

SECTION 27 05 53

IDENTIFICATION FOR COMMUNICATION SYSTEMS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section and the other sections of Division 27.

1.02 SUMMARY

- A. This section relates to the Structured Cabling Sections of this specification.
- B. This Section includes requirements for identification of components including but not limited to the following:
 - 1. Identification labeling for cables and conductors
 - 2. Operational or instructional signs
 - 3. Equipment labels
- C. Refer to project drawings and other Division 27 sections for additional specific identification associated with the specific items.
- D. Labeling shall be consistent. Please ensure labeling corresponds to the final room number which may be different than the Architect's number scheme on the construction documents.
- E. Comply with the EIA/TIA Standard 606-B, "The Administration Standard for the Telecommunications Infrastructure".
- F. The Contractor shall submit, for approval by the Technology Consultant and Owner, a labeling system for the cable installation. The Owner will coordinate the exact verbiage of the labeling scheme with the successful contractor. At a minimum, the labeling system shall clearly identify all components of the system: racks, cabinets, ground bars, cables, panels and outlets. The labeling system shall designate the cable origin and destination and a unique identifier for the cable within the system. Racks and patch panels shall be labeled to identify the location within the cable system infrastructure. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme.
- G. All label printing shall be machine generated using indelible ink ribbons or cartridges. Self-laminating labels shall be used on cable jackets, appropriately sized to the OD of the cable, and placed within the view at the termination point on each end. Outlet, patch panel and writing block labels shall be installed on, or in the space provided on the device.

1.03 SUBMITTALS

- A. Submit the following in accordance with Section 270110 Operations and Maintenance of Structured Cabling Enclosures:
 - 1. Manufacturer's data for each type of product specified.
 - 2. Schedule of identification and nomenclature to be used for identification labels.
 - 3. Samples of each color, lettering style and other graphic representation required for identification materials.

- B. Labeling conventions for copper and fiber optical cable and terminations shall be approved by the Owner’s IT department prior to installation.

1.04 QUALITY ASSURANCE

- A. All work shall be in accordance with the general principles outlined in the BICSI TDMM manual latest edition and with the TIA-526, TIA-568-D.2-1 and TIA-606-B Standards.
- B. UL Compliance: Comply with the applicable requirements of the UL Standard 969. “Marking Systems”, with regards to type and size of lettering for raceways and cable labels.
- C. NEMA Compliance: Comply with applicable requirements of NEMA Standards WC-1 and WC-2 pertaining to identification of power and control conductors.
- D. Major items of equipment shall have manufacturer’s name, address and catalog number on the plate securely attached in a convenient place.

1.05 SUGGESTED NUMBERING AND LABELING SCHEME

- A. All labeling/color schemes for the structured cabling shall conform to the standards as set forth and confirmed by the LSU IT department.
- B. Workstation Cable Numbering:
 - 1. Faceplate labeling shall be consistent with that of the other buildings on the campus. Provide labeling per owner’s directions.
 - 2. There shall not be any open places on the patch panel.
 - 3. Terminate all outlets from the same room sequentially on the same patch panel.
 - 4. If an outlet is added, it gets a new number that is next on the sequence even if it is on an existing faceplate.
 - 5. Labeling techniques: The label shall be black letters on white background. Labels must be produced by label-making equipment. The blank white label tags that are included in the faceplate hardware are to be installed with clear plastic shields in all positions on the faceplate.
- C. Workstation Cable Numbering Standard: AA-BB-C-DD-A/B/C/D
 - 1. AA= Building Number
 - 2. BB= Floor that the Telecommunications Room resides
 - 3. C= Patch panel number
 - 4. DD= Patch panel port position
 - 5. A/B/C/D= Faceplate position

1.06 RISER CABLES

- A. Number scheme: Riser cables must be assigned specific numbers. Each shall be tagged with the building abbreviation and room number of the BET/IDF at both ends of the cable clearly shown.
- B. Labeling techniques: Each cable is to be labeled on each end within 6” of where it terminates on the cross-connect panel. Cable tags must be securely fastened to the cable sheath. Wrap around tags protected by clear polyurethane tape may be used as well. Tags must be typed and be permanent. Cable tags that appear less than permanent will not be accepted. Directly writing on the cable sheath will not suffice as proper labeling of the riser cables.

1.07 UTP CABLING CROSS-CONNECT BLOCKS

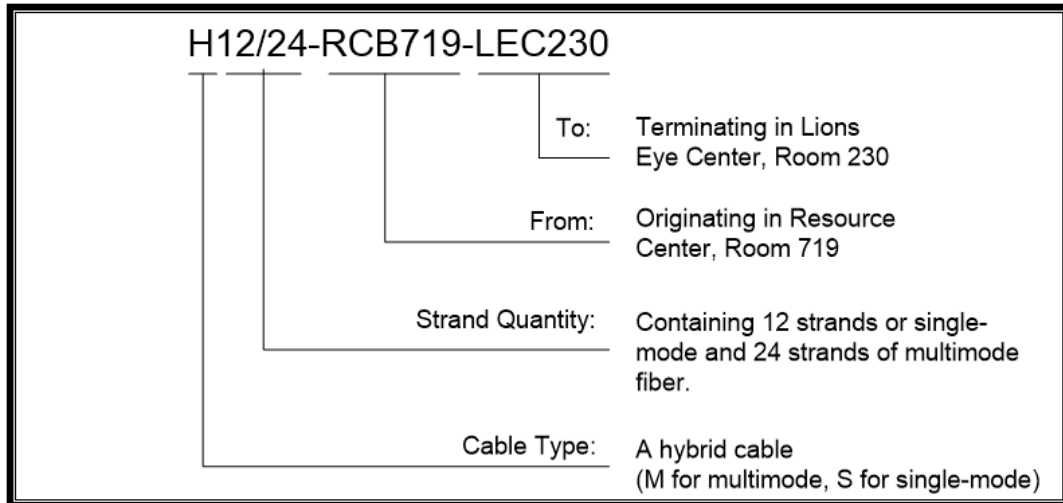
- A. Numbering scheme: 25 pair cables from the Utility RJ21X blocks are terminated on blocks. Cable pairs are numbered in 25 pair increments. The first cable is numbered 1-25, the second 26-50, etc. Pair #1 is terminated on the left position of the top block. Subsequent cable pairs are terminated from left to right and from top to bottom.
- B. Labeling technique: The first label block shall read, “Cables to RJ21X blocks, 1-25”. Subsequent label blocks shall denote the same for pairs 26-50, etc. The label shall be black letters on white background. Labels must be produced by label-making equipment. Handwritten labels are not allowed.

1.08 FIBER OPTIC PANELS

- A. Numbering scheme: Fiber optic cables and terminations shall be numbered and labeled per current EIA/TIA Standards. The numbering scheme denotes the cable function (campus backbone, building entrance, or intrabuilding), sheath number, and buffer tube number.
- B. Labeling techniques: A label shall be installed onto the outside of the front face of the connector housing to read, “Horizontal fiber optic cables to outlets” or “Entrance/riser fiber optic cables” as appropriate. Labels must be produced by label making equipment. Handwritten labels are not permitted. Horizontal fiber optic cables shall be labeled on the label tags on the closet connector housing. Each cable terminated shall be labeled with the following information: type of fiber optic cable and outlet number. For example, a label block for a multimode horizontal fiber optic cable termination might read “MM-17”. Terminations are numbered by the outlet number, not the housing or connector panel position number. Only adapter positions that are terminated are labeled.

1.09 OSP FIBER OPTIC CABLES

- A. Numbering scheme: The numbering scheme denotes the cable function (campus backbone or building entrance). Each fiber optic cable sheath shall be tagged in each BET and IDF with the number and type of strands in the sheath (i.e. 12SM/12MM) and the building name of the far end of the cable clearly shown. In each intermediate maintenance hole or hand hole each cable sheath shall be tagged with the number and type of strands in the sheath and the building name of each of the cable endpoints clearly shown. Refer to the example below:



- B. Labeling technique: Each cable is to be labeled within 36” of where it enters each BET or IDF. Cable tags may be cloth or plastic tape securely fastened to the cable sheath. Wrap around tags protected by clear polyurethane tape may be used as well. Tags must be typed or permanent. Cable tags that appear less than permanent will not be accepted. Directly writing on the cable sheath will not suffice as proper labeling. In intermediate maintenance holes and hand holes, one wrap-around cable marker shall be installed on each cable sheath. Markers shall have a clear Mylar covering reading “Fiber Optic Cable-Caution” with space for cable designation. Cable markers shall be orange in color. Other types of tags, tapes or sheath marking are not acceptable.

1.10 EQUIPMENT RACKS

- A. Numbering scheme: Each rack is numbered sequentially denoting the following information: BET/IDF room number, and rack number. There is no correspondence between the rack equipment and configuration (type) and the rack number. Unique rack number example:
1. 1.1 = Row 1, Rack 1
 2. 1.2 = Row 2, Rack 2
 3. 2.1 = Row 2, Rack 1
 4. 2.2 = Row 2, Rack 2
- B. Labeling techniques:
1. Two labels shall be installed onto the front face of each equipment rack, one at the bottom of the rack, and one at the top.
 2. All labels shall be black letters on white background.
 3. Provide engraved stock melamine plastic laminate, complying with FS L-P-387, in sizes and thicknesses indicated, engraved with engraver’s standard letter style of the sizes and wording indicated, black face and white core plies (letter color) except as otherwise indicated, punched for mechanical fastening

1.11 TELECOM ROOM ELECTRICAL RECEPTICLES

- A. Each electrical receptacle in MDF/IDFs shall be labeled with the following information: room number where electrical panel is located, panel number, and circuit number. Each receptacle is to be labeled on top or front of the faceplate or outlet box. Preprinted adhesive labels or tags shall be used.

PART 2 PRODUCTS

2.01 TECHNOLOGY IDENTIFICATION PRODUCTS

- A. Cable/Conductor Identification Bands:
 - 1. Provide Manufacturer's standard wrap-around cable/conductor markers, of size required for proper application, and numbered to show circuit identification.
- B. Equipment Labels
 - 1. General: Provide engraved stock melamine plastic laminate, complying with FS L-P-387, in sizes and thicknesses indicated, engraved with engraver's standard letter style of the sizes and wording indicated, black face and white core plies (letter color) except as otherwise indicated, punched for mechanical fastening.
 - 2. Thickness: 1/16", for units up to 20 sq. in. or 8" length; 1/8" for larger units.
- C. Lettering and Graphics
 - 1. Coordinate names, abbreviations and other designations used in technology identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturers or as required for proper identification and operation/maintenance of the technology systems and equipment.
 - 2. Fasteners for Plastic-Laminated Signs shall be self-tapping stainless-steel screws or number 10/32 stainless steel machine screws with nuts and lock washers.
 - 3. Exception: Where specifically approved contact type permanent adhesive may be used where screws cannot or should not penetrate substrate.

PART 3 EXECUTION

3.01 GENERAL

- A. Except as otherwise indicated, provide manufacturer's standard products of categories and types required for each application.
- B. The contractor shall be responsible to adapt their labeling and identification system to match the existing standards of LSU IT and meet those standards to the Owner's satisfaction.
 - 1. The contractor shall procure a copy of the owner's detailed labeling & identification standards and shall follow those standards as directed.
- C. Lettering and Graphics
 - 1. Coordinate names, abbreviations, colors and other designations used in technology identification work with corresponding designations specified or indicated. Install numbers, lettering, and colors as approved in submittals and as required by standards.
- D. Install identification devices as indicated, in accordance with manufacturers written instructions.
- E. Sequence of work: Where identification is to be applied to surfaces that require finish, install identification after completion of finish work.

3.02 TECHNOLOGY ROOM IDENTIFIER

- A. The Technology Rooms (Communications Distribution rooms) shall be identified with three (3) distinct identifiers:

1. Room number
2. IDF Identifier
3. POP Identifier

3.03 CABLE/CONDUCTOR IDENTIFICATION

- A. Apply cable/cable conductor identification on each cable/conductor in each box/enclosure/cabinet where wires of more than one circuit or communication/signal system are present. Match identification with the marking system used on shop drawings, contract documents, and similar previously established identification for project's technology work.

3.04 OPERATIONAL SIGNS

- A. Provide instructional signs with approved legend where instructions or explanations are needed for system or equipment operation.

3.05 OUTLET IDENTIFICATION

- A. Label each voice and data outlet with the proper designation and provide appropriate icon.
- B. The RJ45 jacks shall have the following basic color coding:
1. Data = Blue
 2. Special Purpose - Networking = Violet
 3. Special Purpose – Building Systems = Orange

3.06 INSTALLATION

- A. Provide equipment identification labels of engraved plastic-laminate on all equipment racks and on major units of technology equipment in buildings. Except as otherwise indicated, provide single line of text, with ½-inch high lettering on 1-½-inch high label (2-inch high where two lines are required), white lettering in black filed. Text shall match terminology and numbering of the Contract Documents and shop drawings.
- B. Provide labels at locations indicated and at locations for best convenience of viewing without interference with operation and maintenance of equipment

END OF SECTION