

PART 1 - GENERAL

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| <u>1.1 REFERENCES</u>                          | .1 | Canada Green Building Council (CaGBC)<br>.1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for New Construction and Major Renovations.  |
|  | .2 | CSA International<br>.1 CSA C22.2 No.29-11, Panelboards and Enclosed Panelboards.  |
| <u>1.2 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1 | Submit in accordance with Section 01 33 00 - Submittal Procedures.   |
|  | .2 | Product Data:<br>.1 Submit manufacturer's instructions, printed product literature and data sheets for panelboards and include product characteristics, performance criteria, physical size, finish and limitations.   |
|  | .3 | Shop Drawings:<br>.1 Include on drawings:<br>.1 Electrical detail of panel, branch breaker type, quantity, ampacity and enclosure dimension.   |
|  | .4 | Sustainable Design Submittals:<br>.1 LEED Canada submittals: in accordance with Section 01 35 21 - LEED Requirements.<br>.2 Construction Waste Management:<br>.1 Submit project Waste Management Plan highlighting recycling and salvage requirements.<br>.2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged. |
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1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for panelboards for incorporation into manual.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 35 21 - LEED Requirements.
- .3 Packaging Waste Management: remove for reuse or return of pallets, crates, padding, banding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.

## PART 2 - PRODUCTS

2.1 PANELBOARDS

- .1 Panelboards: commercial grade to CSA C22.2 No.29 and product of one manufacturer.
  - .1 Install circuit breakers in panelboards before shipment.
  - .2 In addition to CSA requirements manufacturer's nameplate must show fault current that panel including breakers has been built to withstand.
- .2 250 and 600 V panelboards: bus and breakers rated for 22 A (symmetrical) interrupting capacity or as indicated.
- .3 Sequence phase bussing with odd numbered breakers on left and even on right, with each breaker identified by permanent number identification as to circuit number and phase.

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| 2.1 PANELBOARDS<br>(Cont'd)  | .4  | Panelboards: mains, number of circuits, and number and size of branch circuit breakers as indicated.  |
|                              | .5  | Flush locks for each panel board.   |
|                              | .6  | Two keys for each panelboard and key panelboards alike.   |
|                              | .7  | Aluminum bus with neutral of same ampere rating of mains.   |
|                              | .8  | Mains: suitable for bolt-on breakers.   |
|                              | .9  | Trim with concealed front bolts and hinges.   |
|                              | .10 | Trim and door finish: baked enamel standard colour.   |
| 2.2 BREAKERS                 | .1  | Breakers: to Section 26 28 16.02 - Moulded Case Circuit Breakers.   |
|                              | .2  | Breakers with thermal and magnetic tripping in panelboards except as indicated otherwise.   |
|                              | .3  | Main breaker: separately mounted on top or bottom of panel to suit cable entry. When mounted vertically, down position should open breaker. |
|                              | .4  | Lock-on devices for breakers installed as indicated. Turn over unused lock-on devices to Departmental Representative.                       |
|                              | .5  | Lock-on devices for fire alarm, clock outlet, emergency, battery units, door access system, exit light circuits, CCTV and as indicated.     |
| 2.3 EQUIPMENT IDENTIFICATION | .1  | Provide equipment identification in accordance with Section 26 05 00 - Common Work Results for Electrical.                                  |
|                              | .2  | Nameplate for each panelboard size 4 engraved as indicated.   |

- 2.3 EQUIPMENT IDENTIFICATION (Cont'd)
- .3 Nameplate for each circuit in distribution panelboards size 2 engraved as indicated.
  - .4 Complete circuit directory with typewritten legend showing location and load of each circuit, mounted in plastic envelope at inside of panel door. Use the directory card provided by the manufacturer.

### PART 3 - EXECUTION

- 3.1 INSTALLATION
- .1 Locate panelboards as indicated and mount securely, plumb, true and square, to adjoining surfaces.
  - .2 Install surface mounted panelboards on plywood backboards in accordance with Section 06 08 99 - Rough Carpentry for Minor Works. Where practical, group panelboards on common backboard.
  - .3 Mount panelboards to height specified in Section 26 05 00 - Common Work Results for Electrical or as indicated.
  - .4 Connect loads to circuits.
  - .5 Connect neutral conductors to common neutral bus with respective neutral identified.

- 3.2 CLEANING
- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
    - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
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- 3.3 PROTECTION
- .1 Protect installed products and components from damage during construction.
  - .2 Repair damage to adjacent materials caused by panelboards installation.