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In this document, the masculine gender is used without discrimination and solely for the sake of brevity.

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Table of contents

Table of contents	3
Introduction	4
Subclass definition	4
Module 1 – DEFINITIONS AND TYPES OF SYSTEMS	5
Module 2 – LEGISLATIVE, NORMATIVE AND REGULATORY FRAMEWORK	8
Module 3 – PLANS AND SPECIFICATIONS	11
Module 4 – STANDARDS AND EXECUTION OF WORK	13

Introduction

Successful candidates may act as guarantors for construction work included in subclass 10 - Contractor – Contractor – Solid fuel local heating systems.

This competency profile is based on the scope of application of the *Building Act*, as well as on Section (21-22-23 or 24) of the *Regulation respecting the professional qualification of contractors and owner-builders*.

Subclass definition

10 - Contractor – Solid fuel local heating systems

This subclass authorizes construction work that is not exclusively reserved for master pipe-mechanics or electrical contractors relating to solid fuel local heating systems, such as stoves and prefabricated fireplaces, and similar or related construction work.

Module 1 – DEFINITIONS AND TYPES OF SYSTEMS

Elements of competency covered in this module:

1. Define and explain concepts and terms related to solid fuel local heating systems
2. Describe the characteristics and operating principles of various solid fuel local heating systems



Module 1 – DEFINITIONS AND TYPES OF SYSTEMS

Elements of competency	Skills required
1. Define and explain concepts and terms related to solid fuel local heating systems	1.1. Define “local heating” and “solid fuel”
	1.2. Define “draft,” “smoke back,” “radiation,” “convection,” “combustion chamber,” “chimney capacity,” etc.
	1.3. Define “stove,” “prefabricated fireplace,” “range,” “insert,” “wood furnace”
	1.4. Define “prefabricated chimney,” “chimney connector,” “liner,” etc.
	1.5. Define concepts related to masonry fireplaces and chimneys: “lintel,” “throat,” “hearth,” etc.
	1.6. Define the concepts associated with installing a local heating system: air intake, chimney connector, load support, floor protector, damper, nozzle, sleeve, deflector, etc.
	1.7. Identify the units of measurement associated with the installation of solid fuel local heating systems (BTU, kJ, kW, etc.)
2. Describe the characteristics and operating principles of various solid fuel local heating systems	2.1. Name the solid fuels used in local heating systems (wood, pellets, anthracite, corn, etc.)
	2.2. Explain the factors that influence combustion (fuel, temperature, oxygen, humidity, etc.)
	2.3. Explain the principle of air circulation in a local heating system and its impact on system design
	2.4. Explain the impact of different locations on system operation, safety and comfort (negative pressure, pyrolysis, combustible materials, etc.)

Elements of competency	Skills required
	2.5. Describe the types of solid fuel local heating systems (stove, prefabricated fireplace, insert, range, etc.) (radiant, convection, mobile home, etc.)
	2.6. Describe the types of components (air intake, chimney connector, hot air duct, damper, radiation shield, etc.) of a solid fuel local heating system (performance, advantages, fields of application)
	2.7. Describe the types of chimneys and flues to which a solid fuel local heating system can be connected (masonry, prefabricated types, etc.)
	2.8. Explain the impact of climatic and environmental conditions (temperature, wind) on the installation and operation of prefabricated chimneys (creosote, draft, etc.)

Module 2 – LEGISLATIVE, NORMATIVE AND REGULATORY FRAMEWORK

Elements of competency covered in this module:

3. Situate solid fuel local heating system installation work in relation to the various regulations, codes and standards in force

Module 2 – LEGISLATIVE, NORMATIVE AND REGULATORY FRAMEWORK

Elements of competency	Skills required
3. Situate metal structural work in relation to the various codes and standards in force	3.1. Recognize the organizations that affix their certification marks to solid fuel local heating systems to ensure compliance (ULC, CSA, W-H)
	3.2. Identify testing and certification standards for solid fuel heating systems (<i>CAN/CSA-B366.1, CAN/ULC-S610, CAN/ULC-S628, CAN/ULC-S629</i>)
	3.3. Explain the mission of the U.S. Environmental Protection Agency (EPA) as it relates to local heating systems (requirements concerning the rate of emission of smoke into the atmosphere)
	3.4. Identify the scope of the standard applicable to the installation of solid fuel local heating systems (CAN/CSA- B365)
	3.5. Identify the scope of the various municipal codes applicable to the installation of solid fuel local heating systems (by-laws, building codes, fire codes)
	3.6. Recognize the scope of the <i>Québec Construction Code, Chapter I: Building</i> , and the <i>National Building Code of Canada: 1995 (amended) (NRC)</i> in relation to the installation of local heating systems
	3.7. Master the principles of cross-referencing and/or referencing other codes and standards from building codes
	3.8. Explain when registration with the <i>Commission de la construction du Québec</i>

Elements of competency	Skills required
	(CCQ) is required to install a solid fuel local heating system
	3.9. Recognize the scope of the work performed under their licence and that of others (master electricians, master pipe-mechanics, ventilation mechanics, etc.)

Module 3 – PLANS AND SPECIFICATIONS

Elements of competency covered in this module:

4. Read and interpret solid fuel local heating system components on plans and drawings



Module 3 – PLANS AND SPECIFICATIONS

Elements of competency	Skills required
4. Read and interpret solid fuel local heating system components on plans and drawings	4.1. Locate on a plan the various elements of a solid fuel local heating system
	4.2. Locate, read and interpret the main dimensions and annotations associated with solid fuel local heating systems
	4.3. Locate, read and interpret cross-sections and details associated with solid fuel local heating systems
	4.4. Read and interpret general notes and tables associated with solid fuel local heating systems
	4.5. Prepare the quantity survey ¹ (ducts, number of components, etc.)

¹ 2 Prepare the quantity survey: measure the structure and calculate the quantities of materials required.

Module 4 – STANDARDS AND EXECUTION OF WORK

Elements of competency covered in this module:

5. Plan and organize work in relation to solid fuel local heating systems
6. Provide the protection and clearances required for a solid fuel local heating system
7. Install a prefabricated fireplace, chimney and chimney connectors
8. Install a stove, chimney and chimney connectors
9. Install a fireplace insert and liner in a pre-existing chimney
10. Install a wood furnace or combination furnace (furnace or boiler)
11. Ensure the integrity of the building and the levelling of surfaces, partitions and walls
12. Complete the installation of solid fuel local heating systems
13. Ensure health and safety in connection with solid fuel local heating system installation work

Module 4 – STANDARDS AND EXECUTION OF WORK

Elements of competency	Skills required
5. Plan and organize work in relation to solid fuel local heating systems	5.1. Assess customer needs, installation feasibility and compliance with standards
	5.2. Propose an appropriate solid fuel local heating system
	5.3. Determine the logical order of execution of solid fuel local heating system installation work
	5.4. Ensure that the required authorizations and permits for work in relation to solid fuel local heating systems are obtained
	5.5. Identify constraints related to the work (structure, roofing, etc.)
	5.6. Order and receive materials required for the installation of a solid fuel local heating system
6. Provide the protection and clearances required for a solid fuel local heating system	6.1. Explain clearances and protective measures required for different materials (combustible, non-combustible)
	6.2. Explain clearance requirements for non-approved appliances (minimum distance, floor, wall, front clearance, height, etc.)
	6.3. Explain clearance requirements for approved appliances (minimum distance, floor, wall, front clearance, height, etc.)
	6.4. Explain clearance requirements for prefabricated chimneys
	6.5. Identify the reduction percentages permitted for different types of protection
	6.6. Identify the materials that can protect a floor and methods for their use
	6.7. Explain screen requirements and installation methods

Elements of competency	Skills required
	6.8. Explain clearance requirements for chimney connectors and for means of protection
	6.9. Explain the different methods of pipe protection methods (depending on the type of pipe, etc.)
7. Install a prefabricated fireplace, chimney and chimney connectors	7.1. Position the device taking into account the chimney connection and clearances
	7.2. Ensure that the rear wall is adequately covered or complies with clearance standards
	7.3. Install the fireplace in the appropriate location
	7.4. Drill the walls, ceilings and floors through which the chimney will pass, taking into account the required alignments, angles and dimensions
	7.5. Evaluate the fireplace's compatibility with an existing chimney if applicable
	7.6. Install the prefabricated chimney or liner (from the fireplace)
	7.7. Install outside air intake if applicable
	7.8. Install hot air ducts by gravity or suction if applicable
8. Install a stove, chimney and chimney connectors	8.1. Position the device taking into account the chimney connection and clearances
	8.2. Drill the walls, ceilings and floors through which the chimney will pass, taking into account the required alignments, angles and dimensions
	8.3. Assess the stove's compatibility with an existing chimney if applicable
	8.4. Install the prefabricated chimney or liner
	8.5. Connect the chimney to the device
	8.6. Install outside air intake if applicable

Elements of competency	Skills required
9. Install a fireplace insert and liner in a pre-existing chimney	9.1. Position the device taking into account the chimney connection and clearances
	9.2. Evaluate the insert's compatibility with an existing chimney if applicable
	9.3. Install the metal liner in a masonry or prefabricated chimney (from the top of the chimney)
	9.4. Connect the chimney to the device
	9.5. Place the insert into the masonry or prefabricated fireplace
10. Install a wood furnace or combination furnace (furnace or boiler)	10.1. Position the device taking into account the chimney connection and clearances
	10.2. Drill the walls, ceilings and floors through which the chimney will pass, taking into account the required alignments, angles and dimensions
	10.3. Evaluate the furnace's compatibility with an existing chimney if applicable
	10.4. Install prefabricated chimney or liner, as required
	10.5. Connect the chimney to the device
	10.6. Install outside air intake if applicable
11. Ensure the integrity of the building and the levelling of surfaces, partitions and walls	11.1. Explain the double reinforcement method used when sectioning part of a structure
	11.2. Explain the methods used to ensure that the building envelope is sealed
	11.3. Ensure levelling of surfaces, walls and fire separations and ensure that integrity of the structure is maintained
	11.4. Explain the concept of technical shafts and their scope of application in relation to local heating systems
	11.5. Ensure that standards-related requirements are met

Elements of competency	Skills required
12. Complete the installation of solid fuel local heating systems	12.1. Perform final tests (operation of dampers, mechanical checks, first ignition, etc.)
	12.2. Ensure that standards-related requirements are met
	12.3. Ensure finishing (install mantel and other accessories, finish fireplace facade, etc.)
13. Ensure health and safety in connection with solid fuel local heating system installation work	13.1. Identify the risks associated with installing and maintaining a solid fuel local heating system (working at heights, electricity in walls, dust, confined spaces, etc.)
	13.2. Explain the precautions to be taken when installing and maintaining a solid fuel local heating system (harness, mask, etc.)
	13.3. Identify manufacturers' additional requirements for the safe installation of solid fuel local heating systems