues, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5464.03 Select the devices including pressure reducing valves, pressure and temperature relief valves, backflow prevention devices, safety valves, control valves, flushometers, metering valves, water meters, balancing valves, tempering valves, aquastats, flush tanks, trap seal primers and faucets, ensuring that devices selected comply with the manufacturer's recommendations, job specifications, drawings, acts, codes, regulations, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5464.04 Assemble the devices including backflow prevention devices, flushometers, metering valves, and faucets, ensuring that devices are assembled in accordance with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5464.0 INSTALL DEVICES - Cont'd

U5464.05 Identify the installation locations of the devices including pressure reducing valves, pressure and temperature relief valves, backflow prevention devices, safety valves, control valves, flushometers, metering valves, water meters, balancing valves, tempering valves, aquastats, flush tanks, trap seal primers, and faucets ensuring that installation is located in accordance with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5464.06 Install device supports and hangers including housekeeping pads, spring hangers, job-built hangers, mounting brackets and supports, flexible connectors, and expansion fittings so that installation can be completed in conformance with applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5464.07 Install and connect the devices to equipment and piping systems including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping, and medical gas ensuring that devices are connected in accordance with applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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Employer's Name

Employer's Signature

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## PLUMBER TRAINING STANDARD

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### U5465.0 TEST SYSTEMS

#### GENERAL PERFORMANCE OBJECTIVE

Test systems by: identifying the systems to be tested; determining system set up requirements; arranging for test or a testing schedule for piping systems; performing piping system testing procedures; and, confirming the test results.

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#### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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#### SKILLS

U5465.01 Identify the systems to be tested including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping, and medical gas ensuring that system to be tested is in accordance with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specification and drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5465.0 TEST SYSTEMS - Cont'd

U5465.02 Determine system set up requirements including type, duration, and pressures for drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping, and medical gas by reading and interpreting manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5465.03 Arrange for test or a testing schedule for piping systems by: contacting governing authorities; scheduling test; and, checking that equipment is ready and prepared for test, in accordance with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5465.04 Perform piping system testing procedures by testing the systems, and replacing defective component, device, fixture, or equipment, ensuring that system is tested and verified in compliance with applicable codes, acts, regulations, job specifications and drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5465.0 TEST SYSTEMS - Cont'd

U5465.05 Confirm test results by: receiving test results; preparing documentation; and, checking that test is successfully completed in accordance with applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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Employer's Name

Employer's Signature

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## PLUMBER TRAINING STANDARD

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### U5466.0 COMMISSION/ACTIVATE SYSTEMS

#### GENERAL PERFORMANCE OBJECTIVE

Commission/activate systems by: identifying the piping systems that require commissioning and/or activating; performing final system inspection; commissioning the system; and, instructing end users.

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#### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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#### SKILLS

- U5466.01 Identify the piping systems that require commissioning and/or activation including drainage, waste, vent, storm drainage, potable water, fire protection, hydronic heating and cooling, sewage disposal, private sewage disposal, water treatment, gas and combustible fuel, process piping, and medical gas by reading and interpreting manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5466.0 COMMISSION/ACTIVATE SYSTEMS - Cont'd

U5466.02 Perform final systems inspection by: completing piping systems and fixture installation; determining final tests required; installing appropriate test fittings; completing required tests; correcting any deficiencies; removing test; and, receiving or completing inspection reports, ensuring final test is completed in accordance with company standards, job specifications, applicable codes, and municipal by-laws.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

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U5466.03 Commission the systems by ensuring that the system is operational and functioning in accordance with manufacturer's instructions and recommendations, applicable codes, acts, regulations, job specifications, drawings, client requirements, and company standards.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

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U5466.04 Instruct end users by: explaining and demonstrating how to use and operate the system; describing maintenance requirements of equipment, devices, and fixtures; and, leaving on-site equipment documentation, user manuals or procedures, manufacturer's instructions and recommendations, ensuring that all instructions are clear, concise, and accurate so that the client's or user's questions are answered and they are prepared to monitor the system.

Date Completed                      Supervisor's Signature                      Apprentice's Signature

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**Employer's Name**

**Employer's Signature**

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# PLUMBER TRAINING STANDARD

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## U5467.0 PERFORM RIGGING AND HOISTING

### GENERAL PERFORMANCE OBJECTIVE

Perform rigging and hoisting by: reading and interpreting job specifications and shop drawings; inspecting the job site to identify potential hazards; determining the equipment required; scheduling the lift; inspecting the rigging and hoisting equipment; connecting the equipment to the rigging; securing the hoisting area; performing the lift and move; positioning and securing the load; disconnecting the load; communicating throughout the hoisting operation; and, removing and storing the rigging equipment.

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### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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### SKILLS

U5467.01 Read and interpret job specifications and shop drawings to determine the weight, size and any special rigging requirements of the material or equipment to be hoisted, so that rigging and hoisting operation is in compliance with OHSA, manufacturers' recommendations, and company procedures.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5467.02 Inspect the job site to identify potential hazards including proximity to hydro lines, ground conditions for outriggers, and accessibility of equipment to ensure safe rigging and hoisting operations may be carried out in compliance with OHSA and company and customer safety procedures.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### U5467.0 PERFORM RIGGING AND HOISTING - Cont'd

U5467.03 Determine the equipment required by calculating the weight of equipment or materials to be lifted, and the distance to the placement area so that the equipment selected is correct for the application in compliance with OHSA and company and customer safety procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5467.04 Schedule the lift by: consulting the job schedule; checking material delivery schedule; ensuring hoisting equipment availability; coordinating the hoisting crew and crane operator; and, organizing any special requirements such as road closures; so that lift is scheduled and ready in compliance with OHSA, MOT, and company and customer safety procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5467.05 Inspect the rigging and hoisting equipment to ensure that the equipment is in working order, and has sufficient capacity for the material and equipment to be hoisted, in compliance with OHSA and company and customer safety procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5467.06 Connect the equipment to the rigging using shackles, slings, hooks, rope, and other equipment so that hoisting and moving operations can be completed in compliance with OHSA and company and customer safety procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
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## PLUMBER TRAINING STANDARD

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### U5467.0 PERFORM RIGGING AND HOISTING - Cont'd

U5467.07 Secure the hoisting area by using barrier tape, barricades or other suitable means, to prevent unauthorized personnel from entering the area when hoisting and rigging operations are being performed, in compliance with OHSA and company and client safety procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5467.08 Perform the lift and move the load, ensuring that lift is completed in compliance with OHSA and company and client safety procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5467.09 Position and secure the load so that personnel are not at risk from the load shifting or falling, in compliance with OHSA and company and client safety procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5467.10 Disconnect the load from the rigging devices including eyelets, shackles, turnbuckles, hooks, and other rigging equipment ensuring that load is disconnected in compliance with OHSA and company and client safety procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
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## PLUMBER TRAINING STANDARD

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### U5467.0 PERFORM RIGGING AND HOISTING- Cont'd

U5467.11 Communicate throughout the hoisting operation using international hand signals or by contact using voice communications, in compliance with OHSA and company and client safety procedures.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5467.12 Remove and store the rigging equipment in a designated area in compliance with OHSA and company and client safety procedures.

Date Completed

Supervisor's Signature

Apprentice's Signature

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**Employer's Name**

**Employer's Signature**

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# PLUMBER TRAINING STANDARD

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## U5468.0 SERVICE AND MAINTAIN MECHANICAL SYSTEMS

### GENERAL PERFORMANCE OBJECTIVE

Service and maintain mechanical systems by: troubleshooting; diagnosing problems; preparing service and/or maintenance proposals; communicating with clients; obtaining approvals; performing the required service and/or maintenance; testing the system; re-commissioning the system; and, completing service documentation.

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### PERFORMANCE OBJECTIVES

Supervisor's/Trainer's Name (Print)

Apprentice's Name (Print)

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### SKILLS

U5468.01 Troubleshoot mechanical systems by diagnosing and assessing the problem requiring repair or replacement, in accordance with applicable codes, and client and company standards.

Date Completed

Supervisor's Signature

Apprentice's Signature

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U5468.02 Diagnose the mechanical system problems by: reading drawings, clients directories, and manufacturers' specifications; isolating areas; and, shutting down affected systems and equipment; in accordance with applicable codes, municipal by-laws, client requirements, and company procedures.

Date Completed

Supervisor's Signature

Apprentice's Signature

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## PLUMBER TRAINING STANDARD

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### **U5468.0 SERVICE AND MAINTAIN MECHANICAL SYSTEMS - Cont'd**

U5468.03 Prepare service and/or maintenance proposals by: outlining the problem for the client; suggesting recommended course of action; determining schedule for the repair(s); in compliance with the client requirements, and company procedures, applicable codes, and municipal by-laws.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5468.04 Communicate with client's representative in order to receive approval for the service and/or maintenance in compliance with client or company procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5468.05 Obtain approvals from the client, utilities, fire departments, monitoring companies, end users, and any other party that may be affected by the proposed service and/or maintenance, in accordance with company and/or client procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5468.06 Perform the required service and/or maintenance in a professional manner by ensuring that all tools, equipment and materials required are on site, and the work is performed to the client and/or company standards, and manufacturers' recommendations.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

## PLUMBER TRAINING STANDARD

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### **U5468.0 SERVICE AND MAINTAIN MECHANICAL SYSTEMS - Cont'd**

U5468.07 Test the system to ensure that the service or repair has been completed in conformance with the client requirements, company standards, and manufacturers' recommendations.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5468.08 Re-commission the system after all the repairs and/or service is complete, and the system has been tested and verified, in conformance with client's requirements, company standards, and manufacturers' recommendations.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

U5468.09 Complete service documentation by writing up billing upon completion of the service and/or maintenance, ensuring that service documentation is completed, in accordance with client's requirements, company standards, and manufacturers' recommendations.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

<b>Employer's Name</b>	<b>Employer's Signature</b>
_____	_____

**COMPETENCY ANALYSIS PROFILE**  
**PLUMBER**  
← **SKILLS** →

<b>PROTECT SELF AND OTHERS</b>  5455.0	Identify, interpret and apply acts, codes, regulations and directives  5455.01	Select, wear, adjust use and maintain personal protective equipment and apparel  5455.02	Recognize and asses hazards and hazardous conditions  5455.03	Control hazards  5455.04	Assembles, erect use and dismantle platform and scaffolds  5455.05
	Perform lock out and tagging procedures  5455.06	Operate and maintain tools and equipment  5455.07	Perform housekeeping duties		
<b>COMMUNICATE</b>  5456.0	Demonstrate effective, interpersonal relations, recognizing human rights and equality  5456.01	Develop a work plan  5456.02	Give instructions to others  5456.03	Read and interpret documents and/or specifications  5456.04	Write job-related documents  5456.05
	Practice personal hygiene  5456.06				
<b>READ INTEPRET CREATE AND MAINTAIN DRAWINGS AND SPECIFICATIONS</b>  5457.0	Identify drawings and specifications  5457.01	Read and interpret drawings and specifications  5457.02	Identify and select drawing equipment  5457.03	Create drawings and sketches  5457.04	Follow the drawing approval process  5457.05
	Maintain documentation  5457.06				



**COMPETENCY ANALYSIS PROFILE**  
**PLUMBER**  
**SKILLS**

<b>DESIGN SYSTEMS</b>  5458.0	Identify type of system to be installed  5458.01	Complete a heat loss/gain calculation  5458.02	Determine system and installation requirements  5458.03	Determine equipment to be installed  5458.04	Select the fixtures to be installed  5458.05
	Select the devices to be installed  5458.06	Layout and illustrate the system  5458.07	Submit design documentation for approval  5458.08		
<b>PLAN AND PREPARE FOR THE PROJECT</b>  5459.0	Create material and labour take-off  5459.01	Complete system installation application and documentation  5459.02	Determine equipment and tools required to complete project  5459.03	Expedite job material  5459.04	Determine job scheduling  5459.05
	Verify deliveries  5459.06	Store material equipment and tools  5459.07			
<b>INSTALL PIPE, FITTINGS VALVES AND SUPPORTS</b>  5460.0	Identify piping materials  5460.01	Determine pipe fittings  5460.02	Identify control Valves  5460.03	Identify joining methods  5460.04	Identify pipe supports and hangers  5460.05
	Creative a series of openings in the structure  5460.06	Install pipe supports and hangers  5460.07	Install pipe and fittings  5460.08	Join the pipe and fittings  5460.09	

# COMPETENCY ANALYSIS PROFILE

## PLUMBER

### SKILLS



<b>INSTALL PIPING SYSTEMS</b>  <b>5461.0</b>	Determine and identify piping systems to be installed  5461.01	Check pipe and fitting characteristics  5461.02	Identify the installation location of piping systems  5461.03	Install piping systems  5461.04	Label and/or tag piping systems  5461.05
	Install fire stopping  5461.06				
<b>INSTALL FIXTURES</b>  <b>5462.0</b>	Identify the fixtures  5462.01	Check fixture characteristics  5462.02	Select the fixtures  5462.03	Assemble the fixtures and trim  5462.04	Identify the installation location of the fixtures  5462.05
	Install fixture supports and hangers  5462.06	Install and connect the fixtures  5462.07	Install bathroom accessories  5462.08		
<b>INSTALL EQUIPMENT</b>  <b>5463.0</b>	Identify equipment to be installed  5463.01	Check the equipment characteristics  5463.02	Select the equipment  5463.03	Assemble the equipment  5463.04	Identify the installation location of the equipment  5463.05
	Install equipment supports and hangers  5463.06	Install and connect the equipment to piping systems  5463.07			

**COMPETENCY ANALYSIS PROFILE**  
**PLUMBER**  
**SKILLS**

<b>INSTALL DEVICES</b>  5464.0	Identify the devices  5464.01	Check the device characteristic  5464.02	Select the devices  5464.03	Assemble the devices  5464.04	Identify the installation locations  5464.05
	Install device supports and hangers  5464.06	Install and connect the devices to equipment and piping systems  5464.07			
<b>TEST SYSTEMS</b>  5465.0	Identify the systems to be tested  5465.01	Determine system set up required  5465.02	Arrange for test or a testing schedule  5465.03	Perform piping system procedures  5465.04	Confirm test results  5465.05
<b>COMMISSION ACTIVATE SYSTEMS</b>  5466.0	Identify piping systems requiring commissioning and/or activation  5466.01	Perform final systems inspection  5466.02	Commission the systems  5466.03	Instruct end users  5466.04	
<b>PERFORM RIGGING AND HOISTING</b>  5467.0	Read and interpret job specifications and shop drawings  5467.01	Inspect the job site  5467.02	Determine the equipment required  5467.03	Schedule the lift  5467.04	Inspect the rigging and hoisting equipment  5467.05
	Connect the equipment to the rigging  5467.06	Secure the hoisting area  5467.07	Perform the lift and move the load  5467.08	Position and secure the load  5467.09	Disconnect the load from the rigging devices  5467.10
	Communicate throughout the operation  5467.11	Remove and store rigging equipment  5467.12			

**COMPETENCY ANALYSIS PROFILE**  
**PLUMBER**  
← **SKILLS** →

<b>SERVICE AND MAINATIN MECHANICAL SYSTEMS</b>  5468.0	Troubleshoot mechanical systems  5468.01	Diagnose the mechanical system problems  5468.02	Prepare service and/or maintenance proposals  5468.03	Communicate with clients representatives  5468.04	Obtain approvals from the client and others  5468.05
	Perform the required service and/or maintenance  5468.06	Test the system  5468.07	Recomission the system  5468.08	Complete service documentation  5468.09	