

**PART 1**      **GENERAL**

**1.1**            **RELATED SECTIONS**

- .1      Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2      Section 26 05 00 - Common Work Results - Electrical.
- .3      Section 31 23 10 - Excavating, Trenching and Backfilling.

**1.2**            **REFERENCES**

- .1      Canadian Standards Association, (CSA)
- .2      Insulated Cable Departmental representatives Association, Inc. (ICEA)

**PART 2**      **PRODUCTS**

**PART 3**      **EXECUTION**

**3.1**            **CABLE INSTALLATION IN DUCTS**

- .1      Install cables as indicated in ducts.
  - .1      Do not pull spliced cables inside ducts.
- .2      Install multiple cables in duct simultaneously.
- .3      Use CSA approved lubricants of type compatible with cable jacket to reduce pulling tension.
- .4      To facilitate matching of colour coded multiconductor control cables reel off in same direction during installation.
- .5      Before pulling cable into ducts and until cables are properly terminated, seal ends of lead covered cables with wiping solder; seal ends of non-leaded cables with moisture seal tape.
- .6      After installation of cables, seal duct ends with duct sealing compound.

**3.2**            **FIELD QUALITY CONTROL**

- .1      Perform tests in accordance with Section 26 05 00 - Common Work Results – Electrical.
- .2      Perform tests using qualified personnel. Provide necessary instruments and equipment.

- .3 Check phase rotation and identify each phase conductor of each feeder.
- .4 Check each feeder for continuity, short circuits and grounds. Ensure resistance to ground of circuits is not less than 50 megohms.
- .5 Pre-acceptance tests.
  - .1 After installing cable but before splicing and terminating, perform insulation resistance test with 1000 V megger on each phase conductor.
  - .2 Check insulation resistance after each splice and/or termination to ensure that cable system is ready for acceptance testing.
- .6 Acceptance Tests
  - .1 Ensure that terminations and accessory equipment are disconnected.
  - .2 Ground shields, ground wires, metallic armour and conductors not under test.
  - .3 Leakage Current Testing.
    - .1 Raise voltage in steps from zero to maximum values as specified by manufacturer for type of cable being tested.
    - .2 Hold maximum voltage for specified time period by manufacturer.
    - .3 Record leakage current at each step.
- .7 Provide Departmental Representative with list of test results showing location at which each test was made, circuit tested and result of each test. Include results in Commissioning Manual.
- .8 Remove and replace entire length of cable if cable fails to meet any of test criteria.

**END OF SECTION**