

19.5 Electrical

Latest Revision: Oct 2011

1.0 Purpose

- .01 The purpose of this document is to inform contractors and NPSCDSB staff of safe electrical procedures and the requirements for adherence to the following document with regards to electrical wiring, hazards, repairs and the purchase of electrical equipment.

2.0 General

- .01 All electrical equipment shall be used for the purpose and in the manner for which it has been designed. All users of electrical items are to read all instructions and be aware of all important safeguards before using electrical equipment, including appliances, power hand tools, etc.
- .02 All electrical equipment shall adhere to applicable standards, bearing certification marks of the Ontario Electrical Safety Code. There are other approved certification designations which are not as common, the Electrical Safety Authority can provide information where required.
- .03 Electrical items and/or equipment purchased by outside groups and donated to schools for use by staff and students shall meet the same code requirements.

3.0 Inspections

- .01 All Nipissing-Parry Sound Catholic District School Board (NPSCDSB) facilities will be subject to an "Annual Electrical Inspection" under conditions outlined in the Ontario Electrical Safety Code.
- .02 A "Log Book" is located in each school. All Custodians, Maintenance Staff and Contractors performing electrical work must record the extent and location of the work being performed. Contractors shall include their company name. Any electrical work performed shall be recorded in on an Electrical Maintenance Form (Appendix A).
- .03 The Custodian will accompany the inspector and provide them access to all areas as requested.
- .04 The Inspector will provide the Board Office a complete list of deficiencies recorded on a Continuous Safety Service Site Visit Report, (Appendix B). Compliance with all deficiencies will be the responsibility of the Board Office within the time lines determined by the Inspector.

4.0 Standards

- .01 NPSCDSB requires that all electrical equipment for use by contractors, staff and students comply with the Electrical Safety Code.
- .02 Electrical equipment that is the personal property of contractors, staff and students shall comply with Board standards when used on Board property.

19.5 Electrical

Latest Revision: Oct 2011

5.0 Electrical Wiring







- .01 All electrical wiring shall be in accordance with the Electrical Safety Code.
- .02 Alterations or modifications to the existing wiring and installation of new wiring, shall be installed by a qualified licensed Contractor and inspected by the Electrical Safety Authority (ESA) with a clearance certificate upon completion.

6.0 Grounding

- .01 Electrical equipment shall be grounded in accordance with the Electrical Safety Code.
- .02 No alterations or modifications shall be made to the 3 prong connectors of electrical equipment manufactured with a 3 wire "U" ground plug.
- .03 All three wire, cord connected equipment shall be inspected for ground pin integrity prior to each use, and no equipment shall be used where the ground pin has been removed.
- .04 The electrical safety code will accept tools and appliances that are marked with the words "Double Insulated" or the symbol of a square within a square.
- .05 The tools and appliances identified as "Double Insulated" will not have a separate ground pin; they are manufactured with a 2 prong plug.

6.0 Equipment and Other Electrical Devices

- .01 All types of equipment shall be plugged into approved type receptacles.
- .02 Hard wiring is not permitted.
- .03 All new stationary shop equipment shall be secured to bench or floor and shall be equipped with magnetic starters providing low voltage protection.
- .04 The Electrical Safety Code states that every piece of electrical equipment that is sold, displayed, or connected to a source of power in Ontario must be approved. Two of the most common authorities are:

The Canadian Standards Association	The Underwriters' Laboratory (a special certificate is used to meet Canadian Standards)
	
	
	

19.5 Electrical

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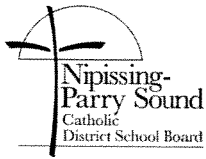
- .05 If equipment is used without accreditation an inspection by the Electrical Safety Authority or equivalent approved organization must be completed before the equipment is used.

7.0 Extension Cords

- .01 The "Electrical Safety Code" and "Ontario's Fire Marshall's Act" do not permit the use of extension cords as a substitute for permanent wiring. Flexible cord (extension cords) shall not be used as a substitute for the fixed wiring of structures and shall not be permanently secured to any structural member, or run through holes in walls, ceilings or floors; or run through doorways, windows or similar openings.
- .02 Extension cords may be used for temporary short term hook up only.
- .03 If additional receptacles are required to operate instructional or other equipment such installations must be requested through the Plant Department in accordance with Ontario Electrical Code requirements.
- .04 Extension cords must be of the Canadian Standard Association (CSA) approved 3 wire (separate ground) type, capable to safely carry the equipment's current, 2 wire cords are not permitted.

8.0 Lockout/Tagout

- .01 All electrical equipment worked on is to be de-energized before work is performed on or near by live parts of the equipment.
- .02 The switch to be used to de-energize the circuit must be identified.
- .03 Use safe work practices in operating the switch, e.g. clear work area around the switch, use left hand to operate, stand to the side not in front, look away as you operate a switch.
- .04 Conduct testing to ensure that all phases have been de-energized.
- .05 Check for voltage line-to-ground first to ensure that the return path is established and that the tester is operating properly.
- .06 Test for voltage at the point of working, in case of a second source or power, or if the switch was wired incorrectly.
- .07 The equipment must stay de-energized while workers are working on the equipment. This is done so by physically placing a "Lock" on the equipment.



19.5 Electrical

Latest Revision: Oct 2011

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- .08 Locks must be of substantial construction, to ensure that specialized equipment such as bolt cutters or hacksaws must be used to remove a lock if the key is not available.

 - .09 For more information on Lockout refer to **Lockout/Tagout Procedure**