

**STATE OF NEW JERSEY  
BUREAU OF ITS ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
TRENTON, NEW JERSEY 08625**

**MATERIAL SPECIFICATIONS FOR FIBER OPTIC PATCH PANEL**

**GENERAL - I**

1-1 Standards

- Electronic Industry Standards (EIA/TIA)
- International Telegraph and Telephone Consultative Committee (CCITT)
- ANSI
- ASTM standards

1-2 Ensure that the Fiber Optic Patch Panel is designed for termination of single mode optical fibers with SC Type connectors inside field equipment cabinets or equipment enclosure racks located within the buildings.

1-3 Ensure that the same model of Fiber Optic Patch Panel is in use for a minimum of three (3) years under conditions similar to State of New Jersey.

**PATCH PANEL CHARACTERISTICS - II**

2-1 Ensure that the patch panel includes the following accessories:

- Mounting bolts
- SC Type receptacle, Interconnect sleeve or bulkhead adapter
- Jumper cables
- Fiber drawers (for 24/48 port patch panels)
- Storage for fiber (for 6 port fiber patch panel)
- Cable clamps with strain relief
- Flipcard for easier record keeping

2-2 Ensure that number of ports is as noted below:

- 6 port patch panel for 6 fiber cable termination
- 2-6 port patch panel for 8,12 fiber cable termination
- 24 port patch panel for 18 or 24 fiber cable termination
- 48 port patch panel for 36 or 48 fiber cable termination

2-3 Ensure that SC Connector is for single mode application, pre-radiused, zirconia ferrule, and metallic or composition body with strain relief boot. Ensure that the SC connector meets the following requirements:

- Operating temperature: -40° F to 140° F
- Insertion Loss: < 0.25 dB
- Reflectance: < -55 dB
- Durability: < 0.3dB change for > 200 matings

2-4 Ensure that 6-port fiber patch panel provides for termination of 6 single mode optical fibers in field equipment cabinets. Ensure that the patch panels are wall mountable with a nominal size of 9" high x 8" wide x 2.5" deep. Ensure that the storage compartment for excess fiber storage is lockable.

2-5 Ensure that 24/48 port fiber patch panel is suitable for installation in EIA 19 inch rack. Ensure that the 24 port fiber patch panel does not exceed 6 inches in height and 18 inches in depth and the 48 port fiber patch panel does not exceed 11 inches in height and 18 inches in depth. Ensure that the patch panel is constructed from 24 gauge (minimum) sheet metal, painted gray.

- 2-6 Ensure that 24/48 port fiber patch panel has a clear front cover that is easily removable or opened to provide easy access for cable installation. Ensure that the cover is attached to panel enclosure via hinge or fastened thumbscrews. Ensure that the bottom/back panels provide openings for cable entrance, and provide for strain relief at each entrance point. Ensure that the patch panel provides drawers and other fixtures to maintain the minimum bending radius of fiber cables without strain placed on the cable.
- 2-7 Ensure that all SC connectors on the patch panel and plug end on jumper cables are capped with an approved cap.
- 2-8 Ensure that jumper cables (patch cables) are compatible with single mode fiber and provided with factory installed SC type single mode connectors. Ensure that the number of jumper cables is equal to the number of patch panel ports. Ensure that length of jumper cables connecting field equipment is as required for each connection. Ensure that spare jumper cables are 10 feet long. Ensure the fiber optic characteristics of the patch jumper cables meet the same requirements as the ITS Material Specifications for Fiber Optic Cable and manufacturers requirements.