

SKILLED**TRADES**<sup>BC</sup>

# Personal Record Book

*Steamfitter/Pipefitter*

This is your Record Book!

## **DO NOT SUBMIT TO SKILLEDTRADESBC**

This is not required to achieve certification

- It is a record of your progress towards achieving certification in the trade
- It provides a record of your experience
- It is your responsibility to keep it up-to-date
- Take it with you if you change employers

*Note: Employers and supervisors are not responsible for keeping your Record Book up-to-date. They are responsible for sign-off of hours and sign-off of competencies once you have achieved the required level of skills and knowledge.*

# APPRENTICE IDENTIFICATION

**Trade: STEAMFITTER/PIPEFITTER**

Legal First Name:		Legal Last Name:	
Suite Number:	Street Number and Name:		
City:		Province:	Postal Code:
Telephone Number: (    )		Email Address:	

## Work Safely!

A safe work attitude contributes to an accident free environment. Accident prevention and safe working conditions are the responsibility of both employers and employees.

Wear the required personal protective equipment, follow safe work practices and follow all safety regulations applicable to specific job activities.

Employer's responsibilities:

- Provide and maintain safety equipment and protective devices
- Ensure proper safe work clothing is worn
- Enforce safe work procedures
- Provide safeguards for machinery, equipment and tools
- Observe all accident prevention regulations
- Train employees in safe use and operation of equipment

Employee's responsibilities:

- Work in accordance with the safety regulations pertaining to job environment
- Work in such a way as not to endanger themselves or fellow workers.

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# EMPLOYER INFORMATION

## Originating Employer

Start Date:	End Date:
Employer:	
Contact Person:	
Address:	Phone:
	Email:
	Fax:
Supervisor/Journeyman 1:	*TWID #:
	Phone:
	Email:
Supervisor/Journeyman 2:	TWID #:
	Phone:
	Email:

**\*TWID # – Trade Worker Identification Number**

*If you have more than one employer during your apprenticeship, record the information for subsequent employers on the following page(s).*

If your job ends or you change employers...

**Before leaving your place of employment:**

- Please have your sponsor update your Work Based Training hours on their [SkilledTradesBC Portal account](#).
- Update Record of Competencies with your supervisor.
- Confirm with your employer that your workplace hours have been reported to SkilledTradesBC, and if possible get a copy of all Work-Based Training Hours reports submitted.
- Notify SkilledTradesBC of the change in your employment by submitting an [Online Registration Request](#) with your new employer on the SkilledTradesBC Portal.

When re-employed...

**You must be registered with your new employer before submitting any work-based training hours to SkilledTradesBC.**

## Subsequent Employers

Start Date:	End Date:
Employer:	
Contact Person:	
Address:	Phone:
	Email:
	Fax:
Supervisor/Journeyperson 1:	TWID #:
	Phone:
	Email:
Supervisor/Journeyperson 2:	TWID #:
	Phone:
	Email:

## Subsequent Employers

Start Date:	End Date:
Employer:	
Contact Person:	
Address:	Phone:
	Email:
	Fax:
Supervisor/Journeyperson 1:	TWID #:
	Phone:
	Email:
Supervisor/Journeyperson 2:	TWID #:
	Phone:
	Email:

# WORKPLACE HOURS

## Instructions

Make an entry in this section each time your hours are reported to SkilledTradesBC.

1. Get a copy of the *Workplace Hours Report* from your employer.
2. Fill in the dates of the reporting period and the hours reported.
3. Enter your employer name, address and phone number.
4. Keep your Record Book in a safe place.

### Workplace Hours

**Workplace hours** must be submitted to SkilledTradesBC by your employer on a regular basis. Your hours should be reported at least every six months; however, every three months is preferred.

At the beginning of your apprenticeship discuss the frequency of reporting with your employer.

Keeping Workplace hours up-to-date in your Record Book gives you the tools to better manage your apprenticeship. It provides you with the opportunity to:

- Follow up with your employer each reporting period to ensure your hours are reported on a regular basis.
- Discuss your progress with your direct supervisor/journeyperson on a regular basis.





# RECORD OF COMPETENCIES

## Instructions

The Record of Competencies is filled out and signed-off by the journeyperson supervising your work.

1. Know what skills are expected at each level of the program.
2. Ask the journeyperson to sign off on the competency when you have acquired the skills and are able to perform the task without supervision.
3. If the journeyperson agrees that you have the required skills, he/she will:
  - Record the date that the competency was achieved
  - Sign off on the competency
  - Enter his/her Trades Worker Identification Number (TWID #)

### What is a Record of Competencies?

The Record of Competencies lists all competencies you should be knowledgeable in prior to receiving your certification. Keeping this section up to date will allow you to track your progress towards certification and demonstrate proficiency in the skills within the scope of your trade. Completion of the entire program should result in you becoming a skilled and knowledgeable journeyperson.

- Refer to this section periodically to ensure you are getting the work experience you need.
- Use the competencies as a guide to ensure work tasks are assigned so that you acquire the skills and knowledge required to be successful in the trade.

Review the Record of Competencies on a regular basis with your direct supervisor/journeyperson to ensure they have been completed.

### Program Outline

The Program Outline provides detailed information on the scope of knowledge and skills expected at each level of the program, further defining the competencies listed in the Record Book. The Program Outline is a great resource for developing a training plan.

Download from: <https://skilledtradesbc.ca/sheet-metal-worker>

### Apprenticeship Toolkit

For general information on apprenticeship and tips for navigating the apprenticeship system in BC visit SkilledTradesBC's website to learn about the [apprenticeship basics](#).

# LEVEL 1

## **IMPORTANT!**

Download the Program Outline!

<https://skilledtradesbc.ca/steamfitterpipefitter>

Read the competency tables

Some competencies are taught in many levels

For detailed information about that competency, go to the Program Outline

## **THEORY**

### **LINE A: PERFORM SAFETY RELATED FUNCTIONS**

- ☐ Identify and use lock-out procedures
- ☐ Identify classes of fires

### **LINE B: USE TOOLS AND EQUIPMENT**

- ☐ Describe measuring and leveling equipment
- ☐ Inspect and maintain tools and equipment
- ☐ Describe crane safety
- ☐ Describe crane types
- ☐ Identify common welding processes, types, positions, joints and symbols
- ☐ Describe air-fuel and oxy-fuel equipment to braze and solder

### **LINE C: PERFORM ROUTINE TRADE ACTIVITIES**

- ☐ Interpret information found on a set of drawings
- ☐ Identify codes, standards and organizations

## LINE D: PERFORM LAYOUT AND INSTALLATION OF PIPING AND COMPONENTS

- ☐ Describe the installation of valves
- ☐ Describe structure penetration
- ☐ Describe servicing of valves

## LINE E: PERFORM FABRICATION

- ☐ Describe the installation of supports and hangers

## LINE F: USE COMMUNICATION TECHNIQUES

- ☐ Describe effective communication practices

# PRACTICAL

## LINE A: PERFORM SAFETY RELATED FUNCTIONS

- ☐ Manage workplace hazards
- ☐ Use WHMIS
- ☐ Use Personal Protective Equipment (PPE) and safety equipment
- ☐ Maintain Personal Protective Equipment (PPE) and safety equipment
- ☐ Select fire extinguishers for class of fire and relevant condition

## LINE B: USE TOOLS AND EQUIPMENT

- ☐ Use hand, portable and stationary power tools
- ☐ Select and use ladders and elevated platforms
- ☐ Use hoisting, lifting and rigging equipment
- ☐ Use welding equipment
- ☐ Use oxy-fuel cutting equipment

## LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- ☐ Apply formulas
- ☐ Calculate piping measurements and offsets
- ☐ Perform conversions and heat load calculations
- ☐ Use drafting symbols, lettering and line conventions
- ☐ Convert between orthographic and isometric projections
- ☐ Create an isometric drawing of a basic orthographic piping arrangement

## LINE D: PERFORM LAYOUT AND INSTALLATION OF PIPING AND COMPONENTS

- ☐ Select fittings
- ☐ Install fittings
- ☐ Layout and install piping and tubing for carbon steel, stainless steel, copper and plastic

## LINE E: PERFORM FABRICATION

- ☐ Fabricate brackets, supports, hangers, guides and anchors

Supervisor Signature

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## NOTES FROM LEVEL 1

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## LEVEL 2

### **IMPORTANT!**

Download the Program Outline!

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Read the competency tables

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## THEORY

### **LINE B: USE TOOLS AND EQUIPMENT**

- ☐ Describe American Standard of Mechanical Engineers (ASME) procedures
- ☐ Describe pressure measuring tools
- ☐ Interpret pressure readings

### **LINE C: PERFORM ROUTINE TRADE ACTIVITIES**

- ☐ Describe methods of combustion air supply
- ☐ Describe draft
- ☐ Describe the building as a system
- ☐ Interpret drawings
- ☐ Identify codes, standards and organizations
- ☐ Interpret codes and standards for the B149.1 Gas Code series
- ☐ Describe manufacturer and supplier documentation

### **LINE D: PERFORM LAYOUT AND INSTALLATION OF PIPING AND COMPONENTS**

- ☐ Describe the layout of specialty piping
- ☐ Describe the installation of specialty piping

## LINE G: INSTALL HEAT TRACING SYSTEM

- ☐ Describe the installation of liquid-filled tracing systems
- ☐ Describe repair procedures for liquid tracing systems
- ☐ Describe testing procedures for liquid tracing systems

## LINE H: INSTALL HYDRONIC SYSTEMS

- ☐ Describe the operation of forced air systems
- ☐ Describe the operation of hydronic heating systems
- ☐ Describe the installation of equipment for hydronic systems
- ☐ Describe hydronic systems
- ☐ Describe the installation of piping for hydronic systems

## LINE K: APPLY ELECTRICAL CONCEPTS

- ☐ Describe electrical concepts
- ☐ Describe single phase and three phase power supplies
- ☐ Identify transformers

## LINE L: PLAN GAS-FIRED SYSTEMS INSTALLATION

- ☐ Describe gas-fired appliances

## LINE V: INSTALL MARINE SYSTEMS

- ☐ Describe piping systems in marine applications
- ☐ Describe marine structure penetrations
- ☐ Describe marine piping layout
- ☐ Describe the fabrication of a marine piping assembly
- ☐ Describe the installation of a marine piping assembly
- ☐ Describe repair procedures for marine systems



## PRACTICAL

### LINE B: USE TOOLS AND EQUIPMENT

- ☐ Use hoisting, lifting and rigging equipment
- ☐ Use arc welding equipment
- ☐ Use U-tube manometers
- ☐ Use electrical testing meters to test voltage, amperage, resistance and continuity

### LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- ☐ Calculate air requirements and products of combustion
- ☐ Source manufacturer documentation

### LINE E: PERFORM FABRICATION

- ☐ Develop templates for piping system components
- ☐ Use templates to fabricate components
- ☐ Bend pipe using cold bending methods

### LINE H: INSTALL HYDRONIC SYSTEMS

- ☐ Calculate volumetric thermal expansion

### LINE K: APPLY ELECTRICAL CONCEPTS

- ☐ Solve simple problems using Ohm's and Kirchhoff's laws

Supervisor Signature

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## NOTES FROM LEVEL 2

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## LEVEL 3

### **IMPORTANT!**

Download the Program Outline!

<https://skilledtradesbc.ca/steamfitterpipefitter>

Read the competency tables

Some competencies are taught in many levels

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## THEORY

### **LINE C: PERFORM ROUTINE TRADE ACTIVITIES**

- ☐ Describe 3D modeling
- ☐ Describe sections of American Standard of Mechanical Engineers (ASME) code

### **LINE G: INSTALL HEAT TRACING SYSTEM**

- ☐ Describe the installation of liquid-filled tracing systems
- ☐ Describe repair procedures for steam tracing systems
- ☐ Describe testing procedures for steam tracing systems

### **LINE H: INSTALL HYDRONIC SYSTEMS**

- ☐ Describe switches
- ☐ Describe sizing of pipe and components for hydronic systems
- ☐ Describe the installation of hydronic heating and cooling generating systems
- ☐ Describe the testing of hydronic systems
- ☐ Describe repair procedures for hydronic systems

## LINE I: INSTALL STEAM SYSTEMS

- ☐ Describe low pressure steam systems
- ☐ Describe the installation of low pressure steam equipment
- ☐ Interpret steam tables
- ☐ Describe the installation of low pressure steam piping systems
- ☐ Describe hydrostatic testing for low pressure steam systems
- ☐ Describe repair procedures for low pressure steam systems

## LINE J: INSTALL INDUSTRIAL WATER AND WASTE SYSTEMS

- ☐ Describe the installation of industrial water and waste equipment
- ☐ Describe the installation of industrial water and waste system piping
- ☐ Describe testing for industrial water and waste systems
- ☐ Describe the repair of industrial water and waste systems

## LINE K: APPLY ELECTRICAL CONCEPTS

- ☐ Identify electrical diagrams
- ☐ Analyze simple circuits
- ☐ Describe appliance circuits
- ☐ Describe wiring components
- ☐ Describe conductor installation
- ☐ Describe wire termination
- ☐ Interpret the Canadian Electrical Code Part 1
- ☐ Interpret the Electrical Safety Regulations

## LINE L: PLAN GAS-FIRED SYSTEMS INSTALLATION

- ☐ Describe piping, tubing and hoses
- ☐ Describe the operation of gas valve trains for appliances rated at 400 MBH or less
- ☐ Describe the purpose and operation of gas pressure regulators
- ☐ Describe flame detectors
- ☐ Describe the operation of standing pilot/thermocouple systems
- ☐ Describe burners
- ☐ Describe the operation of atmospheric burners
- ☐ Describe burner orifices

## LINE M: INSTALL FUEL SYSTEMS

- ☐ Describe fuel delivery systems
- ☐ Describe the installation of fuel system equipment
- ☐ Describe the installation of piping, tubing and hoses for natural gas applications
- ☐ Describe the installation of fuel system piping
- ☐ Describe manual shut-off valves installation
- ☐ Describe gas pressure regulator installation
- ☐ Describe testing for fuel systems (excludes natural gas)
- ☐ Describe the repair of fuel systems (excludes natural gas)

## LINE N: INSTALL MEDICAL GAS SYSTEMS

- ☐ Describe the installation of medical gas equipment
- ☐ Describe the installation of piping for medical gas systems
- ☐ Describe testing for medical gas systems
- ☐ Describe repair procedures for medical gas systems

## LINE W: INSTALL BACKFLOW PREVENTION

- ☐ Describe the installation of cross connection assemblies
- ☐ Describe testing of cross connection assemblies

- ☐ Describe the troubleshooting and repair of cross connection control assemblies

# PRACTICAL

## LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- ☐ Create a bill of material
- ☐ Create a piping installation drawing

## LINE H: INSTALL HYDRONIC SYSTEMS

- ☐ Install relays
- ☐ Install controls for hydronic systems
- ☐ Perform heat loss/gain calculations

## LINE K: APPLY ELECTRICAL CONCEPTS

- ☐ Sketch a series and parallel circuit
- ☐ Sketch a ladder diagram

## LINE L: PLAN GAS-FIRED SYSTEMS INSTALLATION

- ☐ Size piping and tubing systems
- ☐ Select valves

Supervisor Signature

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## NOTES FROM LEVEL 3

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## LEVEL 4

### **IMPORTANT!**

Download the Program Outline!

<https://skilledtradesbc.ca/steamfitterpipefitter>

Read the competency tables

Some competencies are taught in many levels

For detailed information about that competency, go to the Program Outline

## THEORY

### **LINE C: PERFORM ROUTINE TRADE ACTIVITIES**

- ☐ Interpret P&ID drawings and their components

### **LINE I: INSTALL STEAM SYSTEMS**

- ☐ Describe high pressure steam systems
- ☐ Describe sizing of pipe
- ☐ Describe the installation of high pressure steam piping systems
- ☐ Describe hydrostatic testing for high pressure steam systems
- ☐ Describe the repair of high pressure steam systems

### **LINE K: APPLY ELECTRICAL CONCEPTS**

- ☐ Describe single phase motors
- ☐ Describe three phase motors

### **LINE L: PLAN GAS-FIRED SYSTEMS INSTALLATION**

- ☐ plan a gas piping installation

### **LINE M: INSTALL FUEL SYSTEMS**

- ☐ Describe installation of passive air supply systems
- ☐ Describe testing and purging procedures for pipe under 4 inch diameter

## LINE O: INSTALL PROCESS PIPING SYSTEMS

- ☐ Describe process piping systems
- ☐ Describe the installation of process piping equipment
- ☐ Describe the installation of process pipe
- ☐ Describe testing for process piping systems
- ☐ Describe the repair of process piping systems

## LINE P: INSTALL HYDRAULIC SYSTEMS

- ☐ Describe the principles of hydraulic and fluid power
- ☐ Describe the installation of hydraulic system equipment
- ☐ Describe the installation of hydraulic piping
- ☐ Describe testing for hydraulic systems
- ☐ Describe the repair of hydraulic systems

## LINE Q: INSTALL COMPRESSED AIR AND PNEUMATIC SYSTEMS

- ☐ Describe compressed air and pneumatic systems
- ☐ Describe the installation of compressed air and pneumatic system equipment
- ☐ Describe the installation of compressed air and pneumatic piping and tubing
- ☐ Describe testing for compressed air and pneumatic systems
- ☐ Describe the repair of compressed air and pneumatic systems

## LINE R: INSTALL HEAT RECOVERY SYSTEMS

- ☐ Describe heat recovery systems
- ☐ Describe the installation of heat recovery system equipment
- ☐ Describe the installation of heat recovery piping
- ☐ Describe testing for heat recovery systems
- ☐ Describe the repair of heat recovery systems

## LINE S: INSTALL HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION SYSTEMS (HVACR)

- ☐ Describe HVACR systems
- ☐ Describe the installation of HVACR equipment
- ☐ Describe the installation of HVACR piping
- ☐ Describe testing for HVACR systems
- ☐ Describe the repair of HVACR systems

## LINE T: INSTALL SPECIALTY SYSTEMS

- ☐ Describe the installation of geo-thermal heating equipment
- ☐ Describe the installation of solar heating equipment
- ☐ Describe the installation of fire protection equipment
- ☐ Describe the installation of geo-thermal heating piping
- ☐ Describe the installation of solar heating piping
- ☐ Describe the installation of fire protection piping
- ☐ Describe the testing of geo-thermal heating systems
- ☐ Describe the testing of solar heating systems
- ☐ Describe the testing of fire protection systems
- ☐ Describe the repair of geo-thermal heating systems
- ☐ Describe the repair of solar heating systems
- ☐ Describe the repair of fire protection systems

## LINE U: PERFORM COMMISSIONING

- ☐ Describe the preparation of a system for commissioning and start-up
- ☐ Describe commissioning requirements for piping assemblies
- ☐ Describe commissioning documentation

## PRACTICAL

### LINE B: USE TOOLS AND EQUIPMENT

- ☐ Use rigging, hoisting, lifting and positioning equipment
- ☐ Prepare cranes for hoisting
- ☐ Secure loads for rigging removal

### LINE F: USE COMMUNICATION TECHNIQUES

- ☐ Use mentoring techniques

### LINE I: INSTALL STEAM SYSTEMS

- ☐ Install high pressure steam system equipment
- ☐ Perform calculations for high pressure steam systems

### LINE P: INSTALL HYDRAULIC SYSTEMS

- ☐ Assemble a hydraulic piping system

Supervisor Signature

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## NOTES FROM LEVEL 4

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## MISSING COMPETENCIES?

**To develop the best journeyperson possible employers should attempt to provide training in all competencies for the trade. This is not always possible.**

If your employer is unable to provide training in any competency required for your trade, note that competency below. Competencies listed here will remain unsigned until your employer can provide training in that area or until you find an alternate way to gain the experience needed.

Competency:	Date:
Reason:	
Alternate plan:	

Competency:	Date:
Reason:	
Alternate plan:	

# TECHNICAL TRAINING

## Instructions

Keep a record of each level of technical training completed.

### Level 1

Date Completed:	Training Provider:
Mark:	Instructor:

### Level 2

Date Completed:	Training Provider:
Mark:	Instructor:

### Level 3

Date Completed:	Training Provider:
Mark:	Instructor:

### Level 4

Date Completed:	Training Provider:
Mark:	Instructor:

# COMPLETION REQUIREMENTS

## Instructions

Keep a record of each program completion requirement achieved.

## STEAMFITTER/PIPEFITTER

- ☐ Level 1 - Technical Training
- ☐ Level 2 - Technical Training
- ☐ Level 3 - Technical Training
- ☐ Level 4 - Technical Training
  
- ☐ 6,300 Work-Based Training Hours
  
- ☐ Interprovincial Red Seal examination
- ☐ Recommendation for Certification signed by sponsor

Note: After all other completions requirements have been met, SkilledTradesBC sends a Recommendation for Certification form to the sponsor requesting signoff.



# CERTIFICATIONS

## Instructions

Keep a record of the credentials and endorsements you have earned, including the certification number and date of issue.

CREDENTIAL EARNED	NUMBER	DATE OF ISSUE

*If you have any questions, please contact SkilledTradesBC  
Customer Service at [customerservice@skilledtradesbc.ca](mailto:customerservice@skilledtradesbc.ca)  
778-328-8700 or toll free (within BC) at 1-800-660-6011*