

Chart of Competency

Solar Thermal Hydronic Installer

Electricity Human Resources Canada is a non-profit organization supporting the human resources needs of the Canadian electricity sector.

Our Vision

Keeping the lights on in Canada by preparing and empowering a world-class workforce for the entire electricity industry.

Our Mission

Working to strengthen the ability of the Canadian electricity industry in meeting current and future needs for their workforce—one that is safety-focused, highly skilled, diverse and productive.

Our Values

We are a values-driven organization, committed to the improvement of our sector, the growth of Canada's economy, and the stability of our power grid. Our core values are:

Collaboration

Working with all stakeholders in Canada's electricity sector for our mutual benefit.

Trust

Forging relationships and products built on unwavering integrity.

Innovation

Leading the industry to be future-ready.

Chart of Competency: Solar Thermal Hydronic Installer

This Chart outlines the competencies (also known as skills and knowledge) that are performed by Solar Thermal Hydronic Installers.

Key: Overlap with trades – Tasks included in trade national occupational analyses (i.e. Industrial and Construction Electricians) that are also performed or sub-contracted by Solar Thermal Hydronic Installers

Occupational Definition:

Solar Thermal Hydronic Installers install customized systems that collect radiant heat from the sun at low, medium, or high temperatures for a variety of heating purposes in residential, commercial or light industrial settings. The solar thermal collectors may be mounted on the ground or built on the roof or walls of buildings. The heat is transferred from the collectors throughout the system using a heat transfer fluid.

Major Category	Competency Area	Competency Unit					
Construction and Installation	Plan Installation	Organize materials and equipment for installation	Coordinate installation activities	Examine site conditions			
	Perform Foundational Electrical Tasks	Fabricate support structures	Install brackets, hangers and fasteners	Install conductors and cables	Install conduit, tubings and fittings	Install raceways	Install boxes and enclosures
	Install Solar Thermal System	Install solar collector mounting system	Install solar collectors	Install piping	Install mechanical and plumbing equipment, and solar storage tanks	Install controls, sensor wires and sensors	Charge solar thermal hydronic system
		Install insulation					
	Install Control Systems	Install discrete input/output (I/O) devices	Install analog input/output (I/O) devices	Install automated control systems	Program automated control systems		
	Install Wiring Systems	Install HVAC controls	Install cathodic protection systems				
	Complete Installation Process	Troubleshoot installation issues	Install operation and identification tags				
Commission Equipment and Systems	Verify equipment/system operation and functionality	Document equipment/system performance	Perform site cleanup	Demonstrate system to client/end-user			
Safety	Maintain a Safe Working Environment	Follow safe work practices	Use Personal Protective Equipment (PPE)	Participate in safety meetings and emergency drills	Isolate component, equipment or system	Perform lock-out tag-out procedures	Handle, transport and store hazardous materials
		Use fall arrest equipment	Work in confined spaces				
	Maintain a Sustainable Environment	Follow sustainable work practices					
Respond to Emergencies	Respond to chemical spills and leaks	Respond to non-electrical emergencies	Participate in high-angle rescue	Participate in incident and accident investigations			
Security	Follow Security Practices	Follow security practices for physical work environment	Follow cybersecurity procedures				
Organizational Policies and Procedures	Follow Organizational Policies and Procedures	Follow organizational policies and procedures					
Information/Record Management	Complete Information/Record Management Tasks	Maintain technical information and data					
Information and Communication Technology Foundations	Use Digital Technology	Use communication applications	Use common software applications	Use navigation and mapping applications	Use digital mobile radios		
	Use Organization's ICT System	Use organization's ICT system					
Foundational Trade Skills	Perform Routine Trade Tasks	Use hand and power tools	Use electrical measuring and testing equipment	Use access equipment and work platforms	Operate vehicles and motorized equipment	Lubricate equipment and components	Assist with rigging, hoisting/lifting and moving tasks
Personal Competencies	Demonstrate Professionalism	Work as member of a team	Develop professionally	Demonstrate professional and ethical conduct	Mentor/coach others	Manage stress	Manage time
	Communicate Effectively	Use active listening skills	Use speaking skills	Use hand signals	Use writing skills	Negotiate with internal and external stakeholders	Exchange information with internal and external stakeholders

National Occupational Standards (NOS)

NOS are voluntary guidelines that have been developed to provide businesses, educators, trainers, and job seekers with practical guidance.

How are NOS used?

Employers, employees, and educational institutions can put NOS to a wide variety of uses supporting effective workforce planning:

- Support personnel certification or accreditation programs
- Inform curricula for colleges and apprenticeships.
- Assist recruitment by informing job descriptions and providing a benchmark for employee appraisals.
- Identify career paths in order to promote employee retention.
- Help employers evaluate and determined the competencies of potential employees, including Internationally Trained Workers (ITWs).

Electricity Human Resources Canada has developed National Occupational Standards for a variety of occupations.

Visit electricityhr.ca for more information.