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**Part 1            General**

**1.1                RELATED SECTIONS**

- .1            Section 26 05 00 - Common Work Results for Electrical.
- .2            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            Submit drawings stamped and signed by professional engineer registered or licensed in Province of Québec, Canada.
  - .2            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 manufacturer's written instructions.
- .2            Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .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.

## **1.6 ACCEPTABLE PRODUCTS AND MATERIALS**

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products.

## **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 14 kA (symmetrical) minimum interrupting capacity for 600 V panelboards, and 10 kA (symmetrical) minimum interrupting capacity for 250 V panelboards, unless indicated otherwise.
- .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.
- .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 Isolated ground bus.
- .12 Where indicated, the word "space" means the space required to receive a future circuit breaker in addition to a removable closure plate. The word "spare" means to provide and install a circuit breaker.

### **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 fire alarm, clock outlet, emergency lights, door supervisory, intercom, stairway lights, and exit light circuits.
  - .1 Extra lock-on devices: 10 for each breakers size, to be turned over 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 Complete circuit directory with typewritten legend showing location and load of each circuit, mounted in plastic envelope at inside of panel door.

### **2.4 ACCEPTABLE PRODUCTS**

- .1 Power-R-Line Series of Eaton.
- .2 NQ or NF Series of Schneider Electric.
- .3 P1, P2, or P3 Series of Siemens.
- .4 Replacement materials or products: approved by addendum according to Instructions to bidders.

## **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.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied.

### **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, 19 mm thick, fireproof, and painted grey. Where practical, group of 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.

- .6 For each recessed panelboard, install three 53 mm empty conduits between the panelboard and the false ceiling. Terminate conduits in pull boxes of 450 mm x 450 mm x 150 mm located in the nearest accessible false ceiling.

### **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.

### **3.4 PROTECTION**

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

**END OF SECTION**