

Construction Electrician

On-the-Job Checklist



	Level 1	Page 1/2
Red Seal Tasks	On-The-Job Duties	Completed
Performs safety-related functions	Identify, select & inspect PPE equipment, such as fall protection, eye protection & hearing protection	☐
	Review MSDS to identify storage & safe handling requirements for common chemicals	☐
	Participate in & understand the principles of LOTO procedures & regulations	☐
Uses tools & equipment	Operate, maintain & store hand & portable power tools, such as drills, saws, screwdrivers & pliers	☐
	Select & set up a ladder to access work area according to site requirements	☐
	Utilize a tagline to prevent a load from spinning during a lift	☐
Organizes work	Understand the types of drawings & where to locate the symbol legend	☐
	Verify the content & condition of a material delivery	☐
	Communicate with other trades to organize area access & coordinate schedules	☐
	Set up flagging & tagging around the work area to restrict access to unauthorized personnel	☐
	Complete a job hazard risk assessment	☐
Fabricates & installs support components	Fabricate & install cable tray supports	☐
	Install drop-in anchors to mount a transformer or motor	☐
	Install independent support for a luminaire that is too heavy to be supported by the device box	☐
Commissions and decommissions electrical systems	Verify a system is installed per site drawings prior to energization	☐
	Verify de-energization of a system using a multimeter	☐
Uses communication & mentoring techniques	Demonstrate active listening practices by attending & participating in safety meetings	☐
Installs, services & maintains bonding & grounding & ground-fault protection & detection systems	Install bonding jumpers to interior metallic piping	☐

All work performed in this checklist is to be done under the supervision and guidance of a certified journeyperson

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	Level 1	Page 2/2
Red Seal Tasks	On-The-Job Duties	Completed
Installs, services & maintains consumer/supply services & metering equipment	Assist journeyperson with installation of residential service	☐
	Install & connect a ground rod or ground plate for a residential service	☐
Installs, services & maintains power distribution equipment	Interpret single line diagrams to identify possible sources of energy & isolation points	☐
Installs, services & maintains protection devices	Install & terminate a disconnect for system isolation	☐
	Install & test a GFCI plug to protect downstream loads	☐
	Install & terminate breakers in a de-energized panel with the assistance of a journeyperson	☐
Installs, services & maintains raceways, conductors, cables and enclosures	Understand the applications & limitations of various conductors/cables	☐
	Install metallic & non-metallic conduit raceways	☐
	Install & bond ladder cable tray as per manufacturer specifications	☐
	Install non-metallic & metallic device boxes in a wood framed structure as per CEC requirements	☐
	Expose & repair damaged underground PVC conduit	☐
Installs, services & maintains branch circuitry & devices	Assemble & install various light fixtures	☐
	Install & terminate a 3-way switch	☐
	Install a sensor to control a light such as a photocell or a timer	☐
	Prepare the base of a pole light for installation	☐
	Verify receptacle voltage & polarity using a multimeter	☐
Installs, services & maintains communication systems	Terminate CAT-rated cables as per manufacturer's specification	☐
	Install data/phone jacks using a punch down tool	☐
	Discuss the principles & limitations of nurse call system with the journeyperson	☐

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	Level 2	Page 1/2
Red Seal Tasks	On-The-Job Duties	Completed
Installs, services & maintains bonding & grounding, & ground fault protection & detection systems	Complete interconnection between various grounding components	☐
	Replace a regular breaker with a GFCI breaker in a residential panel	☐
	Install a surge suppression device in a residential panel	☐
Installs, services & maintains power generation & conversion systems	Assist journeyman with installation of a battery charging/maintenance system	☐
	Perform battery maintenance	☐
Installs, services & maintains renewable energy generating & storage systems	Assemble racks, move ballast & attach solar panels to structure	☐
	Identify & replace damaged solar cabling	☐
Installs, services & maintains transformers	Install & test a class 2 doorbell circuit	☐
	Install a low-voltage driver for undercounter/low-voltage lighting	☐
Installs, services & maintains raceways, conductors, cables & enclosures	Set up & use a cable tugger to pull feeder cables to location	☐
	Install raintight liquid flex conduit	☐
	Install, bond & pull cables in EMT piping	☐
	Determine switch & plug box location according to site plans or customer instruction	☐
	Use a circuit tracer to identify an unlabeled breaker	☐
Installs, services & maintains branch circuitry & devices	Install pot lights according to client or site requirements	☐
	Install automated lighting controls, such as photocells & occupancy sensors	☐
	Install a low-voltage lighting circuit	☐
	Test the operation of a photocell controlling yard or lot lights	☐
	Change ballasts on a florescent lighting system	☐
Installs, services & maintains cathodic protection systems	Understand the principles & operation of a cathodic protection system	☐
	Understand the purpose of a sacrificial anode in a cathodic protection system	☐

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	Level 2	Page 2/2
Red Seal Tasks	On-The-Job Duties	Completed
Installs, services & maintains exit & emergency lighting systems	Install & terminate an emergency exit light	☐
	Test & replace the battery pack in an emergency exit light	☐
Installs, services & maintains heating, ventilating & air-conditioning (HVAC) systems	Connect replacement furnace to power source	☐
	Replace a mercury-based t-stat with a smart thermostat	☐
	Test & replace heating system control components	☐
Installs, services & maintains electric heating systems	Install a 240 V baseboard heater	☐
	Install a line voltage thermostat for a baseboard heater	☐
	Review furnace wiring diagram to confirm order of operation	☐
Installs, services & maintains motor starters & controls	Install a motor starter in a motor control center	☐
	Test & replace overloads in a motor starter	☐
	Install & terminate a stop/start station	☐
	Test the function of motor e-stop	☐
Installs, services & maintains motors	Understand the different operating characteristics of DC motors	☐
	Remove dust & carbon build-up from the motor frame/fan shroud	☐

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On-the-Job Checklist



	Level 3	Page 1/2
Red Seal Tasks	On-The-Job Duties	Completed
Installs, services & maintains consumer/supply services & metering equipment	Install a 3-phase CT/PT-based metering cabinet	☐
	Record voltage & current as-found readings of a 3-phase service panel	☐
Installs, services & maintains power distribution equipment	Repair a cable damaged by excavation or contact	☐
Installs, services & maintains bonding & grounding, & ground fault protection & detection systems	Size & install bonding system for 3 phase distribution	☐
	Install a 3-phase GFCI breaker	☐
	Install & terminate a lightning protection system	☐
Installs, services & maintains power generation & conversion systems	Assist journeyperson in the installation of a back-up generator system	☐
	Assist journeyperson in transferring a system from generator to utility power	☐
Installs, services & maintains transformers	Install & connect a dry-type transformer	☐
	Understand the principles of high voltage termination	☐
	Change the tap on a transformer to adjust voltage output	☐
Installs, services & maintains branch circuitry & devices	Assist journeyperson with planning a lighting circuit layout	☐
	Determine junction box size based on number of wires & device type	☐
	Install & test a timer for outdoor lighting	☐
	Test & replace a photocell	☐
	Troubleshoot a flickering light to determine the cause	☐
Installs, services & maintains motor starters & controls	Install a reversing motor starter	☐
	Verify & document a motor starter's overload settings & operation	☐
	Add a second stop/start station to an existing system	☐
	Replace contactor coil in a motor starter	☐

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	Level 3	Page 2/2
Red Seal Tasks	On-The-Job Duties	Completed
Installs, services & maintains drives	Assist journeyperson with the installation of an AC drive	☐
	Verify drive inputs & confirm expected output voltage of an AC drive	☐
	Replace an undersized DC drive control	☐
	Perform DC drive preventive maintenance	☐
Installs, services & maintains motors	Modify the connection of an AC motor from Wye to Delta	☐
	Replace a thermal overload on a single-phase motor	☐
	Bump a 3-phase motor to verify rotation	☐
	Verify motor condition by comparing the resistance of each winding using a multimeter	☐
	Change the rotation of a DC motor	☐
	Replace damaged or worn DC motor components	☐

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	Level 4	Page 1/2
Red Seal Tasks	On-The-Job Duties	Completed
Uses communication & mentoring techniques	Demonstrate a procedure for a coworker	☐
Installs, services & maintains power conditioning, uninterruptible power supply (UPS) & surge suppression systems	Install & terminate a UPS bank	☐
	Verify the de-energized state of capacitor bank prior to service	☐
Installs, services & maintains bonding & grounding, & ground fault protection & detection systems	Verify resistance of ground grid is within site specifications	☐
Installs, services & maintains renewable energy generating & storage systems	Install a DC to AC inverter/converter	☐
	Verify de-energization of an inverter prior to service	☐
Installs, services & maintains high-voltage systems	Install a stress cone	☐
	Verify cable insulation integrity prior to installation	☐
	Verify zero energy state of equipment prior to commencing work	☐
Installs, services & maintains branch circuitry & devices	Understand the dangers & limitations of airport runway lights	☐
	Install a timer-relay to control a lighting/signal circuit	☐
Installs, services & maintains motors	Verify that a motor's characteristics match site & system requirements	☐
	Replace a defective capacitor on a capacitor start motor	☐
	Choose connection type based upon system load requirements	☐
	Identify the cause of increasing motor temperature during normal operation	☐
	Install deadman switch for a bench grinder or hydraulic press	☐
	Performs thermal imaging of motor & connections to identify possible problems	☐

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On-the-Job Checklist



	Level 4	Page 2/2
Red Seal Tasks	On-The-Job Duties	Completed
Installs, programs, services & maintains automated control systems	Assist journeyperson in installation of PLC or DCS	☐
	Test & replace a PLC power supply	☐
	Assist journeyperson with addressing & programming of PLC system	☐
Installs, services & maintains signalling systems	Determine if the fire alarm system is supervised or non-supervised	☐
	Test & replace damaged fire alarm components	☐
	Install magnetic lock &/or card reader systems	☐
	Maintain security systems by replacing damaged cables & adjusting cameras	☐
Installs, services & maintains communication systems	Terminate & test voice/data cables	☐
	Install PA system components such as speakers, amplifies & microphones	☐
	Install an annunciator or nurse call station	☐
	Verify communication between a remote panel & the component systems	☐
Installs, services & maintains integrated control systems	Assist journeyperson with planning the installation of a building energy management system	☐
	Install automation components such as duct dampers, valves, contactors or other sensors	☐
	Identify effects of service work on related systems	☐

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Information Regarding the Checklist

Saskatchewan Apprenticeship and Trade Certification Commission's (SATCCs) On-The-Job Checklist provides a complete list of trade-specific Red Seal tasks for apprentices to complete under the supervision of a journeyman. This work should be completed prior to attending the technical training level under which the duties are listed (e.g. Level 1 completed prior to attending Level 1 technical training).

Completing this checklist will ensure that apprentices are exposed to the full scope of a particular Red Seal trade throughout their apprenticeship program. It will also help prepare apprentices for each level of technical training by performing work on-the-job relating specifically to topics covered later on. The trade-specific tasks listed have been reviewed by certified journeymen in Saskatchewan for their accuracy and have been set to an appropriate skill level.

An apprentice spends approximately 85% of their apprenticeship term training on-the-job. It is the both the apprentice and the employer's or journeyman's responsibility to supervise an apprentice's practical skills development during their program.

To promote transparency and consistency, this document aligns with the 2021 Construction Electrician Red Seal Occupational Standard (Employment and Social Development Canada).

A complete version of the Occupational Standard can be found at www.red-seal.ca

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