PROGRAM PROGRAMME
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Trade Profile

Gasfitter - Class A

INTERPROVINCIAL STANDARD
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Structure of the Trade Profile

This profile has two sections that provide a snapshot of the trade's description, and all trade activities as they are organized in the Red Seal Occupational Standard:

Description of the Gasfitter – Class A trade: an overview of the trade's duties, work environment, job requirements, similar occupations and career progression

Task Matrix: a chart which outlines graphically the major work activities, tasks and sub-tasks of this standard

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

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

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

Description of the Gasfitter – Class A Trade

Gasfitters – Class A design, install, test, adjust, maintain, and repair fuel piping systems, venting, air supply systems, appliances, equipment and accessories in various sectors.

Gasfitters – Class A may work in residential, manufacturing, industrial, commercial, and institutional (ICI) sectors where large fuel-fired appliances and equipment are encountered. These appliances can consume thousands of cubic meters of fuel per hour and may have very sophisticated burner management systems that rely on monitoring and safety interlocks and an integrated operating interface.

They work on appliances and equipment including those exceeding 400 000 British Thermal Units per hour (Btuhs) or 120 kilowatts (kW).

Appliances and equipment may include boilers, burners, makeup air units, furnaces, process burners, domestic and commercial equipment, and various other fuel-fired equipment. Some can be quite complex and may incorporate sophisticated electronic control systems and monitoring circuits.

Depending on regional and jurisdictional regulations and limitations, fuels may include natural gas, manufactured gas, oil, liquefied petroleum gas, digester gas, landfill gas, biogas, hydrogen or a mixture or dilution of any of these gases.

Gasfitters – Class A may be employed to repair and extend gas lines, and install, repair and service pipes and fittings between mains and buildings. They may also be employed in the propane, compressed natural gas (CNG) and hydrogen industry to install and service propane containers, vaporizers, metering, dispensing and pumping equipment. With the increase in demand for renewable natural gas (RNG), gasfitters – class A may work in landfill, digester and biogas facilities used to produce and supply RNG to utilities and for internal use.

For health and safety reasons, the gas fitting trade is regulated across Canada.

In some jurisdictions, to perform tasks such as welding, rigging and hoisting, gasfitters - class A may need to acquire additional certification.

As the volume of fuel gas at a facility increases, so does the risk. It is essential that gasfitters – class A have strong mechanical aptitudes, problem-solving skills and a good understanding of electrical/electronic control systems, combustion theory and flame safeguard systems, and their regulatory requirements. There is a requirement for strong mathematical, spatial visualization and communication skills. Gasfitters – Class A must be able to interpret drawings and technical manuals.

Conditions may be stressful as the work environment for gasfitters – class A is varied and may involve working in extreme or adverse conditions both indoors and outdoors. They may work in confined spaces, at heights, around heavy equipment and piping systems and may be required to respond to hazardous emergencies at any time. There are hazards involved in working with electricity, flammable and toxic gases, and power tools.

Gasfitters – Class A require manual dexterity and upper and lower limb coordination. Good physical condition is important because the work often requires considerable standing, lifting and moving of heavy items. They are also required to crouch, bend, kneel, crawl and twist when moving around equipment and piping systems.

This standard recognizes similarities or overlaps with the work of other trades such as gasfitters – class B, plumbers, steamfitters/pipefitters, oil heat system technicians, welders, refrigeration and air conditioning mechanics, electricians, sheet metal workers, and instrumentation and control technicians. Experienced gasfitters – class A often act as mentors and coaches to apprentices in the trade. Career advancement opportunities may include supervisory positions such as supervisor, maintenance manager or service manager, starting their own contracting business, working for provincial/territorial regulators or becoming trainers.

Gasfitter – Class A
Task Matrix and Weightings

A – Performs common occupational skills — 5%

Task A-1 Performs safety-related functions 22%	**A-1.01** Maintains safe work environment	**A-1.02** Uses personal protective equipment (PPE) and safety equipment	
Task A-2 Uses tools and equipment 38%	**A-2.01** Uses hand and power tools	**A-2.02** Uses technical instruments and testers	**A-2.03** Uses access equipment
	A-2.04 Operates lifting, rigging and hoisting equipment		
Task A-3 Organizes work 36%	**A-3.01** Interprets documents	**A-3.02** Selects systems, equipment and components	**A-3.03** Plans for installation, service and maintenance
Task A-4 Uses communication and mentoring techniques 4%	**A-4.01** Uses communication techniques	**A-4.02** Uses mentoring techniques	

B – Installs fuel piping and tubing systems — 9%

Task B-5 Selects and installs piping for fuel systems 52%	**B-5.01** Selects piping for fuel systems	**B-5.02** Prepares piping for fuel systems	**B-5.03** Installs piping for fuel systems
Task B-6 Selects and installs tubing for fuel systems 48%	**B-6.01** Selects tubing for fuel systems	**B-6.02** Prepares tubing for fuel systems	**B-6.03** Installs tubing for fuel systems

C – Installs venting and air supply systems — 13%

Task C-7 Selects and installs venting systems 39%	C-7.01 Selects materials for venting systems	C-7.02 Prepares materials for venting systems	C-7.03 Installs venting systems
Task C-8 Selects and installs air supply systems 35%	C-8.01 Selects materials for air supply systems	C-8.02 Prepares materials for air supply systems	C-8.03 Installs air supply systems
Task C-9 Selects and installs draft control systems 26%	C-9.01 Selects components for draft control systems	C-9.02 Installs components for draft control systems	

D – Installs controls and electrical systems — 19%

Task D-10 Selects and installs combustion control systems 23%	D-10.01 Selects combustion control components	D-10.02 Installs combustion control components
Task D-11 Selects and installs flame safeguard systems 25%	D-11.01 Selects flame safeguard components	D-11.02 Installs flame safeguard components
Task D-12 Selects and installs operating control systems 21%	D-12.01 Selects operating control components	D-12.02 Installs operating control components
Task D-13 Selects and installs electrical systems 19%	D-13.01 Selects electrical components	D-13.02 Installs electrical components
Task D-14 Selects and installs automation and instrumentation control systems 12%	D-14.01 Selects automation and instrumentation control components	D-14.02 Installs automation and instrumentation control components

E – Installs and converts fuel systems, appliances and ancillary equipment

13%

Task E-15 **Selects, installs and converts fuel systems, appliances and ancillary equipment** **45%**	**E-15.01** **Selects appliances and ancillary equipment**	**E-15.02** **Installs appliances and ancillary equipment**	**E-15.03** **Installs fuel conversion components**
Task E-16 **Selects and installs propane and natural gas storage, handling and dispensing systems** **35%**	**E-16.01** **Selects propane and natural gas storage, handling and dispensing systems**	**E-16.02** **Installs propane and natural gas storage, handling and dispensing systems**	
Task E-17 **Selects and installs other fuel storage, handling and dispensing systems** **20%**	**E-17.01** **Selects other fuel storage, handling and dispensing systems**	**E-17.02** **Installs other fuel storage, handling and dispensing systems**	

F – Tests and commissions fuel systems, appliances and ancillary equipment

23%

Task F-18 **Tests fuel delivery systems** **39%**	**F-18.01** **Selects testing equipment and procedures**	**F-18.02** **Tests fuel piping and tubing systems**	
Task F-19 **Commissions fuel systems, appliances and ancillary equipment** **61%**	**F-19.01** **Performs start-up procedures**	**F-19.02** **Performs testing, adjusting and balancing procedures**	**F-19.03** **Completes commissioning report and handover**

G – Services fuel systems, appliances and ancillary equipment 18%

Task G-20 **Maintains fuel systems, appliances and ancillary equipment** **42%**	**G-20.01** **Inspects system components and operation**	**G-20.02** **Performs maintenance activities**	
Task G-21 **Repairs fuel systems, appliances and ancillary equipment** **43%**	**G-21.01** **Diagnoses system components and operation**	**G-21.02** **Replaces components**	**G-21.03** **Verifies operation**
Task G-22 **Decommissions fuel systems, appliances and ancillary equipment** **15%**	**G-22.01** **Disconnects appliances and ancillary equipment**	**G-22.02** **Removes appliances and ancillary equipment**	