

Figure 1. Dome-Off Interior Backboard Views of the CFDP EPS Series

Fiber Cable Preparation, Termination and Splicing Instructions

for the

Charles® CFDP and CFDP2™ EPS Series of Fiber Pedlock® OSP Pedestals (with 6", 8", or 10" domes)

1. GENERAL

1.1 Document Purpose. This document provides instructions for the fiber cable technician to properly perform fiber CO/feed and drop cable preparations, routings, splicing, and terminations within the Charles Industries' Fiber Distribution Point (CFDP™ and CFDP2™) EPS series of Pedlock® pedestals with 6", 8", or 10" domes. See Figure 1 for interior backboard views of the CFDP EPS series (pedestal domes and bases not shown), see Table 2 for ordering information, and call Charles Industries (Part 3) to order product or to request more information.

- NOTE -

Hereafter all models in the series will be commonly referred to as the "CFDP" or "pedestal." Specific model numbers will be specified or referenced where important differences apply.

1.2 Document Status. When this document is updated, the reason will be stated here.

1.3 Product Purpose and Description. The CFDP is a double-protected (dome within a dome), above-grade, pedestal that offers superior OSP protection against floods, fire, dirt, weather, insects, and impact for fiber-optic, buried, distribution cable splices and customer service drops in FTTP deployments. Double protection (two-stage) is achieved with: (1) a weather-tight yet free-breathing interior enclosure, that is (2) within the confines of a protective, exterior, buried distribution pedestal. The top section of the CFDP pedestal contains an outer dome, which covers and protects an inner dome, which in turn protects the exclusive and interchangeably-designed interior backboard. At the versatile backboard, technicians can route and attach various cables, tubes, splice trays, splitters or other equipment. The bottom section of each pedestal is the base: a square-shaped, expanded-capacity, locking, 2-piece split base designed to support the backboard and to open and easily install around conduit-fed cable bundles or to accept less flexible cables in either new or replacement installations. The CFDP is designed to accommodate various soil and mounting applications, to accommodate loop-through, branch, and stub-in cable deployments, to accept various splice trays and cable-types (preconnectorized, ribbon, or loose buffer tube cables) for both drop or feed cables, to accommodate some fiber slack situations, and to exceed Telcordia GR-771-CORE specifications.

1.4 Product Mounting. The CFDP pedestal base is typically installed in a trench or hole in the ground, up to the ground line indicator on the base, at the FTTP or FTTH distribution point. The pedestal backboard, where all cable preparations are performed (as described in this document), mounts to the base. Once all cable connections are complete, the inner dome is placed over and secured to the backboard to protect all cabling and connections, then the outer dome is placed over and attached to the base, for further protection. The base accepts optional, metallic, mounting stakes or pole-mount brackets (call Charles for information).

2. CABLE INSTALLATION AND SPLICING

The steps in Table 1 help the cable technician to perform all fiber feed and drop cable preparations, routings, attachments and splicing, and presume the following conditions:

- **Cable Architecture/Deployment** - The feed (CO) cable is deployed in a stub-end configuration (a loop-through application is explained in Table 4).
- **Feed Cable** - The feed cable is a loose buffer-tube type with single fibers (important ribbon fiber management tips are provided, since this CFDP accepts ribbon fiber).
- **Drop Cable Design** - The fiber drop cables are a flat-type with a copper tracer wire.
- **Equipment Installation** - The base of the CFDP™ pedestal has been properly installed at the desired field site (for base installation information, see the base installation document factory-attached to the base) and is ready for the backboard.

- **Trench Setup** - The trench is either dug and open, or backfilled, with the feed cable already placed, brought in through the bottom, and exiting out the top of the base.
- **Transportation Tubing** - Clear, protective, and flexible transportation tubing is provided to replace any kink-sensitive or inflexible tubes, to protect the fibers.

For information regarding other CFDP pedestal installation applications, cable types, or cable deployments, contact Charles Industries at the phone number provided in Part 3.

- WARNINGS -

⚠ Risk of serious eye damage! Never look into the end of a fiber optic line/circuit nor use a magnifier in the presence of laser light/radiation. Always exercise caution when installing, testing, or performing maintenance on live circuits. If eye exposure to laser light/radiation has occurred or is suspected, immediately seek medical treatment by a professional eye care physician.

Cable and fiber cleaning solvents may contain hazardous materials or harmful ingredients. Always read and follow the manufacturer's precautions, warnings, and instructions when working with cleaning solvents or products.

Corrugated metal or armor that may be present in feed cables is very sharp when cut or exposed. Exercise extreme caution to prevent personal injury. Use protective work gloves when handling armored cable.

Shards and cleaved glass fibers are very sharp and can easily pierce the skin. Do not let cut fiber pieces stick to your clothing or fall in the work area. Use tweezers to pick up cut or broken fiber pieces and place them on a loop of tape or in a container specifically meant for this purpose. Good housekeeping is important.

- FIBER/CABLE DAMAGE CAUTIONS -

⚠ Buffer tubes and fibers are sensitive to excessive bending, pulling, and crushing forces. To avoid buffer tube kinking and fiber damage or breakage, exercise great care when working with fiber, and do not exceed or violate minimum bend-radius requirements for fibers, buffer tubes, and cables.

- CAUTION -

Perform bonding and grounding before electrical and communications connections.

| Step # | Instruction |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Table 1 - Branch or Stub-End Configuration Installation | |
| 1. | <ul style="list-style-type: none"> □ Obtain tools, materials and equipment. Assemble the following tools and equipment to perform fiber feed/drop cable connections in the installed CFDP pedestal. <ul style="list-style-type: none"> □ 216 tool/can wrench □ Tape measure □ Cable marking tool □ Assorted cable ties □ Labels for cables □ Safety glasses □ Work gloves (optional) □ Grounding materials/tools □ Cable bond clamps □ Slotted screwdriver □ Wrenches or socket set □ Site clean-up tools □ Drop trenching equipment □ Properly installed base of EP series model □ Inner & outer domes and backboard (provided) □ Bag of parts (provided with the pedestal) □ Cable-entry tool or utility knife with hook blade (to cut feed cable) □ Buffer tube stripper tool (to score/cut buffer tubes) □ Isopropyl alcohol & clean rags (to clean fibers) □ Gel removal compound (to clean stripped cables) □ Fiber splicing tools and equipment □ Splice tray and labels for splice tray (one provided) □ Tweezers & tape (for cleaved glass fibers/shards) □ Shovel (to access drop cable hole) □ Proper lengths and types of drop cables |
| Preparing the Pedestal | |
| 2. | <ul style="list-style-type: none"> □ Locate installed base and perform safety test for voltage. Find the CFDP pedestal base installation site and apply or use a company-approved voltage detector or test set on or at all metallic points to verify no stray voltage is present. If voltage is detected, do not proceed and call your manager. |
| 3. | <ul style="list-style-type: none"> □ Inspect the base. Inspect the pedestal base. Verify the base is properly installed in the ground, and that it is not damaged. |
| 4. | <ul style="list-style-type: none"> □ Verify/prepare earth ground. Always follow local codes and company practice when grounding cables/equipment. If an earth ground is not present at the pedestal site and local practice requires an earth ground, prepare one at this time. Do not connect earth ground to the backboard until it is attached to the base. |
| 5. | <ul style="list-style-type: none"> □ Verify sufficient feed cable length. Verify approximately 9 feet of cable, from the ground line to the stub-end of the cable, extends out the top of the base. Position the cable toward the rear of the base (Charles logo is on the front side of the base). <div style="text-align: right; margin-top: 10px;"> <p style="font-size: small;">Approx. 9' Stub End to Ground Line (GL)</p> </div> |
| 6. | <ul style="list-style-type: none"> □ Separate backboard from outer dome. Bring the pedestal domes and backboard to the base installation site, remove any plastic wrappings, and separate the backboard from the outer dome. Allow the inner dome to remain on the backboard. |

7. □ **Attach backboard.** Before attaching the backboard, first verify the CO/feed cable leans toward the rear of the base (the side without the Charles logo), then align the backboard so the drop side (side with the double grommet ports) faces the base front. When the legs are aligned with the guides in the base collar, push down on the backboard until the legs' lock-tabs are engaged (audible clicks indicate proper leg insertion). An orientation guide on one leg prevents reverse installation. If it is difficult to insert the legs, reverse the backboard and try again.

8. □ **Remove inner dome.** If still attached, detach the inner dome from the backboard. Grasp the dome with both hands (at the bottom edge or around the dome perimeter) and pull up on it abruptly to drive the dome top past the round snap fastener on the top of the backboard (causes an audible 'click'). Set the dome aside until needed.

9. □ **Inspect all top pedestal pieces.** Inspect the outer dome, the inner dome, and the backboard for damage. If the equipment is damaged, report the damage to your local salesperson or the transportation company, per company practice.

10. □ **Connect earth ground to the backboard. Always follow local codes and company practice when grounding cables/equipment.** Per company practice, connect a #6 earth ground wire to the ground lug on the bonding plate at the bottom of the backboard. Loosen the ground lug screw, insert the ground wire into the hole at the lug base, hold the wire in place, then firmly tighten the screw. After earth ground is connected to the ground lug, the bond posts can be used to bond cables.

11. □ **Remove plastic bag kit from backboard and verify contents.** Locate the clear, plastic bag that is typically attached to the pedestal backboard and verify the following contents:

- 6 cable ties
- 2 hose clamps
- 2 bond straps
- Document
- 1 splice tray and tray label
- D-clips (recommended for ribbon)

Preparing the Feed or Branch Stub Cable

12. □ **Remove single-port feed grommet.** Feed or CO cable grommets (on the rear side of the backboard) have one port for one feed cable (unlike the drop cable grommets which have two smaller ports each). Pull or slide out one of the single-port feed grommets from the bottom grommet plate.

13. □ **Push cable through grommet.** Push the stub end of the cable through the thin center area of the grommet (at the center of the star shape). Slide the grommet down the cable, stopping near the grommet plate. Rotate the grommet so it is aligned with its slot on the plate, then re-insert the grommet in the plate. Pull up on the cable to reduce excess cable slack.

14. □ **Mark cable for sheathing removal.** Approximately 7.5" of cable sheathing must be removed from the 9' cable stub to expose the fiber to be spliced, but enough cable length with sheathing must remain to attach the cable to the backboard. Locate the cable attachment bar that is directly above the selected feed grommet, pull the cable up until it is almost taut, hold the cable against the bar, and mark a cut-line on the cable 2.5" above the grommet, or about midway up the attachment bar.

15. □ **Slide grommet off plate, for sheathing removal (optional).** If desired, pull the grommet (with the marked cable) off the grommet plate to create room to work and to facilitate the cable sheathing removal and bond clamp installation procedures.

16. □ **Remove cable sheathing.** Always use the tools and methods per company practice to remove the outer cable sheathing from the mark to the cable end. If none exist, score the perimeter of the cable sheathing or make a ring cut (do not go too deep) at the marked location, then find the rip cord(s) at the stub end and pull it or them to split the cable sheathing 1" beyond the score mark. Peel apart the sheathing to the cut line, snap it off, discard the removed sheathing, and trim the cord.

17. □ **Prepare and cut cable armor.** If the cable contains protective metallic shielding or armor, prepare and cut it per company practice to expose the fiber buffer tube under it. **See the boxed warning about corrugated metal/armor before Table 1.**

18. □ **Cut strength members to length.** Per company practice, locate the strength members and cut them off the cable at a point approximately 2" longer than the cable sheathing cut (so only 2" remains).

19. □ **Clean buffer tube.** Per company practice and cable type, find, unwrap, expose, and clean the buffer tube, as needed.

20. □ **Attach bond clamp to feed cable.** Feed cables should be bonded to the pedestal bonding plate. Prepare the cable for bonding by attaching a cable bond clamp (not provided) to the cable shield at the sheath cut. Always follow clamp manufacturer instructions or company practice to select and attach cable bond clamps, as procedures and clamps used to bond cables may vary per location, application, and cable type and size. If taping the cable-clamp junction, leave enough strength member length for termination (see Step 24).

21. □ **Attach one end of a bond strap to the cable bond clamp.** (Skip this step if the provided bond strap is not used, per company practice.) Attach one end of the provided bond strap to the cable bond clamp just installed in Step 20 above.

22. □ **Attach backboard.** If still removed, re-attach the backboard (see Step 7).

23. □ **Re-insert rubber grommet into plate.** If still removed, re-insert the grommet (with the cable running through it) into its slot in the grommet plate. Be sure the grommet is fully seated in the slot, to augment the weather-tight seal. When performing the next step, slide the cable up or down the grommet, as needed.

24. □ **Terminate strength members.** Perform this step in conjunction with Step 25 for the best vertical cable alignment on the cable attachment bar. Terminate any strength members per company practice, or as stated herein. First loosen the hex nut in the strength member clamp. Next, slide the strength members under the clamp until they abut the attachment bar's top flange. If necessary, trim the strength members to attain the best vertical position against the bar. Hold the cable in place and firmly tighten the strength member clamp.

25. □ **Secure cable to backboard's cable attachment bar.** Secure the cable to the cable attachment bar by opening and firmly affixing the provided hose clamp around both the cable and the cable attachment bar at the bottom "tooth" area of the bar (see the teeth in Step 14). Verify the cable sheath cut line is approximately halfway up the bar. Adjust strength member length if needed, and tighten the hose clamp.

26. □ **Bond cable to bonding plate.** Regardless of the type of bond strap used, finish bonding the cable by attaching the free end of the bond strap to a bond post on the bonding plate (see plate in Step 10). Flex and route the strap as necessary to fit, then firmly secure it to a bond post.

27. □ **Route fiber to pedestal front.** Route the buffer tube up through the bottom opening of the fiber basket, to bring it to the front side of the backboard.

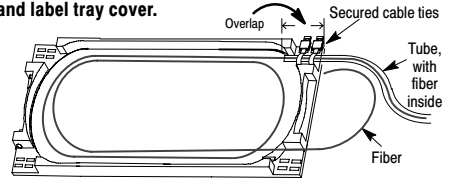
28. □ **Cut to length then remove buffer tube.** Surplus or a working-slack length of buffer tube is typically looped inside the surplus fiber basket, and a length of buffer tube is typically removed from the tube's stub end to expose the fiber which will be stored in the splice tray. These buffer tube and exposed fiber slack or storage lengths are determined per company practice and equipment manufacturer instructions. Determine the desired length of buffer tube to store in the surplus fiber basket (considering also the desired length of exposed fiber), using local company procedures and tools, and being careful to avoid the fiber inside the tube, make a mark at the desired tube cut-line, then score the perimeter of the tube at the mark and remove the length of surplus tube and discard it.

29. □ **Clean fibers.** Per company practice, clean the fibers.

30. □ **Wrap and loop the tube in the basket.** Wrap or loop the length of surplus tube around the inside perimeter of the basket. Secure the tube to the basket's inside walls with cable ties as it first enters the basket. Do not secure the last 2-3 feet of tube. After the tube is attached to the splice tray in Step 33, this unsecured length allows the splicer sufficient tube slack when accessing the splice tray.

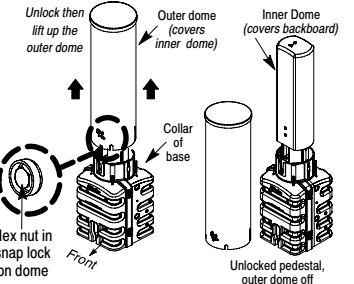
31. □ **Prepare a splice tray for tube attachment.** Prepare a splice tray (provided): remove the cover and insert 2 cable ties at the top left tray corner (when secured to the basket) using the innermost tie-down slots.

32. **Attach buffer tube to tray.** Overlap the end of the buffer tube onto the splice tray corner (see Step 33), and secure the tube to the tray with the two positioned cable ties. The overlap distance is determined per company practice and tray manufacturer instructions.
33. **Store fibers in splice tray, and label tray cover.** Per company practice, wrap and store the fiber in the tray for later use. Locate and fill out the tray label, and attach the label to the cover.
34. **Label the tube.** Label the tube near the tray and sheathing cut, per company practice.
35. **Determine next step.** If drop cables are not installed now, perform Steps 62-68 to perform tube management, to secure the splice tray, to perform pedestal housekeeping, and to close the pedestal. Go to Step 36 if drop cables are installed now.

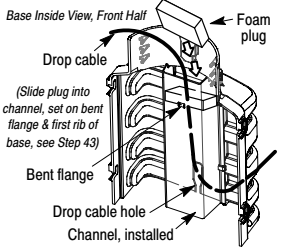
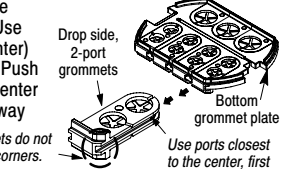


Installing Fiber Drop Cables

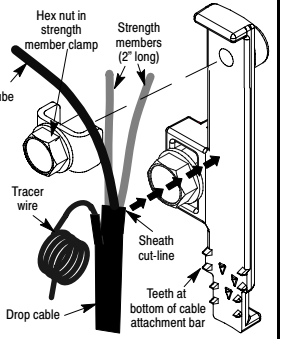
36. **Dig trench from premises to pedestal.** Per company practice, prepare a trench to run the drop cable from the customer premises to the pedestal. Clear the soil from the bottom front of the base, where the cable enters at the drop cable access hole.
37. **Open pedestal (if closed).** If the pedestal is closed and locked, unlock the outer dome with a 216 tool or can wrench. Turn the hex nut in the outer dome's snap lock 1/4-turn counterclockwise, hold it in that position, then lift up on the dome.
- Remove inner dome.** Remove the inner dome by performing Step 8.
38. **Route the drop cable through trench.** Starting from the customer premises/NID box, route the drop cable through the trench to the pedestal base.
39. **Route the cable through the base drop channel.** Per company practice, route the drop cable through the drop cable access hole at the bottom front of the base and carefully push it up through the drop channel (or conduit). At the top of the channel, guide the cable between the installed foam plug and the back wall of the channel. *If the plug dislodges during cable routing, wait until all drop cables are routed into the base and re-install the plug, as described in Step 43.*
40. **Allow proper length of drop cable.** Per company practice, verify 9' (min.) of drop cable extends up past the base's ground line mark. Mark and cut the cable at the desired length.



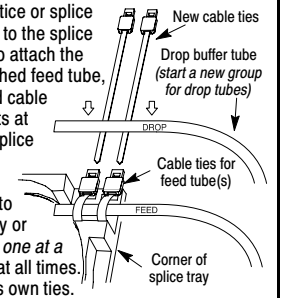
41. **Route cable through grommet.** The front/drop side rubber grommets contain two holes or ports each. Use the innermost ports first (closest to the pedestal center) for best hand mobility and drop cable management. Push the stub-end of the drop cable through the bottom center of the selected grommet port. Pull the cable all the way up through the grommet.
42. **Route all drops to pedestal.** Repeat Steps 36 through 41 above for all drops ready to be routed or placed in service at this time.
43. **Install or inspect foam plug.** If the channel's foam plug dislodged during any drop cable entrance (see Step 39), re-install it by placing it in front of the cables (cables at the back of the channel), angling the plug's front edge down toward the first rib of the base front, and sliding it down until it rests on top of the first rib. Press down on the plug's back edge until it rests on the bent flange at the rear of the channel.
44. **Backfill the trench and replace the sod.** For a safe and orderly work area, restore the backfill and sod around the base and at the trench, per company practice.
45. **Mark drop cable for sheathing removal.** Locate the cable attachment bar directly above the drop cable's grommet, hold the drop cable in its proposed final position up against the bar, and mark the cable midway up the bar (approximately 2.5" above the grommet).
46. **Separate tracer wire.** If a tracer wire is attached to the drop cable, per company practice, use needle-nose pliers or the tool of choice to separate it and pull it down the cable to the marked location. Trim off all but 4 inches for later use. Optionally coil and point the 4" wire toward the pedestal center, away from the working area. *Note: Flat drop cable tracer wire is intended for locating, not grounding, purposes.*
47. **Remove cable sheathing and open the cable.** Cut and remove the drop cable sheathing from the end of the cable to the cut mark, per company practice. If none exists, score the cable sheathing at the cut mark, slice off a piece of sheathing at the cable end to find the rip-cord, pull the cord to the mark, and peel off the sheathing. Trim any KEVLAR® and the rip-cord at the sheath cut-line. Trim any cable strength members per company practice or Step 50.



48. **Label drop tube.** To facilitate future cable identification during splicing, troubleshooting, or rework, label the drop tube per company practice. Charles recommends labeling the tube near the attachment bar and near the splice tray.
49. **Trim strength members.** If the cable contains strength members, trim them now but retain enough length to attach them to the backboard, per company practice.
50. **Secure strength members.** (Perform this step in conjunction with Step 51 to secure the cable at the correct vertical height on the bar.) Per company practice, terminate any strength members in the strength member clamp at the top of the cable attachment bar. Loosen the hex screw on the clamp, slide the strength members under the clamp, raise or lower the cable until the sheath cut mark is aligned with the vertical center of the cable attachment bar, and if needed, trim the strength members at the precise point where they abut the top flange of the cable attachment bar. While holding the strength members under the clamp, firmly tighten the clamp. Do not pinch or secure the fiber tube under or in the clamp.



51. **Secure cable to attachment bar.** Verify the cable sheath cut-line is half-way up the cable attachment bar (above the "teeth"), then wrap a cable tie around the cable and the bar at the bar bottom where the teeth are located. The teeth help hold the cable in place. Double the tie over the cable, crisscross it (in a "Figure 8"), and tighten the tie in this position, securing the cable to the bar.
52. **Repeat for all drops.** Repeat Steps 45 through 51 above for all available drops.
53. **Free and prepare the splice tray.** Release the splice tray from the VELCRO® strap(s) holding it. Lift the tray and fiber loop over the bend-radius control guide. Prepare the tray for drop tube group attachment by inserting two plastic cable ties down through the middle cable tie-down slots, at the same tray corner where the feed tube is tied (see Step 60).
54. **Secure each drop tube then bundle all tubes.** After all drop tubes are secured to their attachment bars, separately tie each one to a tie-down slot on the inside wall near the bottom of the surplus fiber basket. After each tube is secured, gather or bundle all the tubes together for joint tube routing and tray attachment purposes. Gather all tubes just above their tie-down locations, and tie them together (as a bundle) with cable ties at short intervals. *If the pedestal serves more than 6 drops, and company practice allows only 6 drops per splice tray, create and use a second drop tube bundle and tray.*
55. **Extend bundle, and join drop bundle with feed tube.** Without kinking any tubes, route the drop bundle alongside the feed tube and affix cable ties around all tubes (drop tube bundle and feed tube) at regular intervals, per company practice.
56. **Mark the drop tubes' cut-lines.** Allow the drop tube bundle to overlap the splice tray at the same tray corner where the feed tube is tied. Mark a cut-line on each drop tube at the same length or location as the feed tube cut-line, so all tubes will be the same length.
57. **Cut drop tubes, to expose fibers.** Per company practice and without cutting or damaging the fibers inside, cut each drop tube at the mark, and gently remove the surplus tube length. All drop tubes should now be the same length as the feed tube, leaving a company-approved length of exposed fiber for placement and storage in the splice tray.
58. **Clean fibers.** Per company practice, clean the exposed drop cable fibers.
59. **Remove tray cover.** If not already removed, remove the splice tray cover.
60. **Tie drop tube bundle to the tray.** Per company practice or splice tray manufacturer instructions, secure the drop tubes to the splice tray. Charles recommends using two new cable ties to attach the drop tube bundle to the same tray corner as the attached feed tube, as described in Step 53. Firmly tighten each prepared cable tie around the drop tube bundle and the tie-down slots at the tray corner. The amount of tube overlap into the splice tray is determined per company practice and tray manufacturer instructions. If another drop is added in the future, secure it at the same tray corner to the drop bundle, but maintain the drop bundle integrity or unity by replacing the existing bundle's two cable ties one at a time, so at least one tie affixes the bundle to the tray at all times. Always separately tie the feed tube to the tray, with its own ties.



61. **Determine next step.** If splicing will be performed at this time, go to Step 69. If splicing is not performed now, continue with Step 62.

Closing the Pedestal

62. **Store fiber in splice tray, complete label, and attach cover.** If splicing will not be performed, wrap the drop fibers in the splice tray (as in Step 33), per company practice. Fill out the label on the cover, and carefully attach the cover to the tray.
63. **Perform tube management and secure tray.** Carefully wrap (in a counterclockwise direction) and loop the feed/drop tube bundle into the surplus fiber basket, allowing the tray and tubes to freely rotate as needed to avoid any bending or kinking of the tubes (which can cause fiber damage). Never force tubes into place. The final tube bundle loop should hang over the bend-radius control guide. Secure the hanging tray in place with the VELCRO® straps provided. Verify the label is not upside-down.
64. **Perform pedestal housekeeping, and install inner dome.** Verify all tubing is neat, not kinked, and that no cables, ties, clamps, or tubes protrude beyond the backboard walls. Press all grommets into place. Lift then slide the inner dome down over the backboard, guide it past the splice tray tab to the grommet plate. Align the dome's top hole with the backboard's top snap and push down on the dome until the snap goes through the dome hole with a clicking sound.

65. **Check foam plug.** Verify the drop channel's foam plug is properly installed (see Step 43).
66. **Close the pedestal.** Locate the outer dome and orient it so the snap lock faces the front (base front has the Charles logo). Slide the dome down over the backboard, align the dome's snap lock with the base's latch catch mechanism, and allow the self-locking dome to drop down in place. An audible "click" indicates the dome is locked.
67. **Label outer dome.** Place all ID/warning labels on the dome, per company practice.
68. **Clean up work site.** Clean up the work area, properly dispose of all debris, and locate and put away all tools and work materials, all per company practice.

Splicing Fibers in the Pedestal

69. **Obtain tools.** Prepare the area for splicing, assemble and prepare any equipment and tools needed to splice fibers. Review all cautions and warnings.
70. **Open pedestal and access the backboard.** If the pedestal is locked and secured, open the pedestal per Steps 37 and 8.
71. **Remove the splice tray from the backboard.** Loosen the VELCRO® straps that secure the splice tray, and carefully unwind the tray and the bundled tubes attached to it, allowing the tray to freely rotate. Detach the clear plastic cover from the tray.
72. **Perform splicing.** Unwrap the working fibers to be spliced, perform all fiber splicing at this time, and when complete, route and place all fibers back into the splice tray, all per local/company practice and product manufacturer's instructions.
73. **Label and identify splices/tray.** Per company practice, label or identify the splices.
74. **Cover splice tray.** Re-attach the cover to the splice tray.
75. **Secure tray.** See Step 63 to re-secure the splice tray to the backboard.
76. **Close the pedestal.** Perform Steps 64 through 68 to carefully close up the pedestal.

Table 1. Branch or Stub-End Configuration Installation

| Model # | CFDP2™ Description |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CFDP206-EPS | CFDP/CFDP2™ Pedlock® OSP Pedestal, with a 6" diameter, locking, exterior dome and weather-tight interior dome, a square, 2-piece, expanded-capacity split base, a removable backboard, 3 single-port 1" diameter feed grommets and 4 double-port 0.625" diameter drop grommets for 8 drops, a splice tray and bond plate. Includes all equipment shown to the right, and a transportation tube. |
| CFDP208-EPS | Same as above but with an 8" diameter dome, 4 single-port 1" diameter feed grommets, and six 0.625" diameter double-port drop grommets for 12 drops. |
| CFDP10-EPS | Same as above but with a 10" diameter dome, 3 single-port 1" diameter feed grommets, twelve 0.625" diameter double-port drop grommets for 24 drops, and a 2nd transportation tube. No D-clips. |

Riser Pipes & U-Guards

- 119 series (7/8" risers)
- 122 series (7/8" U-guards)
- 219 series (1.25" risers)
- 222 series (1.25" U-guards)

- Strong durable solution for protecting wires that are mounted to buildings and utility poles
- PVC construction: lightweight and easy to cut
- Various bends, lengths, offsets, and notches
- Available in 7/8" and 1.25" diameters

Options, kits, and replacement parts are available. Contact Charles Industries for more information.

Table 2. Model Numbers and Ordering Information

| Feature | 6" dome model | 8" dome model | 10" dome model |
|------------------------------------|---------------|---------------|----------------|
| Height, overall | | 42.75 in. | |
| Height, base only, incl. collar | | 18 in. | 18.5 in. |
| Height, outer dome only | | 28.5 in. | |
| Height, base bottom to ground line | | 8.5 in. | |
| Height, dome top to ground line | | 34.25 in. | |
| Depth, base (front to back) | 9.75 in. | 10.8 in. | 12.8 in. |
| Width, base (side to side) | 10.25 in. | 11.75 in. | 13.9 in. |
| Diameter, base collar, I.D. | 6.2 in. | 7.7 in. | 10.3 in. |
| Diameter, dome, O.D. (not the cap) | 7.1 in. | 8.6 in. | 11.25 in. |
| Weight | 18 lbs. | 21.5 lbs. | 25 lbs. |

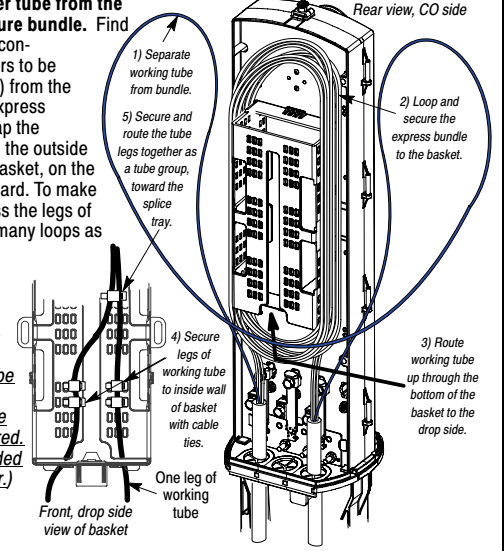
NOTE: All dimensions and weights are approximate.

Table 3. Physical Specifications

| Step # | Table 4 - Loop-Through Configuration Installation |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> | Prepare the pedestal. Perform Steps 1 through 4 of Table 1. |
| 2. <input type="checkbox"/> | Verify sufficient feed cable length. Verify approximately 15 feet of looped feed cable length, ground line to ground line, is available at the pedestal base, and bring it up and out of the base. Position the cable toward the rear of the base (the Charles logo is on the front side of the base). See the base installation document for base installation instructions and routing cables into the base. |
| 3. <input type="checkbox"/> | Finish pedestal preparation. Perform Steps 6 through 11 of Table 1. |
| 4. <input type="checkbox"/> | Remove feed side grommets. Perform Step 12 of Table 1, but remove the two, outer, feed-side grommets (not just one). |
| 5. <input type="checkbox"/> | Prepare grommets. Each grommet has a notch at the rounded end. With the tool of choice, slice into the grommet (to the center of the port's star shape) at the notch. |



6. **Install grommets.** A looped cable has two "legs"; a feed-side leg from the CO, and a field-side leg to the customer. At a point on each cable leg about 18" above the ground line, press the cable leg into the sliced grommet, until the thick cable fills or occupies the round port area of the grommet. Rotate the grommet so the round end faces the center of the backboard, and slide the grommet into its slot in the grommet plate. While holding the grommet in place, slide or pull the cable leg up or down slightly until the cable is almost taut (leaving a slight amount of slack under the grommet). Repeat for the other cable leg.
7. **Mark cable for sheathing removal.** Press and hold one cable leg against the lower part of the backboard. At the outermost cable attachment bar, directly above the selected grommet, make a mark on the cable halfway up the 3" high cable attachment bar (approx. 2.5" above the grommet). Repeat for the cable loop's other leg. The outer cable sheathing will be removed between these two marks, to access the buffer tube and fiber inside the cable. The cable will be secured to the attachment bar just below the outer sheathing cut.
8. **Prepare and attach cable.** For each cable leg, perform Steps 15 to 26 of Table 1 to cut, remove, and prepare the cable sheathing, armor, and strength members, to clean the tube(s), and to bond and attach the cable legs to the backboard. Be careful not to cut or damage any fiber(s) in the tube(s), and always follow company practices.
9. **Separate working fiber tube from the tube bundle, and secure bundle.** Find and separate the tube containing the specific fibers to be spliced ("working tube") from the loop-through tubes ("express bundle"). Loop and wrap the express bundle around the outside perimeter of the fiber basket, on the rear side of the backboard. To make a loop, gently crisscross the legs of the bundle. Create as many loops as needed (3 or 4), then secure the express bundle to the backboard with cable ties secured via slots in the fiber basket walls. (Note that D-clips can be used and inserted into small round holes in the backboard wall, if desired. D-clips are recommended when using ribbon fiber.)
10. **Remove splice tray.** Loosen the velcro straps and remove the splice tray.
11. **Route working fiber tube to drop side and secure tube to basket.** Route the working fiber tube all the way up through the bottom of the fiber basket, to bring the tube to the backboard's drop side. Just above each tube's basket entrance point, use cable ties to secure each tube to an inside wall of the basket.
12. **Join tubes.** Once each tube is secured to the basket wall, join both tubes together with cable ties placed around them at short intervals, to make one tube group. Do not join the last couple feet of tube.
13. **Determine tube cut-line.** Per company practice, before cutting the tube, first determine how long the tube legs should be to provide adequate slack storage in the fiber basket before being routed over the bend-radius control and attached to the splice tray (in its final secured position). Wrap or loop the tube several times inside the basket, bring the last loop up and over the bend-radius control, and make a mark on both tube legs where they overlap the splice tray (when the tray is secured with Velcro straps). Leave or measure enough tube slack length to enable easy future splice tray access, and remove enough tube to expose the proper amount of exposed fiber for splicing and storage purposes inside the splice tray. Hold the tubes against the splice tray where they overlap the tray corner, and mark them at the desired splice tray entrance point.
14. **Score then remove working buffer tube.** Using local company procedures and tools, and being careful to avoid damaging the fiber inside the tube, score the perimeter of the tube at the marks, slit the tube between the marks to expose the fibers, and remove the length of slit tube.
15. **Clean and cut fibers.** Per company practice, clean the fibers, then cut only the desired working fibers midway between the tube ends. Do not cut any express fibers.
16. **Attach tubes to tray, store fibers, and determine next step.** See Steps 31-35 of Table 1 to finish the feed cable preparation and to determine the next procedure. Attach both feed tubes to the splice tray as a group, when performing Step 32. Manage and label dead fibers per company practice. Store uncut express fibers in the splice tray.



10. **Remove splice tray.** Loosen the velcro straps and remove the splice tray.
11. **Route working fiber tube to drop side and secure tube to basket.** Route the working fiber tube all the way up through the bottom of the fiber basket, to bring the tube to the backboard's drop side. Just above each tube's basket entrance point, use cable ties to secure each tube to an inside wall of the basket.
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Table 4. Loop-Through Feed Cable Configuration Installation

3. CUSTOMER TECHNICAL SERVICE

If technical assistance or customer service is required, contact Charles Industries at:

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| 847-806-8500 (Tech. Service local) 800-607-8500 (Tech. Service toll-free) 847-806-8556 (Tech. Service FAX) techserv@charlesindustries.com (email) | 847-806-6300 (Customer Service) 847-806-6653 (Customer Service FAX) mktssrv@charlesindustries.com (email) www.charlesindustries.com (website) |
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