STATE OF NEW JERSEY
DEPARTMENT OF TRANSPORTATION
TRENTON, NEW JERSEY 08625

METRIC SPECIFICATIONS FOR PATCH PANELS
FIBER OPTIC CABLE

N.J. Specification No. EBM-FOC-PP-1 Effective Date: July 1, 2001

New Jersey Department of Transportation Specifications for Fiber Optic Cable Patch Panels for 6, 24, and 48 fiber connections.

The purpose of these specifications is to describe minimum acceptable design requirements for this equipment.

GENERAL - I

1-1 Each fiber optic patch panel shall be designed for the termination of either 6, 24 or 48 single mode fibers with ST type connectors. The size of a patch panel and the installation location(s) shall be as shown in the contract documents and shall conform to these special provisions.

1-2 Patch panels designated for the termination of 6 fibers shall be used to terminate the 8-fiber termination cable that is utilized in: field terminals, radar detectors, VM signs, CCTV cameras, HAR transmitters, intersection controllers, etc. The details of the terminations are indicated in the contract documents.

1-3 Patch panels designated for termination of 24 or 48 fibers shall be used to terminate trunk cables of 18 or 48 fibers, respectively.

1-4 The construction and testing of the fiber optic patch panels shall comply with all applicable Electronic Industry Standards (EIA/TIA), International Telegraph and Telephone Consultative Committee (CCITT), ANSI, ASTM standards and FDDI specifications.

PATCH PANEL CHARACTERISTICS - II

2-1 Patch panels shall be fully equipped to terminate either 6, 24, or 48 single mode optical fibers with ST type single mode fiber optic connectors from one or more cables.

2-2 All patch panels shall include the following accessories:

A. mounting bolts

B. ST type connector (termination) plugs

C. jumper cables

D. fiber drawers (24 and 48 fiber panels only)

E. cable clamps with strain relief.

2-3 Patch panels terminating 6 fibers shall consist of six Single Mode ST couplers mounted on a flange, and shall be equipped with strain relief for the fiber optic cable.

2-4 The patch panels terminating either 24 or 48 fibers shall be designed to install in a standard EIA 483 millimeter rack. The 24 fiber patch panel shall not exceed 152 millimeters in height and 457 millimeters in depth, and the 48 fiber patch panel shall not exceed 279 millimeters in height and 457 millimeters in depth.

2-5 The 24 and 48 fiber patch panels shall have a front cover that shall be easily removed or opened by use of a hinge and/or fastened with thumbscrews to provide easy access for cable installation. The bottom and/or back shall provide openings for cable entrance, and provide for strain relief at each entrance point. The patch panel shall provide drawers and other fixtures as required to maintain the cable fibers at more than minimum bending radius without strain placed on the cable.

2-6 The 24 and 48 fiber patch panels shall be constructed from 0.6 millimeter (minimum) sheet metal, painted gray.

2-7 Jumper cables (also called patch cables) shall be 3 meters long, compatible with single mode optical fiber and provided with factory installed ST type single mode connectors, and shall be supplied with each patch panel. The following jumpers shall be included with each type of panel:

A. Panel terminating 6 fibers shall include 4 jumper cables

B. Panel terminating 24 fibers shall include 12 jumper cables

C. Panel terminating 48 fibers shall include 24 jumper cables

TESTING - III

3-1 The contractor shall examine each patch panel and jumper cable for defects and for all accessories including: mounting bolts, ST type connector (termination) plugs, jumper cables, fiber drawers, and cable clamps with strain relief.

TRAINING - IV

4-1 Prior to the acceptance of the first patch panel, training shall be provided for the Department's engineering, maintenance and operations staff, at a facility provided by the Department. The training shall include all material and manuals required for each participant.

4-2 Training for installation, use and maintenance of patch panels shall be provided for a minimum of 4 hours for at least 15 personnel with a background in cable operation and

maintenance. The training shall include operation, field adjustments, preventive maintenance procedures, troubleshooting, and repair.

INSTRUCTIONS AND GUARANTEES - V

5-1 One set of complete schematics, and installation and use manual shall be supplied with each five units furnished.

5-2 No changes or substitutions in these requirements will be acceptable unless authorized in writing. Inquiries regarding this specification shall be addressed to the Manager, Office of ITS Engineering, New Jersey Department of Transportation, P.O. Box 613, 1035 Parkway Avenue, Trenton, New Jersey 08625.

5-3 The Supplier agrees upon the request of the Manager, Office of ITS Engineering to deliver to the Office, a sample of each type of patch panel to be supplied in compliance with these specifications for inspection and test before acceptance. The sample shall be returned.

5-4 The supplied patch panels, connectors and jumper cables shall carry a two-year warranty, from the date of project acceptance by the State, to be free of defects. The installer shall fully inspect the units prior to installation and within the warranty period. The installer shall be fully responsible for the installation of defect free units and for the replacement of any unit found to be defective due to improper construction or improper installation for two years after the State's acceptance of the project.