

CORNING

Furcation of a Central Tube Ribbon, Gel-Free, Non-Armored, 96- to 192-Fiber Cable into an OSE-UD

P/N 004-277-AEN
Issue 1

related literature | Search www.corning.com/opcomm. Click on “Resources.”

1. Initial Decisions

1.1 Measure Access Length

Route a piece of braided mesh tubing $\frac{1}{4}$ -in ID inside the Optical Splice Enclosure (OSE) following the path the fiber will take from the entry point to the splice tray location and measure the length as shown in Figure 1. Then add 4 ft to that measured length. This will be the cable access length. Write down the access length = _____.

2. Material Preparation

2.1 Kit Contents

2.1.1 HFC-FURC-KIT-C

The kit contents are shown in Figure 2.



Figure 2

1. Ribbon funnel kit (1)
2. Heat-shrink tubing 34/7 X 160-mm (2)
3. Silicone – DC 734 sealant (1)
4. Ribbon transport tubing (50 ft)
5. 3M 4460-D ground clamp (1)
6. Adhesive aluminum foil 100-mm X 250-mm (1)
7. 60 grit sandpaper (1)
8. Braided mesh tubing $\frac{1}{4}$ -in ID (20 X 10 ft)
9. Heat-shrink tubing 13-mm ID X 2-in L (1)

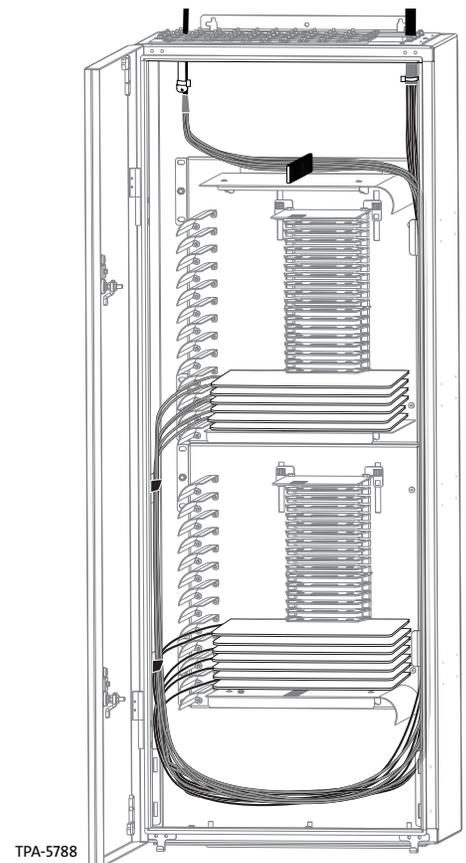


Figure 1

2.2 Other Materials (not included in furcation kit)

- Viscous silicone with syringe applicator
- Electrical tape
- Masking tape
- Friction tape
- Book of electrical numbers
- 90 percent or higher isopropyl alcohol
- Cable solvent or cleaner
- Shop towels
- 4-in cable ties
- Cable retention strap

2.3 Tools

- Cable access tool: hook-blade, universal access tool (UAT3-000), large coaxial cutter
- Ribbon splitting tool (RST-000)
- Scissors/snips
- Permanent marker black/silver
- Heat gun
- Extension cord

2.4 Cut Materials

Step 1: Cut 3 piece(s) of ribbon transport tubing 5 in long as shown in Figure 3. Hold the ribbon transport tubing as flat as possible while cutting as it is subject to preferential bending.



Figure 3

Step 2: Cut braided mesh tubing $\frac{1}{4}$ -in ID to access length measured in [Section 1](#). Cut 3 pieces.

3. Cable Access

Step 1: Refer to Corning Optical Communication's Standard Recommended Procedures (SRPs) 004-072 for cable access and stripping instructions.

Step 2: Install cable and Cable Entry Kit into OSE per SRP 003-1032-AEN (Ultra-Density Optical Splice Enclosure) and SRP 003-1036-AEN (Cable Entry Kit—OSE-UD).

Step 3: Mark the cable with the permanent marker at the access length measured in [Section 1](#). Access the cable per the instructions in SRP 004-072.

4. Ribbon Splitting and Grouping

4.1 Ribbon Splitting

Step 1: If the cable only has 12-fiber ribbons proceed to the next section.

Step 2: Split ribbons into 12-fiber ribbons. Refer to SRP 004-098 for directions on using the ribbon splitting tool (RST-000).

Step 3: Use the ribbon splitting tool (RST-000) to split the 24-fiber or 36-fiber ribbons into 12-fiber ribbons for the first 6 in.

Step 4: Place your finger in between the two 12-fiber ribbons you want to split with one ribbon on top and one ribbon on the bottom of your finger. Then drag your finger between the ribbons towards the access point of the cable furthering the split between the ribbons. Alternate the ribbons on your finger about each foot or if you see the ribbon matrix peeling up, see [Figure 4](#).

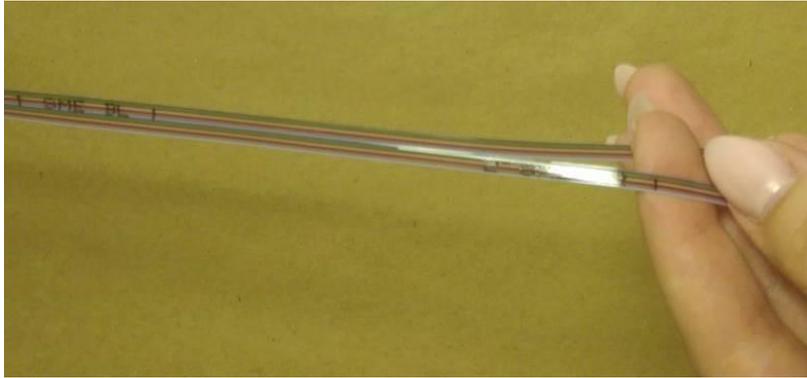


Figure 4

4.2 Ribbon Grouping

Step 1: As you group the ribbons it is recommended to keep the groups in the order that they come out of the cable.

- Notice how the ribbons form a stack and try to maintain this stack. This will be helpful during the furcation process later on.

Step 2: Group the ribbons into as many bundles of six ribbons as possible. Group any remaining ribbons together in the final bundle.

Step 3: Group in ascending order starting with ribbon 1 then 2 until you get to 6 for the first bundle. Bundle them together with masking tape as seen in [Figure 5](#).

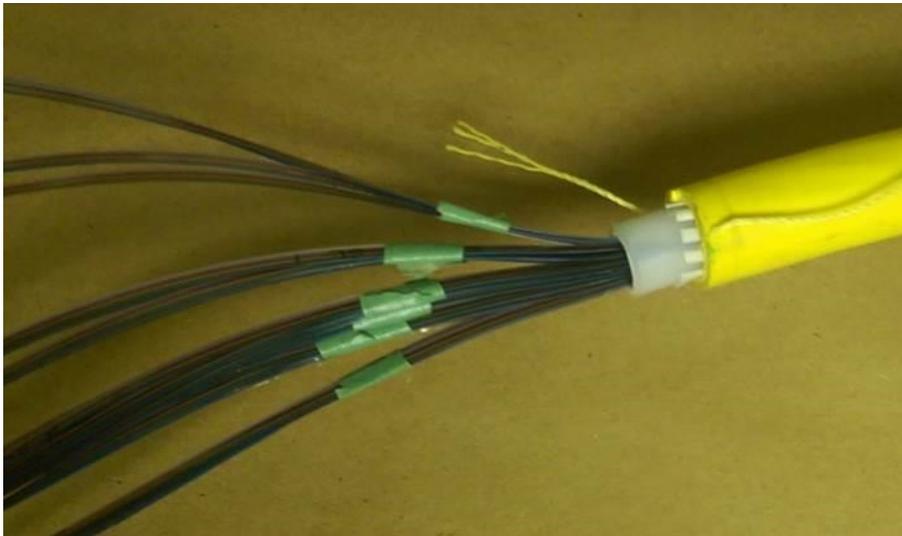


Figure 5

Step 4: Continue grouping in groups of 6 until you have grouped all ribbon(s). Secure the end of each bundle with masking tape to preserve the ribbon order.

Step 5: Slide heat-shrink tubing 34/7 x 160 mm past cable jacket for use later in the process.

Step 6: Leave the cap off of ribbon funnel kit when installing it on the cable.

5. Furcation

5.1 Furcation Plug

Step 1: If the cable is outside plant cable, use the 60 grit sandpaper to scratch up 1 in of the end of the cable jacket.

Step 2: Feed the ribbon bundles through the ribbon funnel kit and slide the ribbon funnel kit down so it overlaps with the cable jacket $\frac{1}{2}$ in.

Step 3: If the ribbon funnel kit inside diameter is larger than the outside diameter of the cable, use electrical tape to build up the outside diameter of the cable jacket so the ribbon funnel kit fits on the cable jacket.

Step 4: Use electrical tape to secure the end of the ribbon funnel kit to the cable jacket.

Step 5: Insert the bundles of ribbon into the funnel cap in the positions shown in [Figure 6](#).

- This ordering is required to prevent the ribbons from twisting inside the ribbon funnel kit which will induce binding and cause attenuation issues.

Step 6: Slide the funnel cap down the ribbons and press it into the ribbon funnel kit. The cable should now appear as in [Figure 7](#).

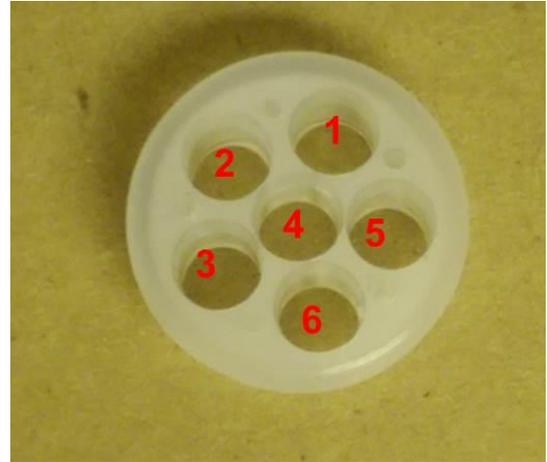


Figure 6



Figure 7

Step 7: Slide a piece of 5-in long ribbon transport tubing down the length of each ribbon bundle and insert it inside the cap.

- The cap may need to be taken out of the ribbon funnel kit for this step and then put back in when all the 5-in long ribbon transport tubing are inserted.
- The 5-in long ribbon transport tubing should extend $\frac{1}{2}$ in inside the ribbon funnel kit as in [Figure 8](#).
- Double check that there are no bends or twists on the ribbon(s) inside the ribbon funnel kit.

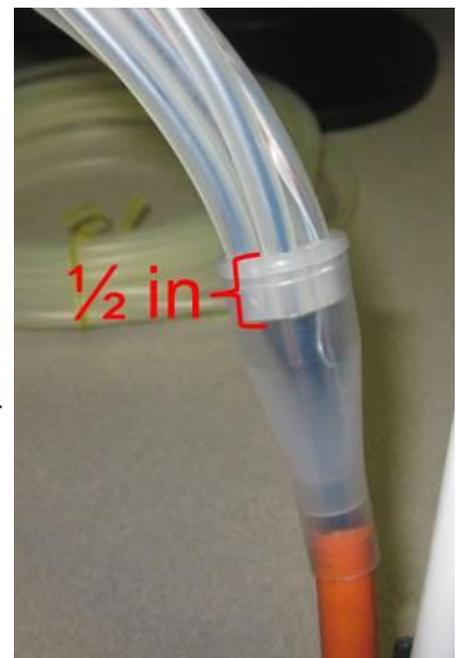


Figure 8

5.2 Furcation Bundling

Step 1: Slide a piece of braided mesh tubing $\frac{1}{4}$ -in ID cut-to-access-length down the length of each ribbon bundle and over the 5-in long ribbon transport tubing. The braided mesh tubing $\frac{1}{4}$ -in ID cut-to-access-length should slide all the way down until the end is about 1 in from the ribbon funnel kit (Figure 9).

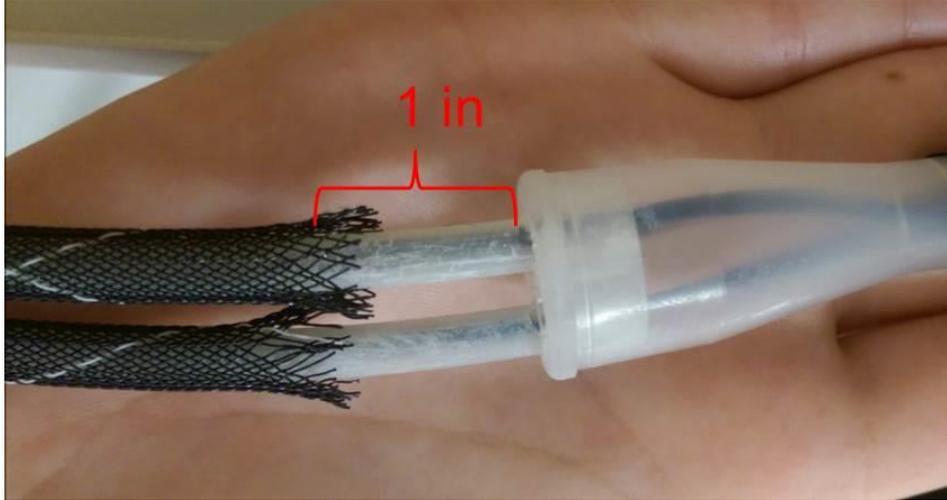


Figure 9

Step 2: Use electrical tape to tape the braided mesh tubing $\frac{1}{4}$ -in ID cut-to-access-length to the 5-in long ribbon transport tubing (Figure 10).

- The 5-in long ribbon transport tubing may need to be pulled back out of the ribbon funnel kit one at a time to make it easier to apply the electrical tape



Figure 10

Step 3: Fill any empty holes in the funnel cap with silicone – DC 734 sealant.

6. Cable Completion

6.1 Splice Trays

Step 1: Secure ribbon groups into OSE splice trays following the instructions per SRP 001-285 (OSE Splice Trays).

Step 2: Make sure the method used to secure the ribbons is covered by the mesh and then secured with electrical tape. Use 4-in cable ties to secure the ribbon groups into the splice trays.

Step 3: Take into account if splicing blue-blue or blue-aqua when positioning ribbons. Route ribbons in tray and label the tray for later reference.

6.2 Shrink the Tubing

Step 1: Starting from the base of the cable, use a heat gun to shrink the heat-shrink tubing 34/7 x 160-mm over the ribbon funnel kit as shown in [Figure 11](#). Starting from one end and working all the way around the cable and moving to the other end of the heat-shrink. Use the adhesive aluminum foil 100-mm x 250-mm as a shield around the mesh to keep the heat from melting the mesh.

Step 2: Route the ribbon legs into the OSE per SRP 003-450 (Optical Splice Enclosure) ([Figure 12](#)), and place splice tray in the splice tray holder location. Secure ribbon legs with cable retention strap.



Figure 11



Figure 12

For questions and comments about the procedures or contents of this document please call Corning Optical Communications Customer Service line at 1-800-743-2671 and ask for Technical Support.