

PART 1 - GENERAL

<u>1.1 RELATED REQUIREMENTS</u>	.1	Section 26 05 00 - Electrical General Requirements
<u>1.2 REFERENCES</u>	.1	Canadian Standards Association (CSA International) .1 CSA C22.2 No.190-M1985(R2009), Capacitors for Power Factor Correction.
<u>1.3 ACTION AND INFORMATIONAL SUBMITTALS</u>	.1	Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
	.2	Product Data: .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, and limitations.
	.3	Submit certified test results to Departmental Representative.
	.4	Quality Assurance Submittals: submit following in accordance with Section 01 45 00 - Quality Control. .1 Instructions: submit manufacturer's installation instructions. .1 Departmental Representative will make available one (1) copy of systems supplier's installation instructions.
<u>1.4 WASTE MANAGEMENT AND DISPOSAL</u>	.1	Separate waste materials for recycling in accordance with Section 01 74 22 - Construction/Demolition Waste Management and Disposal.

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## PART 2 - PRODUCTS

- 2.1 CAPACITORS
- .1 Capacitor assembly for power factor correction: to CSA C22.2 No.190.
  - .2 Capacitor characteristics:
    - .1 50 kVAR, 5 kV insulation class.
    - .2 660 V, 3 phase, 60 Hz, 3 wire, delta.
    - .3 Enclosure: indoor enclosed, dustproof, sprinkler proof.
    - .4 Protective fuses: with blown fuse indicators to Section 26 28 14 - Fuses - Low Voltage.
    - .5 Discharge device: to 50 V in 1 min.
    - .6 Mounted complete with bus, connectors, enclosing plates, screens.
    - .7 Lug terminal.
    - .8 Short circuit capacity to match existing distribution board.
    - .9 Capacity total losses: less than 0.5 watts per KVAR.
    - .10 Tolerance on capacitance: 0%, +15%.
    - .11 Overcurrent tolerance: 135% of rated current continuously.
    - .12 Over a voltage clearance: 110% of rated voltage continuously.
    - .13 Ambient temperature range: -40°C to +46°C (-40°F to 115°F)
    - .14 Internal cables and insulation: stranded, tin plated copper wire. Fire-retardant insulation, rated 105°C (220°F).
    - .15 Protection system: individual capacitor elements shall be reliably disconnected from the circuit at the end of its life.
- 2.2 FINISH
- .1 Apply finishes in accordance with Section 26 05 00 - Electrical General Requirements.

PART 3 - EXECUTION

- 3.1 MANUFACTURER'S INSTRUCTIONS .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.
- 3.2 INSTALLATION .1 Install and connect capacitors.
- 3.3 FIELD QUALITY CONTROL .1 Perform tests in accordance with Section 26 05 00 - Electrical General Requirements.
- .2 Carry out following tests by manufacturer within 24 hours of energizing equipment:
- .1 Voltage and current are balanced and within capacity rating.
- .2 Operating kVAR.
- .3 Terminal to case resistance is greater than 1000 megohm for two bushing capacitors.
- .1 For one bushing capacitor check by measuring discharge time constant.
- .2 This should be less than 60 s and residual capacitor voltage should be reduced from crest value of nominal rated voltage to less than 50 V.
- .3 Provide certified test results to Departmental Representative.
- 3.4 CLEANING .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.