Section 27 11 00

COMMUNICATION EQUIPMENT ROOM FITTINGS

Section 27 11 23

Communications Cable Management and Ladder Rack

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Provide all labor, materials, and equipment for the complete installation of work called for in the Contract Documents.

1.2 SCOPE OF WORK

A. This section includes the minimum requirements for the equipment and cable installations in communications equipment rooms (Telecommunications Closets).

B. Included in this section are the minimum composition requirements and installation methods for the following:

1. Cable Management

1.3 QUALITY ASSURANCE

A. All cable and equipment shall be installed in a neat and workmanlike manner. All methods of construction that are not specifically described or indicated in the contract documents shall be subject to the control and approval of the Owner or Owner Representative. Equipment and materials shall be of the quality and manufacture indicated. The equipment specified is based upon the acceptable manufacturers listed. Where “approved equal” is stated, equipment shall be equivalent in every way to that of the equipment specified and subject to approval.

B. Strictly adhere to all Building Industry Consulting Service International (BICSI), Electronic Industries Alliance (EIA) and Telecommunications Industry Association (TIA) recommended installation practices when installing communications/data cabling.

C. Material and work specified herein shall comply with the applicable requirements of:

1. ANSI/TIA/EIA – 568-B *Commercial Building Telecommunications Cabling Standard*, 2000-2004

2. TIA – 569-B *Commercial Building Standard for Telecommunications Pathways and Spaces*, 2004

3. ANSI/TIA/EIA – 606-A *Administration Standard for the Telecommunications Infrastructure of Commercial Buildings*, 2002

4. ANSI-J-STD – 607-A *Joint Standard for Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications*, 2002

5. NFPA 70 – *National Electric Code*, 2005

6. BICSI – *Telecommunications Distribution Methods Manual, 10th Edition*, 2003

7. ANSI/NECA/BICSI 568-2001 – *Standard for* Installing Commercial Building Telecommunications Cabling

1.4 SUBMITTALS

A. Provide product data for the following:

1. Manufacturers data/cut sheets, specifications and installation instructions for all products (submit with bid).

PART 2 – PRODUCTS

2.1 CABLE MANAGEMENT

A. Vertical Cable Management for Racks/Frames
(VCS Vertical Cabling Section)

1. Every rack/frame shall have a minimum of one vertical cable manager. The vertical cable manager shall create a space for storing and organizing cables along the side of the rack/frame. The cable manager shall maintain separation between patch/equipment/jumper cords and premise cables.

2. The vertical cable manager shall match the height of the rack(s)/frame(s).

3. The vertical cable manager shall bolt to the side of racks/frames with included hardware.

4. The cable manager shall be sized to match cabling requirements. The initial quantity of cables within the cable manager shall not exceed a whole number value equal to 40% of the interior area of the cable manager.

5. A single vertical cable manager can be used in between bayed racks/frames if it is sized to match cable requirements for both racks/frames.

6. The vertical cable manager shall be a single-sided C-shaped trough or a double-sided H-shaped trough with evenly spaced spin-open latches on the front and rear sides. The front and rear metal edges in between the latches shall be covered by plastic edge protectors to protect cables. The double-sided trough shall provide independent front and rear cable pathways and shall have multiple evenly-spaced edge-protected front-to-rear cable pass-through holes for cables in the center divider.

7. The cable manager shall be delivered individually boxed, and available in several widths as specified below and in the contract documents.

8. The vertical cable manager shall be manufactured from aluminum and plastic.

9. Finish shall be epoxy-polyester hybrid powder coat paint in the color as specified below and in the contract documents. Edge-protectors and latch hardware is black.

10. Provide accessory cabling section covers and snap on T-shaped plastic cable guides with openings that align with RMU spaces in the rack/frame with all cabling sections.

11. Design Make shall be:
    Chatsworth Products, Inc. (CPI),
    VCS Vertical Cabling Section:

    Part Number 11730-700, VCS Vertical Cabling Section, Narrow, Single-Sided, 3.65" (92.7 mm) Wide x 5'6" (1.7 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11730-701, VCS Vertical Cabling Section, Narrow, Single-Sided, 3.65" (92.7 mm) Wide x 6' (1.8 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11730-702, VCS Vertical Cabling Section, Narrow, Single-Sided, 3.65" (92.7 mm) Wide x 6'6" (2.0 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11730-703, VCS Vertical Cabling Section, Narrow, Single-Sided, 3.65" (92.7 mm) Wide x 7' (2.1 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11730-705, VCS Vertical Cabling Section, Narrow, Single-Sided, 3.65" (92.7 mm) Wide x 7'6" (2.3 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11730-715, VCS Vertical Cabling Section, Narrow, Single-Sided, 3.65" (92.7 mm) Wide x 8' (2.4 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11730-708, VCS Vertical Cabling Section, Narrow, Single-Sided, 3.65" (92.7 mm) Wide x 9' (2.7 m) High x 6.38" (162.1 mm) Deep, Black.
    Other colors available. Change -7 P/N to -1 for Gray or -2 for Computer White.

    Part Number 11374-700, VCS Vertical Cabling Section, Wide, Single-Sided, 6" (150 mm) Wide x 5'6" (1.7 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11374-701, VCS Vertical Cabling Section, Wide, Single-Sided, 6" (150 mm) Wide x 6' (1.8 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11374-702, VCS Vertical Cabling Section, Wide, Single-Sided, 6" (150 mm) Wide x 6'6" (2.0 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11374-703, VCS Vertical Cabling Section, Wide, Single-Sided, 6" (150 mm) Wide x 7' (2.1 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11374-705, VCS Vertical Cabling Section, Wide, Single-Sided, 6" (150 mm) Wide x 7'6" (2.3 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11374-715, VCS Vertical Cabling Section, Wide, Single-Sided, 6" (150 mm) Wide x 8' (2.4 m) High x 6.38" (162.1 mm) Deep, Black.
    Part Number 11374-708, VCS Vertical Cabling Section, Wide, Single-Sided, 6" (150 mm) Wide x 9' (2.7 m) High x 6.38" (162.1 mm) Deep,

Black.
Other colors available. Change -7 P/N to -1 for Gray or -2 for Computer White.

Part Number 12096-703, VCS Vertical Cabling Section, Narrow, Double-Sided, 3.65" (92.7 mm) Wide x 7' (2.1 m) High x 12.75" (323.9 mm) Deep, Black.
Part Number 12096-715, VCS Vertical Cabling Section, Narrow, Double-Sided, 3.65" (92.7 mm) Wide x 8' (2.4 m) High x 12.75" (323.9 mm) Deep, Black.
Part Number 12096-708, VCS Vertical Cabling Section, Narrow, Double-Sided, 3.65" (92.7 mm) Wide x 9' (2.7 m) High x 12.75" (323.9 mm) Deep, Black.
Other colors available. Change -7 P/N to -1 for Gray or -2 for Computer White.

Part Number 11729-703, VCS Vertical Cabling Section, Wide, Double-Sided, 6" (150 mm) Wide x 7' (2.1 m) High x 12.75" (323.9 mm) Deep, Black.
Part Number 11729-715, VCS Vertical Cabling Section, Wide, Double-Sided, 6" (150 mm) Wide x 8' (2.4 m) High x 12.75" (323.9 mm) Deep, Black.
Part Number 11729-708, VCS Vertical Cabling Section, Wide, Double-Sided, 6" (150 mm) Wide x 9' (2.7 m) High x 12.75" (323.9 mm) Deep, Black.
Other colors available. Change -7 P/N to -1 for Gray or -2 for Computer White.

Part Number 12189-001, Cabling Section Cover, for Narrow VCS, 3.65" (92.7 mm) Wide x 7' (2.1 m) High, Tinted Plexiglass.
Part Number 12188-001, Cabling Section Cover, for Wide VCS, 6" (150 mm) Wide x 7' (2.1 m) High, Tinted Plexiglass.
Part Number 12664-702, Cabling Section Cover, for Narrow VCS, 3.65" (92.7 mm) Wide x 7' (2.1 m) High, Metal, Black.
Part Number 12664-701, Cabling Section Cover, for Wide VCS, 6" (150 mm) Wide x 7' (2.1 m) High, Metal, Black.
Other sizes available.

Part Number 12370-002, Finger Snaps Cable Guides, for 7' (2.1 m) High VCS, Kit of 12, Black.

Cover and Finger Snaps are optional. Omit item 2.1.A.10. if not used.

B. Horizontal Cable Management for Racks/Frames

1. Place horizontal cable managers above and below each patch panel on/in each rack/frame. The horizontal cable manager will guide patch/equipment cords between the vertical cable manager and individual network port connections.

2. The horizontal cable manager shall match the rack-mount width of the rack(s)/frame(s).

3. The horizontal cable manager shall attach to the front or rear of the rack/frame with screws and shall be sized to fit in standard EIA-310-D (1-3/4" high RMU) rack-mount spacing.

4. The horizontal cable manager shall be sized to match cabling requirements. Provide a minimum of 1 RMU of horizontal cable management for every 2

RMU of connectivity. Cables must be able to access the cable manager so that no ports are blocked by the cables.

5. A single horizontal cable manager may be used to support multiple patch panels as long as it is sized to match cable fill requirements. Cables must be able to access the cable manager so that no ports are blocked by the cables.

6. The horizontal cable manager shall be a single-sided, rack-mount panel with multiple C-shaped rings to hold cables. A cover will be available as an accessory.

7. The horizontal cable manager shall be delivered individually boxed, and available in the width(s) and height(s) as specified below and in the contract documents.

8. The horizontal cable manager shall be manufactured from steel, aluminum and plastic.

9. Finish shall be epoxy-polyester hybrid powder coat paint in the color as specified below and in the contract documents.

10. Design Make shall be:
    Chatsworth Products, Inc. (CPI),
    Horizontal Cable Managers:

    Part Number 13070-719, 19” Horizontal Wire Management Panel for VCS, Single-Sided, 19”W x 1 RMU x 4” (100 mm) D, with 1.4” (35.5 mm) H x 2.4” (60.9 mm) D Rings, Black.
    Part Number 13075-719, 19” Horizontal Wire Management Panel for VCS, Single-Sided, 19”W x 2 RMU x 4” (100 mm) D, with 3.2” (81.2 mm) H x 2.4” (60.9 mm) D Rings, Black.
    Part Number 11564-719, Large Horizontal Ring Panel, Single-Sided, 19”W x 2 RMU x 6” (150 mm) D, with 2.8” (70 mm) H x 6” (150 mm) D Rings, Black.
    Other colors available. Change -7 P/N to -1 for Gray or -2 for Computer White.

    Part Number 12663-701, Clip-On Cable Cover for 1 RMU 19” Horizontal Wire Management Panel, Black.
    Part Number 12663-702, Clip-On Cable Cover for 2 RMU 19” Horizontal Wire Management Panel, Black.
    Part Number 11764-719, Slip-On Cover for Large Horizontal Ring Panel, Black.
    Other colors available. Change -7 P/N to -1 for Gray or -2 for Computer White.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Vertical Cable Managers

1. Attach vertical cable managers to the side of the rack/frame using the manufacturer’s installation instructions and included hardware.
2. When a single vertical cable manager is used in between two racks/frames, attach the vertical cable manager to both racks/frames.

3. When more than one cable manager is used on a rack/frame or group of racks/frames, use the same make, style and size of vertical cable manager on the rack/frame or in between racks/frames.
4. The color of the rack(s)/frame(s) and cable manager(s) must match.
5. Covers shall be attached to the cable manager after cabling is complete.

B. Horizontal Cable Managers

1. When more than one horizontal cable manager is used on a rack/frame or group of racks/frames, use the same make and style of cable manager on the rack/frame or racks/frames.
2. The color of the rack(s)/frame(s) and cable manager(s) must match.
3. Attach horizontal cable managers to the rack/frame with four screws according to the manufacturer's installation instructions. Each cable manager shall be centered within the allocated rack-mount space (RMU).
4. Horizontal managers shall be located so that the number of ports (cables) that each manager supports shall not exceed each cable manager's cable fill capacity.
5. Covers shall be attached to the cable manager after cabling is complete.