

TRADE PROFILE

Insulator

(Heat and Frost)



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RED SEAL

TRADE PROFILE

INSULATOR (HEAT AND FROST)



STRUCTURE OF THE OCCUPATIONAL STANDARD

To facilitate understanding of the occupation, this standard contains the following sections:

Description of the Insulator (Heat and Frost) 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 trade

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

A complete version of the occupational standard, which provides additional detail for the trade activities, skills and knowledge can be found at www.red-seal.ca.

DESCRIPTION OF THE INSULATOR (HEAT AND FROST) TRADE

“Insulator (Heat and Frost)” is this trade’s official Red Seal occupational title approved by the CCDA. This standard covers tasks performed by an insulator (heat and frost) whose occupational title has been identified by some provinces and territories of Canada under the following names:

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Heat and Frost Insulator						■							
Insulator					■								
Insulator (Heat and Frost)	■	■	■	■			■	■	■	■	■	■	■

Insulators (heat and frost) work with different kinds of insulating material to prevent or reduce the passage of heat, cold, vapour, moisture, sound or fire. They read and interpret drawings and specifications to determine insulation requirements, select the amount and type of insulation to be installed, and measure and cut insulating material to the required dimensions. They then apply, install, repair and maintain insulating material. Insulated surfaces may be finished with materials such as plastics, aluminum, galvanized steel and coated steel, stainless steel, canvas, mastic laminate or finishing cement. Insulators (heat and frost) also lay out and fabricate parts on-site, or remove or seal off old insulation.

Types of insulating materials that may be used include calcium silicate, ceramic fibre, elastomeric foam, nano-like technology, mineral fibre, fibreglass, polyurethane, polystyrene and cellular glass. They may be used for systems such as plumbing, air-handling, exhaust, heating, cooling and refrigeration, for piping equipment, pressure vessels and storage tanks, as well as for walls, floors and ceilings of buildings, industrial complexes and ships.

Removing old insulating material such as asbestos, ceramic fibres, lead and mould is also part of the trade. Special training and licenses may be required to deal with these types of materials. Spraying insulating materials and installing fireproofing and fire stop systems are also specialized parts of the trade.

Insulators (heat and frost) are employed by governments, construction companies, insulation contractors and industrial plants, or may also be self-employed. They work on residential, industrial, commercial and institutional projects. Their work schedules depend on the type of work they are doing, ranging from regular work weeks, to shift work or irregular work hours. Schedules may depend on the availability of contracts, or inconvenience or health risks to adjacent workers or the public.

Insulators (heat and frost) work with a number of hand tools and power tools. They use personal protective equipment to protect themselves from workplace hazards. Also, they frequently use scaffolds, aerial lifts and ladders to help them accomplish their tasks. They can work indoors or outdoors, often in extreme temperatures. They may perform some of their tasks in confined spaces. Depending on the location of work, they may be required to travel.

The ability to be focused and responsible is a vital part of insulators’ (heat and frost) work and safety. The work often requires the insulators (heat and frost) to spend most of the day on their feet, bending, kneeling, working at heights, climbing (scaffolds, ladders) and lifting. Insulators (heat and frost) must be able to use their body to brace large items and guide objects or materials into place. This requires them to have a good combination of motor co-ordination, and manual and finger dexterity.

This standard recognizes similarities or overlaps with the work of boilermakers, roofers, sheet metal workers, painters and carpenters.

With experience, insulators (heat and frost) act as mentors and trainers to apprentices in the trade. They can also move into positions such as maintenance, instructor, contractor, foreperson, superintendent or estimator.

INSULATOR (HEAT AND FROST)

TASK MATRIX

A - Performs routine occupational skills

Task A-1 Performs safety-related functions	A-1.01 Uses personal protective equipment (PPE) and safety equipment	A-1.02 Maintains safe work environment	
Task A-2 Uses and maintains tools and equipment	A-2.01 Uses tools and equipment	A-2.02 Uses access equipment	
Task A-3 Organizes work	A-3.01 Performs task scheduling	A-3.02 Organizes materials on site	
Task A-4 Uses communication and mentoring techniques	A-4.01 Uses communication techniques	A-4.02 Uses mentoring techniques	
Task A-5 Performs routine trade practices	A-5.01 Performs measurements and calculations	A-5.02 Interprets specifications and drawings	A-5.03 Prepares substrates

B - Performs industrial applications

<p>Task B-6 Prepares for installation of insulation in industrial applications</p>	<p>B-6.01 Selects materials for industrial applications</p>	<p>B-6.02 Performs layout for industrial applications</p>	
<p>Task B-7 Insulates piping and fittings</p>	<p>B-7.01 Installs insulation on piping, fittings and hangers</p>	<p>B-7.02 Applies vapour barrier on piping and fittings</p>	<p>B-7.03 Installs cladding, jacketing and finishes on piping and fittings</p>
<p>Task B-8 Insulates tanks, vessels and equipment</p>	<p>B-8.01 Installs insulation on tanks, vessels and equipment</p>	<p>B-8.02 Applies vapour barrier on tanks, vessels and equipment</p>	<p>B-8.03 Installs cladding, jacketing and finishes on tanks, vessels and equipment</p>

C - Performs commercial applications

<p>Task C-9 Prepares for installation of insulation in commercial applications</p>	<p>C-9.01 Selects materials for commercial applications</p>	<p>C-9.02 Performs layout for commercial applications</p>	
<p>Task C-10 Insulates plumbing and mechanical piping systems</p>	<p>C-10.01 Installs insulation on plumbing and mechanical piping systems</p>	<p>C-10.02 Applies vapour barrier on insulated plumbing and mechanical piping systems</p>	<p>C-10.03 Installs cladding, jacketing and finishes on insulated plumbing and mechanical piping systems</p>
<p>Task C-11 Insulates mechanical ducting</p>	<p>C-11.01 Installs insulation on mechanical ducting</p>	<p>C-11.02 Applies vapour barrier on insulated mechanical ducting</p>	<p>C-11.03 Installs cladding, jacketing and finishes on insulated mechanical ducting</p>
<p>Task C-12 Insulates mechanical equipment</p>	<p>C-12.01 Installs insulation on mechanical equipment</p>	<p>C-12.02 Applies vapour barrier on insulated mechanical equipment</p>	<p>C-12.03 Installs cladding, jacketing and finishes on insulated mechanical equipment</p>

D - Performs applications common to industrial and commercial systems

Task D-13 Installs fire stop systems	D-13.01 Identifies approved fire stop system	D-13.02 Applies fire stop materials to architectural, structural, mechanical and electrical components	
Task D-14 Insulates for soundproofing	D-14.01 Insulates piping for soundproofing	D-14.02 Insulates turbines, equipment and mechanical systems for soundproofing	D-14.03 Fabricates acoustic panels (Not Common Core)
	D-14.04 Installs acoustic panels to ceilings and walls (Not Common Core)		
Task D-15 Installs removable covers	D-15.01 Fabricates removable covers	D-15.02 Fastens removable covers	
Task D-16 Installs underground insulating systems	D-16.01 Installs pipe insulation to underground systems	D-16.02 Installs pour-in-place and spray-on insulation to underground systems	

E - Performs specialized applications

<p>Task E-17 Sprays sealers, coatings and spray-on insulation</p>	<p>E-17.01 Protects surrounding work area for spraying</p>	<p>E-17.02 Prepares material, equipment and substrate for spraying</p>	<p>E-17.03 Installs reinforcing material for spraying</p>
	<p>E-17.04 Applies spray-on insulation, coatings and sealers</p>		
<p>Task E-18 Installs fireproofing</p>	<p>E-18.01 Applies fireproofing to architectural, structural, mechanical and electrical components</p>	<p>E-18.02 Applies protective covering to fireproofing materials</p>	
<p>Task E-19 Installs insulation for refractory systems</p>	<p>E-19.01 Applies insulation to refractory systems</p>	<p>E-19.02 Installs reflective systems</p>	<p>E-19.03 Installs cladding, jacketing and finishes to refractory systems</p>
<p>Task E-20 Installs insulation for cryogenic systems</p>	<p>E-20.01 Applies insulation to cryogenic systems</p>	<p>E-20.02 Applies vapour barrier to insulated components of cryogenic systems</p>	<p>E-20.03 Installs cladding, jacketing and finishes to cryogenic systems</p>
<p>Task E-21 Insulates for marine applications (Not Common Core)</p>	<p>E-21.01 Insulates bulkheads, deckheads and hulls (Not Common Core)</p>	<p>E-21.02 Installs cladding, jacketing and finishes on marine applications (Not Common Core)</p>	

F - Performs asbestos , lead and mould abatement

<p>Task F-22 Prepares for asbestos abatement</p>	<p>F-22.01 Determines required personal protective equipment (PPE) for asbestos abatement</p>	<p>F-22.02 Retrieves sample of asbestos for testing</p>	<p>F-22.03 Determines scope of work</p>
	<p>F-22.04 Prepares site for removal and containment of asbestos</p>	<p>F-22.05 Builds temporary enclosure</p>	
<p>Task F-23 Performs asbestos removal procedures</p>	<p>F-23.01 Removes asbestos</p>	<p>F-23.02 Disposes of asbestos materials</p>	<p>F-23.03 Performs decontamination of area and equipment</p>
<p>Task F-24 Performs maintenance and repair</p>	<p>F-24.01 Encapsulates asbestos</p>	<p>F-24.02 Encloses asbestos</p>	
<p>Task F-25 Performs lead abatement and mould remediation</p>	<p>F-25.01 Performs lead abatement</p>	<p>F-25.02 Performs mould remediation</p>	