

SECTION 16470

PANELBOARDS

Part 1 -Design Directives

Panelboards that operate at 600 volts or less shall be specified to have hard drawn copper bus with 98% conductivity, bolt-in breakers, covers hinged to box, suitable for flush or surface mounting. All panelboards shall be equipped with a separate equipment grounding terminal strip and removable bonding jumper. Bus and breakers shall have a minimum IAC rating of 22kA for all panelboard assemblies. Ratings of 10kAIC shall be allowed by special permission when transformer rating, cable length and available fault current assures that less than 10k amps will flow into a fault.

All panelboards shall be listed and labeled by a nationally recognized testing laboratory as defined in the National Electrical Code article 100 and OSHA 1910.7

Minimum width of panelboards shall be 20 inches.

The engineer shall assign a unique panel designation that will be included in the design documents. The designation shall be designed so as to convey the floor on which the panel is located, the supply voltage serving the panel and the function of the panel (i.e. lighting or power). The manufacturer shall be instructed to include engraved labels with the unique panel designation established by the engineer at the time of manufacture.

On renovation projects the engineer shall request that the college perform an as-found study of the existing building electrical system. The engineer shall utilize this information to prepare accurate drawings and to ensure that at the end of the project all panel schedules are accurate and in accordance with the requirements stated below.

The engineer shall prepare panel schedules for each panelboard that includes the ampere rating of each breaker, total connected load and diversity factor used in tabulating total panel load. These schedules shall be part of the drawing/spec package and available for review by Dartmouth prior to release for construction.

When the main distribution system in a building is supplied by a panelboard and not a switchboard the system study requirements detailed in section 16425 (Switchboards) shall apply.

Part 2 -Products

Acceptable manufacturers of panelboards and breakers are:

Cutler Hammer

GE

Square D

Part 3 -Execution

Panelboards shall be installed in strict conformance to the requirements of the National Electrical Code. The engineer shall pay close attention to articles 110 and 408 and the requirements stated in the design goals section of this document performing layout and sizing of electric rooms and closets.

Mounting Requirements: The panelboard shall be mounted plumb and rigidly installed to the building surface without distorting or warping of the tub. Maximum height to the top of the trim shall be 6' 2".

A directory of circuits shall be type written and permanently mounted to the inside of the door. A spare blank directory shall be included and installed behind the typed directory. A copy of each directory shall be printed on

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8 ½" by 11" paper for inclusion in the O&M manual. The directory shall include as a minimum the designation for the panel as indicated on the design drawings and the voltage, ampere and phase ratings.