

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 26 28 16.02 - Moulded Case Circuit Breakers.

1.2 REFERENCES

- .1 CSA International
 - .1 CSA C22.2 No.29-11, Panelboards and Enclosed Panelboards.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .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:
 - .1 Include on drawings:
 - .1 Electrical detail of panel, branch breaker type, quantity, ampacity and enclosure dimension.

1.4 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.

1.5 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 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
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- .3 Storage and Handling Requirements:
 - .1 Store materials off ground indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect panelboards from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return packaging materials as specified in Construction Waste Management Plan Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.6 LEED 2009 REQUIREMENTS

- .1 LEED Documentation:
 - .1 Submit Material Safety Data Sheets (MSDS) or product data sheets, for all site applied interior paints, coatings, adhesives, sealants, sealant primers, concrete curing compounds, etc. to ensure compliance with LEED Requirements for low emitting materials as per Section 01 35 21.

PART 2 - PRODUCTS

2.1 PANELBOARDS

- .1 Panelboards: 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 10,000 A (symmetrical) interrupting capacity unless indicated otherwise on drawings.
 - .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.
 - .4 Panelboards: mains, number of circuits, and number and size of branch circuit breakers as indicated.
 - .5 Minimum of 2 flush locks for each panel board.
 - .6 Two keys for each panelboard and key panelboards alike.
 - .7 Copper bus with neutral of same ampere rating of mains.
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- .8 Mains: suitable for bolt-on breakers.
- .9 Trim with concealed front bolts and hinges.
- .10 Trim and door finish: baked enamel as per colour schedule.
- .11 Enclosure to provide a degree of environmental protection equal to or higher than CSA Type 1.

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 10% of 15 to 30 A breakers installed as indicated. Turn over unused lock-on devices to Departmental Representative.

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.
- .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.

2.4 WARNING SIGNS

- .1 Provide potential electric shock and arc flash hazard warning sign in accordance with Section 26 05 00 - Common Work Results for Electrical.
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2.5 LEED 2009 REQUIREMENTS

- .1 All site applied interior paints, coatings, adhesives, sealants, sealant primers, concrete curing compounds, etc. to comply with LEED Requirements for low emitting materials as per Section 01 35 21 - LEED 2009 Requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for panelboards installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 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 10 00 - Rough Carpentry - Short Form. 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.
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3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by panelboards installation.