

## **SECTION 270553 - IDENTIFICATION FOR COMMUNICATIONS**

### **PART 1 - GENERAL**

#### **1.1 SUBMITTALS**

- A. Product datasheets.
- B. Labeling schemas.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Labeling of cabling and termination devices.
  - 2. Labeling of equipment.
  - 3. Labeling of Communications Rooms.
- B. Requirements of this Section apply to all Work of this Division and Work Division 28 (where applicable).

#### **1.3 REFERENCE STANDARDS**

- A. Definitions:
  - 1. Component Identifier / Component ID: See Device ID
  - 2. Device.ID: The unique identifier given to a specific instance of a product, module and assembly. Identifiers are unique within the context of the system and product in which it is used.

#### **1.4 SYSTEM DESCRIPTION**

- A. The identification system shall be a coordinated system of permanently affixed labels of specified types that are used to uniquely identify each instance of a product and the space in which it is located. The following items shall be identified:
  - 1. Cables.
    - a. All cables shall have cable ID on the jacket at each end 4-6 inches from termination.
  - 2. Telecommunications cabling cross-connect Blocks, including 66-blocks and 110-blocks.
  - 3. Patch Panels.
  - 4. Faceplates.
  - 5. Individual connection jacks, receptacles and terminals.
  - 6. Remote Equipment enclosures/cabinets not within telecommunications rooms.

7. Equipment racks and cabinets within telecommunications rooms.
  8. Telecommunications Backboards.
  9. Rooms containing communications or security products.
  10. Device boxes, junction boxes, pull boxes, floor boxes, wall boxes, ceiling boxes and other forms of boxes used for passage, splicing, or termination of cables.
  11. Equipment power cord plugs.
- B. The labeling schema used for horizontal and backbone structured cabling systems shall be TIA/EIA-606-A, or most current version, compliant.
- C. Label Type Schedule

LABEL TYPE SCHEDULE		
APPLICATION	TYPE	NOTES
EQUIPMENT RACK - FRONT	DB	
EQUIPMENT RACK - REAR	DB	
PATCH PANELS – BACKBONE CABLES	CB	
PATCH PANELS – HORIZONTAL CABLES	CB	
FACEPLATES – HORIZONTAL	CB	CLEAR BACK
FACEPLATES - CUSTOM	DE	ENGRAVED; SCREENED
FACEPLATES – MULTISERVICE	CB	CLEAR BACK; ENGRAVED
OUTLETS – HORIZONTAL	CB	
OUTLETS – CUSTOM FACEPLATE	DB	
CABLES - HORIZONTAL	CA	
CABLES - BACKBONE	CA	
AV CABLES	CA	
COMMUNICATIONS BACKBOARDS	DC	
CONNECTING BLOCKS	PI	WITH PLASTIC COVER
FIBER OPTIC PANEL	PI	
ABBREVIATED DEFINITIONS CA=SELF LAMINATING WRAP-AROUND), CB=SELF LAMINATING DA = LAMACOID, DB=TAPE TYPE, DC=IMPRINTED/ETCHED; DE=ENGRAVED PI=PRINTED INTEGRAL LABEL; RA=LAMACOID SEE SECTION 270553 FOR SPECIFICATIONS OF VARIOUS LABEL TYPES		

**PART 2 - PRODUCTS**

**2.1 GENERAL**

- A. Products furnished of each Type shall be manufactured by a single manufacturer, bear the same brand name, be the same finish color and texture, and be from the same product model series, except where otherwise indicated.

## 2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Brady
  - 2. Brother
  - 3. Casio
  - 4. Hubbell
  - 5. Panduit
  - 6. Hellerman/Tyton
  - 7. Thomas and Betts

## 2.3 PERFORMANCE

- A. Labels shall be designed to remain permanently affixed under typical environmental conditions for the life of the product identified.
- B. Nomenclature shall be permanent and non-fading under typical environmental conditions.
- C. Adhesive labels shall remain attached to the affixed product in continuous conditions of 90% relative humidity and temperatures of 100-degrees Fahrenheit (38-degrees Celsius).

## 2.4 CABLE INFRASTRUCTURE LABELS

- A. Type CA:
  - 1. Self-laminating type.
  - 2. Adhesive backed.
  - 3. Opaque solid-color background area, color for nomenclature: White.
  - 4. Clear self-laminating wrap-around cover for protection of nomenclature.
  - 5. Available in a variety of heights and widths to suit the cable being labeled.
  - 6. Printing area of the label available in a wide variety of sizes to accommodate the specific nomenclature to be applied.
  - 7. Overall label width: Minimum 1 inch (25 mm); Maximum 2 inches (50 mm).
  - 8. Opaque printing area length: Minimum 1/2 inch (12 mm); Maximum 1-1/4 times the cable circumference.
  - 9. Self-laminating wrap length: 1-1/2 to 2-1/2 times the cable circumference.
  - 10. Bold computer-generated and commercial printer applied high-contrast project and system specific nomenclature.
- B. Type CB – Tape Type:
  - 1. Self-laminating type.
  - 2. Adhesive backed.

3. Opaque solid-color background area, color for nomenclature: White.
4. Available in a variety of heights and widths to suit the termination being labeled.
5. Printing area of the label available in a wide variety of sizes to accommodate the specific nomenclature to be applied.
6. Overall label width: Minimum 1 inch (25 mm); Maximum 2 inches (50 mm).
7. Opaque printing area length: Minimum 1/2 inch (12 mm); Maximum 1-1/4 times the cable circumference.
8. Bold computer-generated and commercial printer applied high-contrast project and system specific nomenclature.

C. Type PI – Tape Type:

1. Integral card type.
2. Opaque solid-color background area, color for nomenclature: White.
3. Heights and widths to suit the termination being labeled.
4. Printing area of the label to accommodate the specific nomenclature to be applied.
5. Bold computer-generated and commercial printer applied high-contrast project and system specific nomenclature.
6. Provide with clear plastic covers to protect label.

## 2.5 DEVICE LABELS

A. Type DB – Tape Type:

1. Tape-type construction.
2. Material: Polyester.
3. Working temperature range: -40 to 248 degrees Fahrenheit (-40 to 120 degrees Celsius)
4. Opaque solid-color background over which nomenclature is applied.
5. Self-adhesive backing for adhesion to labeled item.
6. Designed for thermal-transfer based machine imprinting of nomenclature.
7. Available in a wide-variety of manufacturer sizes.
8. Available with a wide-variety of background colors.
9. Available with a variety of different nomenclature colors.

## 2.6 CABLE LABEL HEATSHRINK

- A. Should any condition arise in which cable labels are used that are neither self-laminating nor permanent, then properly sized clear heat-shrink shall be applied over the label to make it permanent.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

A. General:

1. Label each instance of each product.
2. Label each connector of each product.
3. Install labels so that they are legible after installation.
4. Install labels so they are parallel to the dominant visual lines of the product identified.
5. Install labels of the appropriate size for the application.
6. Maintain consistency in label sizes that are used for labeling similar applications.
7. Install secondary labels on the rear of products that are mounted within racks, within equipment enclosures/cabinets, within furniture or casework, and in any application where the rear of the product is accessed for termination, installation, service, operation or adjustment.
8. Coordinate “final” room numbers or identifiers with the Owner prior to performing work; all labeling shall perform to operational room identifiers. If actual room numbers differ from architectural room numbers both shall be included on the as-built floorplans.
9. Campus environments with multiple buildings shall add a building identifier to the labeling in each building.

B. Cables:

1. General:
  - a. Uniquely identify each cable so that no two cables serving a single system utilize the same identifier.
  - b. Cables that terminate within different architectural spaces shall include both the source and destination space identifiers on the label in addition to a unique cable identifier
  - c. Install a primary label near the end of cable.
  - d. Install a secondary label (with identical nomenclature as the primary label) near the ends of the cable at such point that the label is viewable and readable when the cable is in its final dressed position.
  - e. Utilize specified labeling schemas. Substitute schema may be considered if submitted to, reviewed and returned by the Designer without exceptions.
2. Horizontal Cables:
  - a. Label in accordance with TIA/EIA-606-A, or most current version.
  - b. Horizontal labeling schema:
    - 1) “Communication Room Identifier”–“Outlet Room Number”–“Rack, Patch Panel and Patch Panel Port Number.”
3. Backbone Cables:
  - a. Label in accordance with TIA/EIA-606-A, or most current version.
  - b. In addition to labels at each end, apply a label at each junction/pull point to identify the cable.
  - c. Cabling labeling schema:

- 1) Service designation and number: CB = Copper Backbone, FB = Fiber Backbone, VB = Video Backbone (e.g., CB.01, FB.01, FB.02, VB.01)
  - 2) Interconnected Communication Room designations (e.g., ER01–TR04)
  - 3) Composite Examples:
    - a) Example: CB.01–ER01–TR02.
    - b) Example: CB.01–ER01–TR03.
4. Patch Cables:
- a. Label with the same unique identifier at each end.
5. Multi-Cable Assemblies and Tethers:
- a. Label the overall assembly, sleeve, or jacket (as applicable) at both ends.
  - b. Label each individual cable member at both ends.
  - c. If the cable assembly features connectors on the end of any cable member, affix labels also on the connector. Use user-friendly nomenclature that identifies the use of the connector and the port to which it mates.
  - d. See illustrations at the end of this Section.
- C. Faceplates and Outlets:
1. Faceplates – General:
    - a. Label each faceplate with a Device.ID label.
      - 1) Exception: Faceplates used exclusively for Horizontal cables do not need to feature a Device.ID label.
      - 2) Exception: Blank faceplates are not required to have a Device.ID label, except where noted.
    - b. Use labels with a clear background or a background color that matches the plate. On custom fabricated faceplates, label shall be integral to the plate by means of engraving or screening or other approved means.
    - c. See illustrations at the end of this Section.
  2. Faceplates – with Horizontal Cables:
    - a. Label modular outlet frame(s) with a label identifying origination and destination rooms of the horizontal cable(s) present at the faceplate. When non-modular faceplates are used, affix the label to the plate.
  3. Outlets/Connectors – General:
    - a. Label each outlet.
  4. Outlets/Connectors – Horizontal Cables:

- a. Identify the specific patch panel and port to which the opposite end of the cable is connected.
5. Use .35” tape with 9 pt Arial font.
- D. Cross-Connect Blocks:
1. 110-Style:
    - a. Label the front of the block directly above or below (as indicated by the manufacturer) each position in the block.
    - b. Label connections in numerical order and corresponding to the faceplate outlet schema (horizontal cabling) or the opposite end labeling schema (backbone cabling), dependent upon use.
    - c. Label the upper left corner of each block designating the service of that particular block.
  2. 66-Style:
    - a. Label the front of the block directly above or below (as indicated by the manufacturer) each position in the block.
    - b. Label connections in numerical order and corresponding to the faceplate outlet schema (horizontal cabling) or the opposite end labeling schema (backbone cabling), dependent upon use.
    - c. Label the upper left corner of each block designating the service of that particular block.
- E. Patch Panel:
1. Chassis – General:
    - a. Label each panel chassis with a Device.ID.
    - b. Affix chassis labels aligned with the left or right edge of the product. Locate consistently across chassis in the rack and throughout the project.
  2. Chassis – for Horizontal Cabling:
    - a. In lieu of or in addition to the Device.ID uniquely label the chassis for each panel within each Communication Room in accordance with the following schema:
      - 1) “Letter” or “Letter Letter” where letters A-Z or dual letter assemblies AA-ZZ are valid.
  3. Individual Connectors – for Horizontal Cabling:
    - a. Label each connector on each panel in order from Left to Right and Top to Bottom 1 to “X,” where “X” is the number of connector spaces on the panel.

- b. In addition, the connector label nomenclature shall clearly identify the room number in which the opposite end of the cable is terminated.
  - 4. Individual Connectors – Others:
    - a. Label each connector.
    - b. Use color-coded nomenclature acceptable to the Designer.
- F. Patch Bays (e.g., Audio, Video):
- 1. Label each patch bay with a Device.ID.
  - 2. Label each connector on the patch bay.
  - 3. Use color-coded nomenclature acceptable to the Designer.
  - 4. Where the patch bay features an integral labeling strip, label the connectors using the strip following the techniques recommended by the manufacturer.
  - 5. Where the Drawings depict additional means of labeling, provide additional labels with designer reviewed nomenclature.
- G. Communications Backboards/Telecommunication Back Boards (TBB):
- 1. Label each full-size and each partial sheet of backboard material (e.g., plywood).
  - 2. Label each backboard in numerical order using a unique identifier beginning at one and up to the number of boards present in the space.
  - 3. Label boards in a clockwise fashion beginning with the interior surface of the room immediately adjacent to the frame of the primary entry door into the space. Each increment of 4-linear feet per wall shall be assigned a unique value.
  - 4. Locate the labels horizontally centered and top-aligned with each backboard.
  - 5. Use Lamacoid type labels.
- H. Equipment Racks:
- 1. Label each equipment rack with a unique identifier.
  - 2. Accurately record the nomenclature on the project as-built documentation.
  - 3. Affix a primary label to the front of the rack.
  - 4. Affix a secondary label to the rear of the rack.
  - 5. Locate labels on the upper-most part of the rack, typically the frame, in an area that is clearly visible if doors are installed and closed.
  - 6. Label each equipment rack to match the designation indicated on the floor plans
  - 7. Labels shall be black text on white background.

### **3.2 LABEL PROTECTION**

- A. Cable Labels: If at any time during the course of the project a condition arises for which cable labels are used that are neither self-laminating nor permanent, then such labels shall be protected with properly sized clear heat-shrink to protect the label and to make it permanent.



### **3.3 RECORD DRAWINGS**

- A. Accurately record the labels used for identifying items within the project as-built documentation.

**END OF SECTION 270553**