

Outdoor MDU for Direct Drop Connections

Contents

Related Literature	1
Admonishments	1
1. General	2
2. Precautions	2
3. Tools and Equipment Required	3
4. Mounting the Cabinet	3
5. Accessing the Cabinet	3
6. Preparing Connectorized Drop Cable Pigtails	4
7. Preparing Drop Cable Buffer Tubes	5
8. Splicing Drop Cable Fibers to Connectorized Pigtails	6
9. Connecting Subscribers	7
9.1 During Initial Installation	7
9.2 After Initial Installation	8
10. Securing the Cabinet	8
11. Test Access	8
12. Maintenance and Repair Procedures	8
12.1 Maintain the Cabinet	8
12.2 Reenter the Cabinet	8
12.3 Replace Components	8
Glossary	9

Revision History

Issue	Date	Reason for Change
3	09/2006	Added ground lug call-out and grounding instructions, illustrated cabinet with additional radius guide, changed part number for splice tray instruction
2	11/2005	Changed parking location of connectors on front layer, changed from two stacks of splice trays to one stack on bottom layer
1	07/2005	Initial Release

Related Literature

001-290 Instruction, Splice Trays (p/n SCF-ST-126-V) Using Heatshrink Splice Protectors

Admonishments

The precautionary terms used by Corning Cable Systems in its standard recommended procedures conform to the guidelines expressed in the American National Standards Institute document (ANSI Z235) for hazard alert messages. Alerts are included in this instruction based on the following:



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

1. GENERAL

This document describes installation of the Outdoor MDU for Direct Drop Connections manufactured by Corning Cable Systems. This is an interconnect cabinet for multidwelling unit (MDU) applications where drops will be run to the outside wall of the dwelling structure instead of to a handhole or aerial terminal. It is designed to provide service to 48 customers or less.

2. PRECAUTIONS

2.1 Safety Glasses



WARNING: *The wearing of safety glasses to protect the eyes from accidental injury is strongly recommended when handling chemicals and cutting fiber. Pieces of glass fiber are very sharp and can damage the cornea of the eye easily.*

2.2 Chemical Precautions

Isopropyl Alcohol



WARNING: *Isopropyl Alcohol is flammable with a flashpoint at 54° F and can cause irritation to eyes on contact. In case of eye contact, flush eyes with water for at least 15 minutes. Inhaling fumes may induce mild dizziness. In case of ingestion, consult a physician. Use with adequate ventilation.*

2.3 Fiber Precautions



WARNING: *Cleaved glass fibers are very sharp and can pierce the skin easily. Do not let cut pieces of fiber stick to your clothing or drop in the work area where they can cause injury later. Use tweezers to pick up cut or broken pieces of the glass fibers and place them on a loop of tape kept for that purpose alone. Good housekeeping is very important.*

2.4 Laser Handling Precautions



WARNING: *Laser light can damage your eyes. Laser light is invisible. Viewing it directly does not cause pain. The iris of the eye will not close involuntarily as when viewing a bright light. Consequently, serious damage to the retina of the eye is possible. Never look into the end of a fiber which may have a laser coupled to it. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.*

2.5 Cable Handling Precautions



CAUTION: *Fiber optic cable is sensitive to excessive pulling, bending and crushing forces. Consult the cable specification sheet for the cable you are installing. Do not bend cable more sharply than the minimum recommended bend radius. Do not apply more pulling force to the cable than specified. Do not crush the cable or allow it to kink. Doing so may cause damage that can alter the transmission characteristics of the cable. The cable may have to be replaced.*

3. TOOLS AND EQUIPMENT REQUIRED

The following tools and equipment, in addition to the normal complement of tools, are required to complete this installation:

- Can wrench
- Measuring tape
- Buffer Tube splitter (p/n 3206005-01) to remove jacket from pigtail fibers
- Mounting hardware appropriate for the surface upon which the cabinet will be installed
- Heatshrink tubing in sizes appropriate for the cable types being used
- Fiber splicing equipment and supplies for single-fiber splicing

4. MOUNTING THE CABINET

- Step 1** Select an appropriate location for the cabinet to be installed according to your installation plan. Choose a vertical surface near approved ground but away from down spouts, permanent water sprinklers, or other water sources. Ensure the cabinet is easily accessible from the front to allow technicians to connect customers as they subscribe for service.
- Step 2** Using the dimensions from the template in Figure 1, loosely install the mounting hardware into the mounting surface/wall. Leave approximately $\frac{1}{8}$ inch of clearance behind the screw head and hang the cabinet on the hardware through the keyhole openings in the external mounting ears.
- Step 3** Tighten the mounting hardware securely to the mounting surface/wall before installing cable into the cabinet.
- Step 4** Install a #6 AWG ground wire (not provided) to the ground lug as needed per local practices.

5. ACCESSING THE CABINET

Use a $\frac{3}{8}$ -inch can wrench on the security screw to open the exterior door. Then open the second security door inside the cabinet with the can wrench to access the splice chamber.

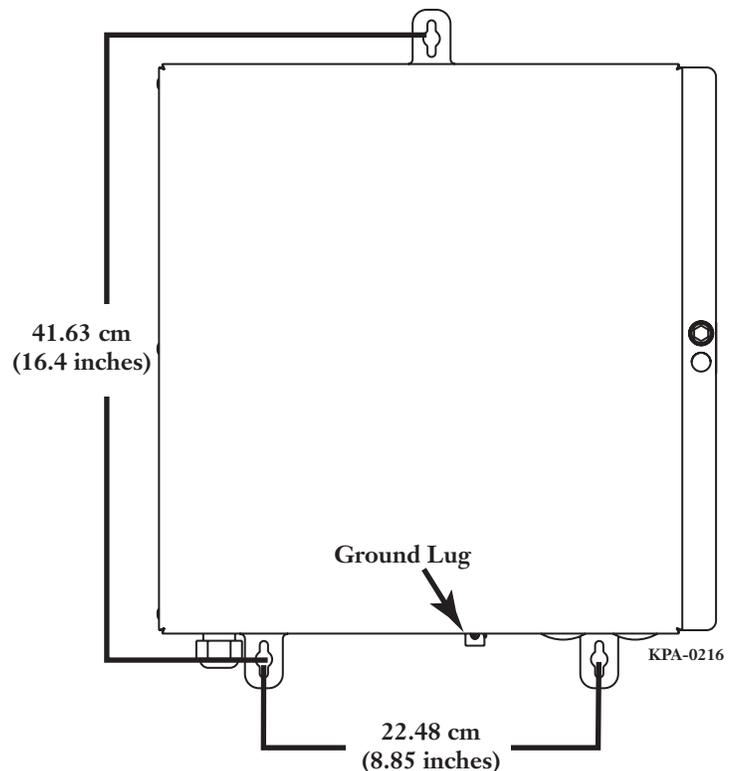


Figure 1 — Mounting Template

6. PREPARING CONNECTORIZED PIGTAILS

Step 1 Route each drop cable pigtail to the splice tray and mark the jacket where the pigtail will enter the tray (Figure 2). Remove each pigtail from the clips in the splice chamber. Pay attention to the direction the slack is routed through the clips. After splicing is complete, you will replace the pigtail slack in the same orientation.

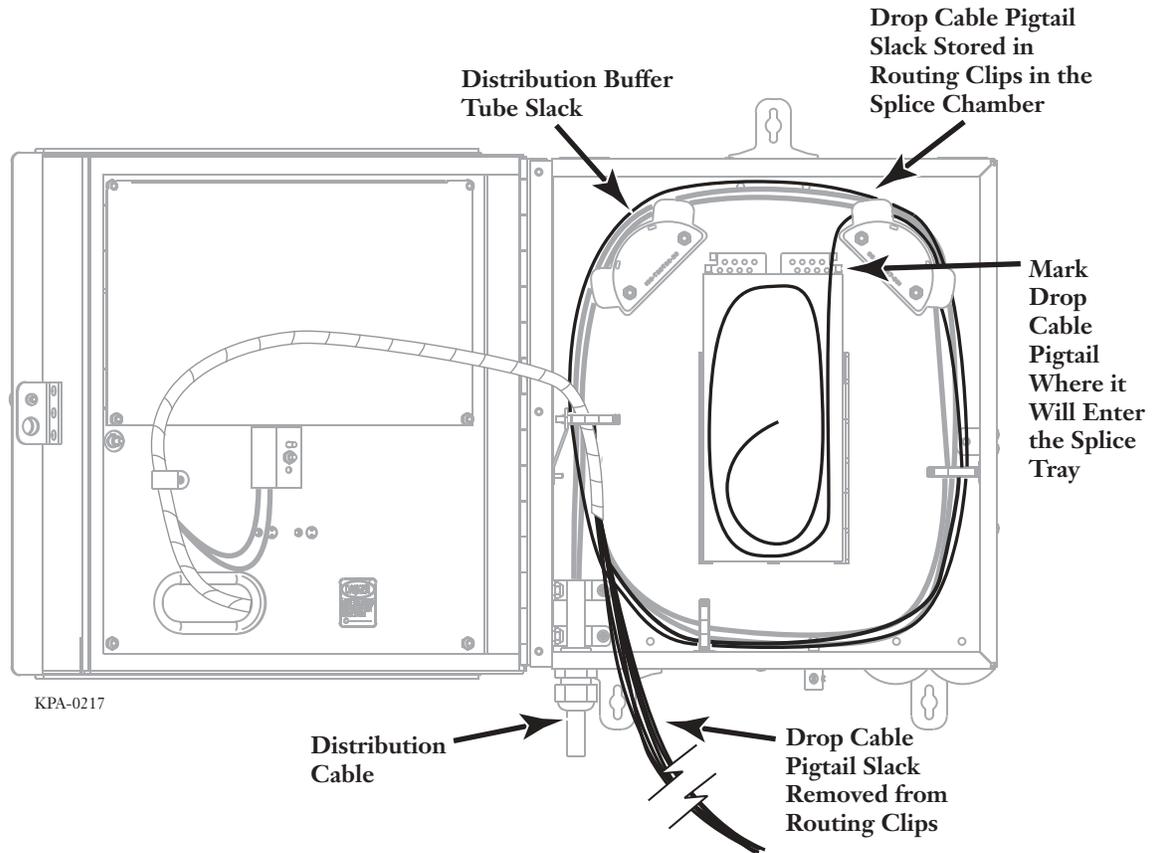


Figure 2 — Mark Pigtail Jacket

Step 2 Refer to the instruction provided with the splice tray to determine the length of jacket to remove from the pigtail in preparation for splicing. Do not expose the bare fiber until you are ready to splice.

7. PREPARING DROP CABLES

- Step 1** Remove one of the rubber plugs from the base of the terminal. Install a fitting and conduit per standard local practices. Feed the drop cable through the conduit into the housing.

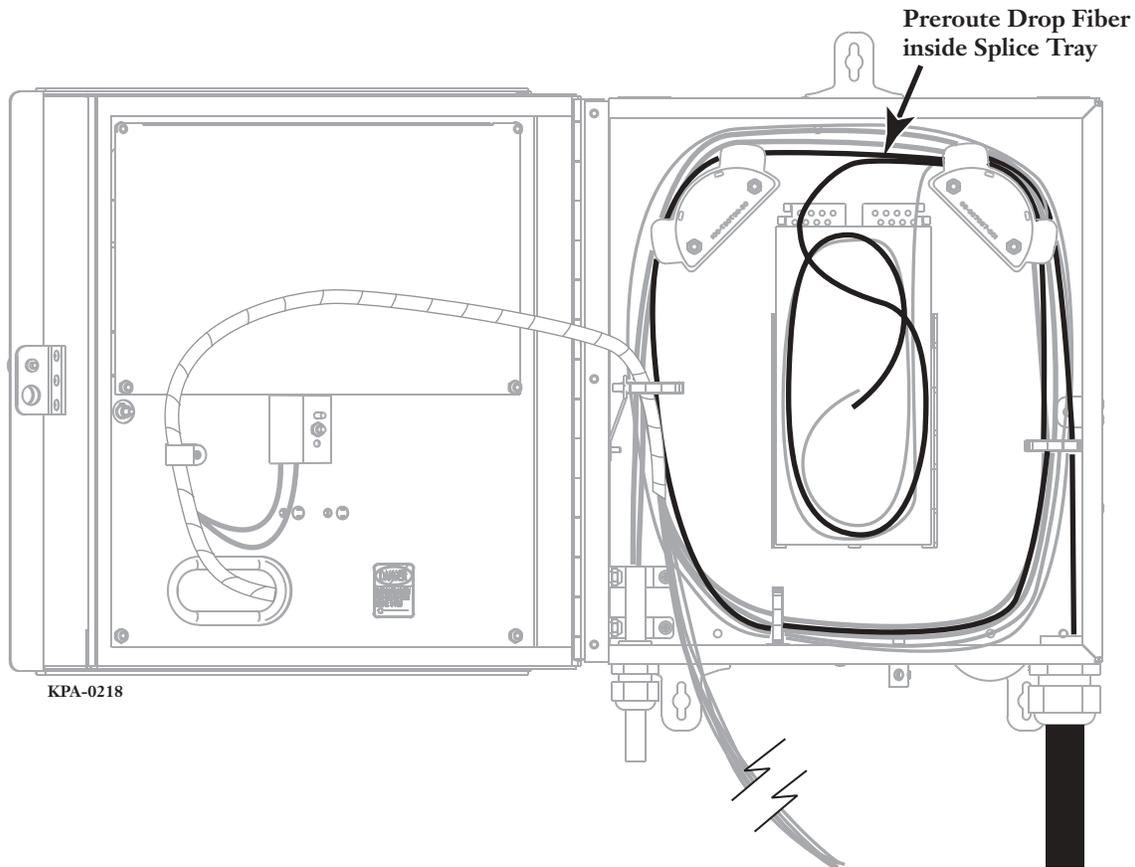


Figure 3 — Feed Drop Cable into Watertight Fitting

- Step 2** Bring approximately 295 centimeters (116 inches) of cable through the conduit into the cabinet (Figure 3).
- Step 3** Preroute each cable through the routing clips in a counterclockwise direction to the splice tray and mark on the jacket where it will enter the splice tray (Figure 3). Continue prerouting two loops of cable inside the splice tray storage area to determine the length of fiber that will be required for splicing inside the tray. Cut the cable at the point where it will be spliced inside the tray. Note that the fiber crosses over to the right upon entering the tray and routes inside the tray in a clockwise direction.
- Step 4** Remove each cable from the clips in preparation for splicing.

8. SPLICING DROP CABLE FIBERS TO CONNECTORIZED PIGTAILS

Step 1 Remove the splice trays from the splice tray holder. Bring the splice trays to a work surface and remove the cover from the first splice tray (Figure 4).

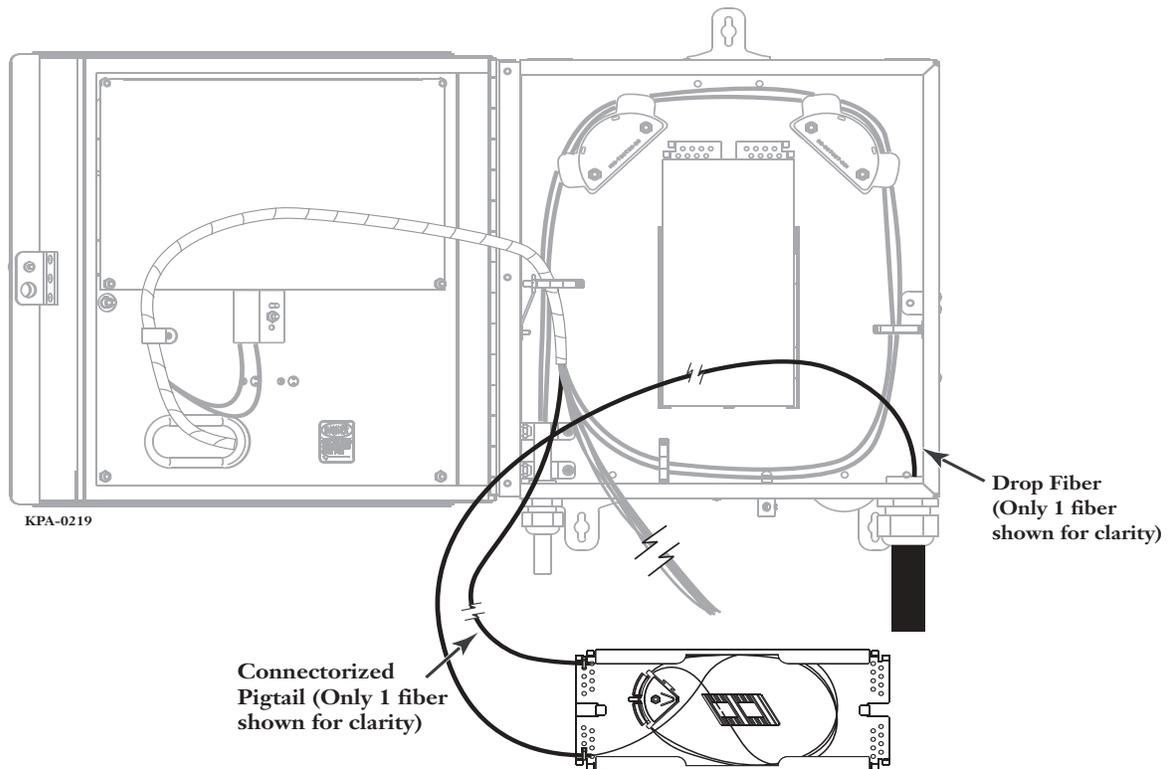


Figure 4 — Splice Drop Fiber to Pigtail Fiber

- Step 2** Bring the loose ends of the drop cable and the connectorized pigtail being spliced to the work surface.
- Step 3** Locate the mark on the drop cable jacket where it will enter the splice tray. Use a Buffer Tube Splitter (p/n 3206005-01) to remove the jacket and expose the bare 900 micron drop fiber. Also remove the jacket from the connectorized pigtail to expose the fiber in it if that was not done in Section 6.
- Step 4** Following SRP 001-290 (provided with the splice tray) and the instructions for the splicing equipment, cleave, clean, and splice the 900 micron drop fibers to the 900 micron connectorized pigtail fibers.
- Step 5** Replace the splice tray cover and return the first splice tray to the splice tray holder.
- Step 6** Repeat Section 8 for the 12 pairs of fibers in each of the other splice trays.
- Step 7** Route slack around the splice chamber as it was prerouted and secure in the routing clips (Figure 5).
- Step 8** Secure splice trays with the hook-and-loop strap provided.

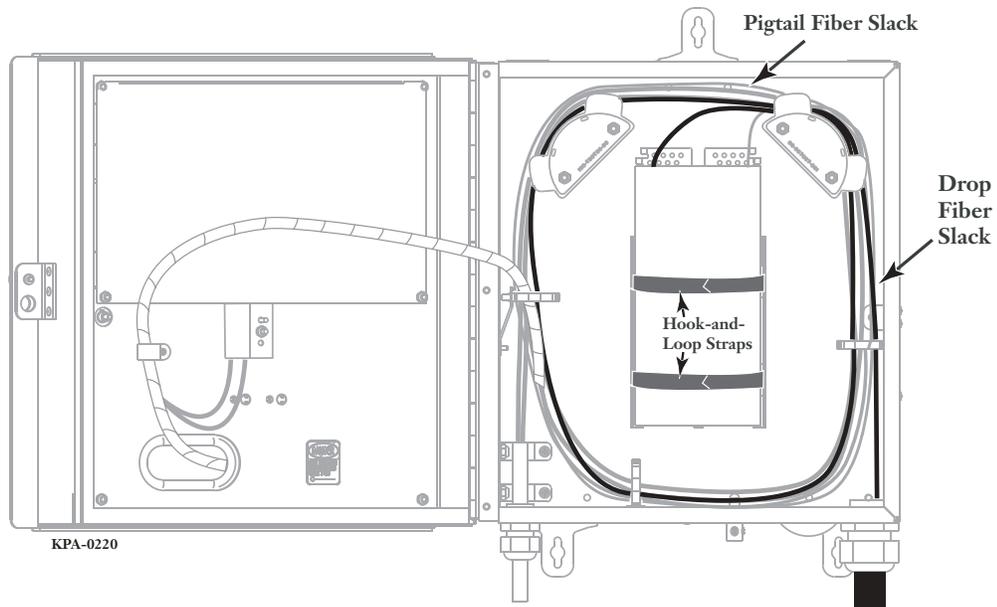


Figure 5 — Route Slack in Clips and Secure Trays

9. CONNECTING SUBSCRIBERS

9.1 During Initial Installation

Step 1 If you are ready to connect subscribers during the initial installation, close and secure the interior door over the splice chamber (approximately 15 in-lb torque).

Step 2 Select the appropriate connector from the parking area (Figure 6). Remove the dust cap and clean each connector per standard local practices before mating.

Step 3 Remove the dust cap from the appropriate connector adapter. Clean each adapter before mating.

Step 4 Align the key on the connector with the key on the connector adapter. Install the connector into the adapter.

Step 5 Record the connector terminations on the label inside the door as they are made.

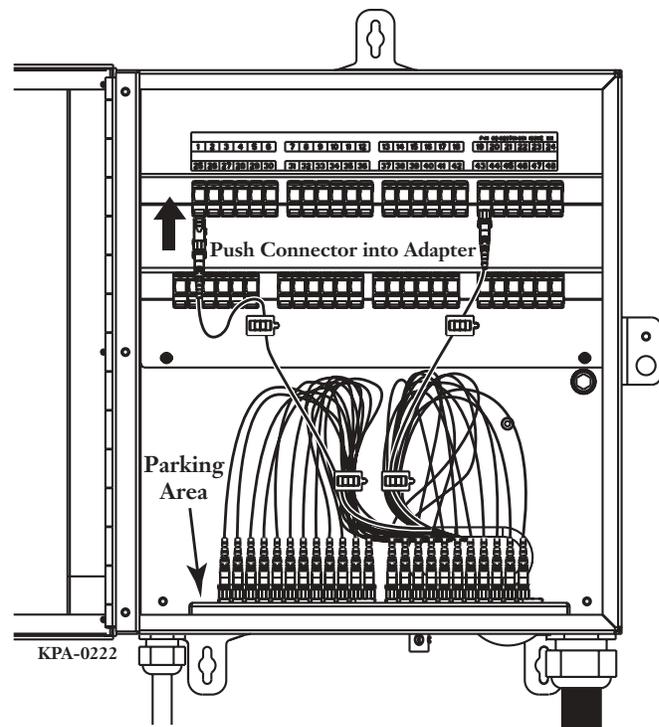


Figure 6 — Plug OptiFit Connector into Adapter

9.2 After Initial Installation

Step 1 If you are connecting subscribers after the initial installation, use a $\frac{3}{8}$ -inch can wrench on the security screw to open the outer door.

Step 2 Then follow steps 2 through 5 in Section 9.1 to connect subscribers.

10. SECURING THE CABINET

Close the outer cabinet door and secure it with the can wrench (approximately 15 in-lb torque).

11. TEST ACCESS

The cabinet provides easy access for performing attenuation or optical time domain reflectometer (OTDR) testing or for troubleshooting. Testing can be performed by manually disconnecting the drop cable connector from the connector adapter to interrupt the signal and then plugging in the test equipment.

A typical test should be performed in the event of loss of service or low performance, at the time of acceptance, at turnover of the product after installation, or to verify the quality of a circuit.

Testing can verify the performance of the circuit from the terminal back to the central office or to any termination points in between.

To perform a test:

Step 1 Locate the connector adapter to be tested and disconnect the drop cable connector from it. Place a dust cap on the connector.

Step 2 Connect a known-good patch cord from the adapter to the test set.

Step 3 Monitor the signal to determine that the measurements meet the required specifications.

12. MAINTENANCE AND REPAIR PROCEDURES

12.1 Maintain the Cabinet

No routine maintenance of this product is required to keep it in operational order. In the event of loss of service or low performance, test the connections as described in Section 11 and reenter the splice chamber, if necessary, to determine which components are defective.

12.2 Reenter the Cabinet

Use a $\frac{3}{8}$ -inch can wrench on the security screw to open the exterior door.

12.3 Replace Components

Contact Corning Cable Systems' Engineering Services at 1-800-743-2671 for instructions to repair or replace broken or defective components.

Glossary

Acronyms

ANSI	American National Standards Institute
OTDR	Optical Time Domain Reflectometer

Terminology

Buffer Tube

Extruded cylindrical tubes within a cable assembly used for protection and segregation of colored optical fibers.

Cable

An assembly of optical fibers and other material providing mechanical and environmental protection for optical fibers.

Connector

A mechanical device used to align and join two fibers together to provide a means for attaching to and decoupling from a transmitter, receiver, or another fiber (patch panel).

Distribution Cables

Originate at the Local Convergence Point and connect many Network Access Points (NAPs)

Drop Cables

Individual cables used to connect each subscriber.

Pigtail

A short length of single-fiber cable, usually tight-buffered, that has an optical connector on one end and a length of exposed fiber at the other end. A tight buffer consists of a polymer coating in intimate contact with the primary coating applied to the fiber during manufacture. Note: The exposed fiber of the pigtail is then spliced to one fiber of a multifiber trunk, i.e., arterial, cable, to enable the multifiber cable to be "broken out" into individual single-fiber cables that may be connected to a patch panel or an input or output port of an optical receiver or transmitter.

