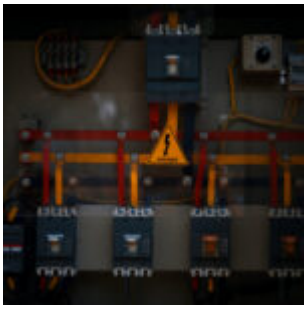
General Electrical Safety and PPE Requirements



Workers must use appropriate PPE when working with or near energized electrical equipment.

> *Electrical shock and burns due to arc flash are among the most commonly found workplace hazards. Work on or near energized lines and sources should typically be done only by specifically trained 'electrical workers' who meet technical qualifications set out in the Canadian Electrical Code or related provincial laws. Workers exposed to electrical hazards also must wear appropriate personal protective equipment, including hardhats and safety footwear designed to protect against shock. Here's a rundown of the electrical safety PPE rules in each part of Canada.*

OHS PPE Requirements for Electrical Work

Federal

(1) All testing or work performed on electrical equipment with voltage above 5,200 V between any two conductors or in excess of 3,000 V between any conductor and ground must be done by a qualified person using insulated protection equipment and tools protecting against injury during the performance of the

work, and the qualified person must be instructed and trained in the use of that insulated protection equipment and tools (COHS Regs., Sec. 8.4); and (2) If there's a risk of foot injury or electric shock in a work place, employer must ensure that protective footwear that meets CSA Z195 is worn, which may have to also be slip-resistant if slip hazards exist (*COHS Regs*., Sec. 12.11)

Alberta

(1) Worker must not perform electric arc welding if it's reasonably possible for another worker to be exposed to radiation from the arc unless the other worker is wearing suitable PPE to protect the eyes or is protected by a screen; (2) If workers may be exposed to a flash fire or electrical equipment flashover, employer must ensure they wear PPE that includes flame resistant outerwear and uses other personal protective equipment appropriate to the hazard; and (3) If a hazard assessment finds that protective footwear must have electrical protection, employer must ensure the worker wears protective footwear that meets either CSA Z195'02, or ASTM F2413'05, Specification for Performance Requirements for Protective Footwear (*OHS Code*, Secs. 232-233)

British Columbia

(1) Worker that may be exposed to an electrical hazard, required safety headgear must have an appropriate non-conductive rating (OHS Regs., Sec. 8.11(3)); (2) Appropriate safety footwear must account for electric shock and if it's determined that footwear must have dielectric protection, it must meet: (a) CSA-Z195-M92 (b) ANSI Z41-1991, (c) British Safety Institution BS EN 345:1993, or (d) British Safety Institution BS EN 346:1993 (OHS Regs., Sec. 8.22); and (3) If it's not practicable to completely isolate high voltage electrical equipment, appropriate electrical protective equipment, including rubber blankets, hoses, hoods, gloves and

live line tools must be selected, used, stored, tested, and maintained in accordance with a standard acceptable to the Board (*OHS Regs.*, Sec. 9.16(2)(c))

Manitoba

(1) At a workplace that's not a construction project site, employer **must provide** worker with protective headwear appropriate for the risk that meets CSA Z94.1-15 or ANSI Z89.1-2003, if there's risk of injury from contact with an exposed energized electrical conductor (*WSH Regs.*, Sec. 6.10(1)(b)); (2) Worker at a construction project site **must wear** protective headwear that meets CSA Z94.1-05 (*WSH Regs.*, Sec. 6.11(1)); (3) Employer **must provide** a worker with appropriate gloves or mitts and sleeves if there's risk of injury from contact with an exposed energized electrical conductor (*WSH Regs.*, Sec. 6.14(2)]); (4) If it's not reasonably practicable to de-energize electrical equipment before electrical work is done, employer must ensure that no electrical worker begins work on energized electrical equipment until the worker wears all PPE appropriate for the work to be done *WSH Regs.*, Sec. 38.14(2)(f))

New Brunswick

(1) A code of practice for work on or near energized exposed parts of electrical equipment must be in writing and contain a description of the PPE and other protective equipment to be used (*OHS Gen. Reg.,* Sec. 287.41)(1)(f)); (2) Employer must use CSA Standard Z462-15, 'Workplace electrical safety' or standard offering equivalent or better protection as a guide for the selection of PPE and other protective equipment that employees are required to use (*OHS Gen. Reg.,* Sec. 287.41)(2)); (3) Employer must ensure that employees don't work on an energized electrical utility line or utility line equipment or closer to an energized electrical utility line or utility line equipment than the applicable distance set out in

subsection 289(1) unless they use rubber gloves, shields, insulated objects or other necessary protective equipment (*OHS Gen. Reg.,* Sec. 288); and (4) An employee who works closer to an energized electrical utility line or utility line equipment than the distances specified in subsection 289(1) must use the protective equipment referred to in section 288 (*OHS Gen. Reg.,* Sec. 372(2))

Newfoundland

(1) If it's determined that safety protective footwear must have dielectric protection, the footwear must meet CSA Z195 (*OHS Regs*., Sec. 80(3)); (2) Employer must ensure that a worker that may be exposed to an electrical equipment flashover wears flame resistant outerwear and uses other protective equipment appropriate to the hazard (Sec. 82(1)); (3) If it's not practicable to completely disconnect low voltage electrical equipment, work must be performed in accordance with an electrical safety program in accordance with a standard acceptable to the minister that requires the use of appropriate electrical protective equipment, including flame retardant clothing, voltage-related rubber gloves and cover up and other necessary live line tools (Sec. 484(2)(b)); and (4) When it's not practicable to completely isolate high voltage electrical equipment, employer must conduct a formal hazard assessment and develop an electrical safety program that includes provision of appropriate electrical protective equipment, including rubber blankets, hoses, hoods, gloves and live line tools selected, used, stored, tested and maintained in accordance with a standard acceptable to the minister (Sec. 490(2)(c))

Nova Scotia

(1) Employer must provide person required to work on an energized electrical installation and person must use all protective equipment and devices: (a) necessary to work safely

on an energized electrical installation; and (b) that comply with the latest version of the following applicable standard: (i) ASTM D120, 'Standard Specification for Rubber Insulating Gloves'; (ii) ASTM D1051, 'Standard Specification for Rubber Insulating Sleeves'; (iii) ASTM D1048, 'Standard Specification for Rubber Insulating Blankets'; (iv) ASTM D1050, 'Standard Specification for Rubber Insulating Line Hose'; (v) ASTM D1049, 'Standard Specification for Rubber Insulating Covers'; (vi) ASTM D 178, 'Standard Specification for Rubber Insulating Matting'; (vii) ASTM F696, 'Standard Specification for Leather Protectors for Rubber Insulating Gloves and Mittens'; and (viii) ASTM F711, 'Standard Specification for Fiberglass-Reinforced Plastic (FRP) Rod and Tube Used in Live Line Tools'; (2) Employer must ensure that a person who handles an energized power line or power line equipment rated at greater than 15 000 v to ground uses hot line tools and required PPE; (3) Person may use rubber gloves instead of hot line tools to handle energized power lines or power line equipment rated at greater than 750 v phase to phase, where a written work procedure has been adopted as a code of practice by order of the Director for use in such circumstances (*Occ. Safety Gen. Regs.*, Secs. 123-124)

Ontario

If it's not practical to disconnect electrical installations, equipment or conductors from the power supply before working on, or near, live exposed parts of the installations, equipment or conductors, the worker must use rubber gloves, mats, shields and other protective equipment and procedures adequate to ensure protection from electrical shock and burns while performing the work (*OHS Ind. Ests. Reg*., Sec. 42.1(2))

Prince Edward Island

(1) When working on energized electrical conductors or equipment operating at a potential greater than 120 v nominal

up to and including 5,000 v phase to phase, employer must provide and worker must use rubber gloves having a minimum rating of 10,000 v, shields and other necessary safety equipment (*OHS Regs*., Sec. 36.5(2));(2) When working on energized electrical conductors or equipment in excess above 5,000 v, and less than 15,000 v phase to phase, employer must provide and worker must wear rubber gloves having a minimum rating of 20,000 v or use adequate hot line tools (Sec. 36.5(3)); (3) Rubber gloves must be tested at least twice a year and replaced as required (Sec. 36.5(4)); (4) Rubber gloves must be worn at all times while working on energized circuits or while within the primary zone on any poles or structure carrying over 120 v phase to ground to 25000 phase to phase circuits (Sec. 36.5(5)); (5) Employer must ensure that workers don't work in or around any place or structure in proximity to energized electrical conductors or equipment unless: (a) adequate protective guards are provided; or (b) the workers are wearing adequate protective equipment (Sec. 36.10); and (6) Employer must ensure that when setting or removing poles, light standards or any similar object between energized electrical conductors exceeding 600 v, workers wear adequate rubber gloves (Sec. 36.17(a))

Québec

Workers exposed to foot injuries from electric shock must wear protective shoes that meet CSA Z195-14 (*OHS Regs*., Sec. 344(2))

Saskatchewan

(1) Employer or contractor must provide, and require worker that may contact an exposed energized electrical conductor to use, approved industrial protective headwear of adequate dielectric strength to protect the worker (*OHS Regs*., Sec. 7-6(3)); (2) Employer or contractor must provide and require an electrical worker at risk of injury to the skin from arc

flash to use arc flash protection that meets an approved standard (Sec. 7-9(3)); 3. If a worker may contact an exposed energized high voltage electrical conductor, employer or contractor must provide, and require the worker to use, approved rubber insulating gloves and mitts and approved rubber insulating sleeves (Sec. 7-12(2)); and (4) If a qualified electrical worker works closer to an exposed energized electrical conductor than the minimum distance set out in column 2 of Table 19 of the Appendix, employer or contractor must ensure that the qualified electrical worker uses PPE that meets the requirements of Part 7 (Sec. 30-16(8)(a)(iii))

Northwest Territories & Nunavut

(1) Employer must provide, and require worker that may contact an exposed energized electrical conductor to use, approved industrial protective headwear of adequate dielectric strength to protect the worker (*OHS Regs*., Sec. 94(2)); and (2) Employer must provide and require an electrical worker at risk of injury to the skin from arc flash to use arc flash protection that meets an approved standard (Sec. 98(3)); (3) If a worker may contact an exposed energized high voltage electrical conductor, employer must provide, and require the worker to use, approved rubber insulating gloves and mitts and approved rubber insulating sleeves (Sec. 101(2)); and (4) If a qualified electrical worker works closer to an exposed energized electrical conductor than the minimum distance set out in column 2 of Schedule Y of the Appendix, employer must ensure that the qualified electrical worker uses PPE that meets the requirements of Part 7 (Sec. 460(8)(a)(iii))

Yukon

(1) Worker must be required to wear effective and appropriate footwear and ensure that it meets: i. CSA Z195-02; ii. ANSI Z41; or iii. other similar standards acceptable to the board

(*WSCA Regs.,* Sec. 1.13); (2) Appropriate skin, hand, foot or body protection shall be provided if a worker may be exposed to a substance or a condition that may puncture, abrade, burn, corrode, electrically shock or otherwise adversely affect the skin or be absorbed through it (Sec. 1.14); (3) Worker must ensure that fire resistant clothing appropriate to the risk is worn where there may be exposure to a flash fire, molten metal, welding and burning or similar hot work hazards (Sec. 1.15); (4) Safety headwear must be provided to and worn by workers and have a non-conductive rating where workers may be exposed to electrical hazards (Sec. 1.18(a)); and (5) Worker must be required to wear properly fitting safety eyewear, goggles, face shields, side shields, glasses or other such protective items provided by the employer and appropriate to the workplace conditions where the worker is exposed to excessive light, heat rays, electric arcs or similar hazards, or is working on or testing energized electrical equipment (Sec. 1.19)