

Installing a Furcation Kit on a Composite Drop Cable

1. General

1.1 This procedure describes the method for installing a Corning Cable Systems Drop Furcation Kit (either p/n TKT-DROPKT or TKT-DROPKT-BR) on a Composite Drop Cable.

1.2 This issue includes updated corporate information.

2. Precautions

2.1 General Precautions



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 are very sharp and can easily damage the cornea of the eye.



Safety Gloves

WARNING: The wearing of safety gloves to protect your hands from accidental injury when using sharp-bladed tools is strongly recommended. Use extreme care when the tool is open and its blades are exposed. Dispose of used blades properly.

2.2 Buffer Tube Handling Precaution



CAUTION: Buffer tubes are sensitive to excessive pulling, bending, and crushing forces. Excessive bending will cause kinking which may damage the fibers inside.

2.3 Fiber Precautions



WARNING: Cleaved glass fibers are very sharp and can easily pierce the skin. 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 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.

3. Tools and Materials

3.1 In addition to a Corning Cable Systems Composite Drop Furcation Kit, the following tools and materials are required to complete this procedure.

- Utility knife with hook-blade*
- Scissors*
- Seam ripper
- Filling compound remover*
- Vinyl tape*
- Tape measure*
- Lint-free tissues*
- Ideal® coaxial cable cutter*
- Screw driver*
- Gloves
- FuseLite® or other fiber optic connectors
- SRP-004-083, *Sheath Removal Procedure for FREEDM™/LST Cables*

*These items are contained in the Corning Cable Systems Sheath Removal Tool Kit (TKT-005), or in the Fusion Splicing Tool Kit (M67-003).

4. Furcation Tubing Preparation

4.1 Remove enough 37-inch orange and blue furcation legs from the kit for your application. Ensure that all the components of each leg are cut even with the jacket on each end - the jacket material may have stretched.

4.2 Remove 2 inches (5 cm) of jacket from one end of each leg (Figure 1) and check the end of the 900 μm tube to be sure it is open. Cut the tip of the tube with a razor blade, if necessary, to open the end of the tube.

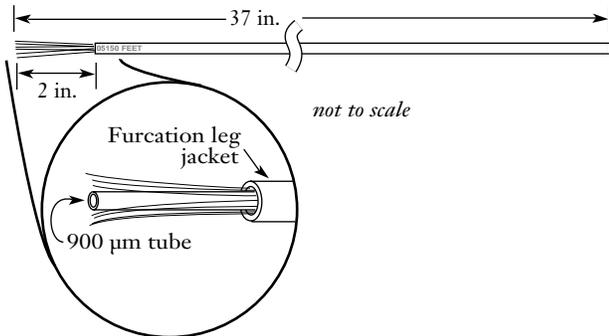


Figure 1

4.3 Remove a 0.5-inch (1.25 cm) section of jacket from the opposite end of each leg and inspect that end of the 900 μm tube to be sure it is open. Cut the tip of the tube with a razor blade, if necessary, to open the end of the tube.

5. Cable Preparation

Note: At least 40 inches (1 m) of outer sheath should be removed for proper routing of the inner cables in most hardware. Remove more than this length of outer sheath, if necessary, for your application.

5.1 Refer to the documentation for the hardware in which you are installing the cable for the required sheath removal lengths of the two cable cores.

5.2 Determine the total length of oversheath to be removed and mark it on the cable with a wrap of tape (Figure 2).

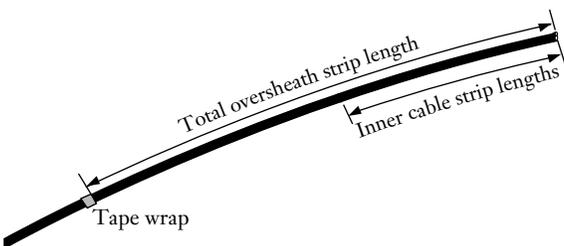


Figure 2

The oversheath is normally removed from its end back to the point where the cable enters the node or pedestal. From there the two inner cables are treated separately. Depending upon the application, the jackets on the fiber optic and copper cables may not need to have the same strip length as the oversheath, or each other.

5.3 Using a hook blade knife, make a ring cut through the oversheath at the wrap of tape (Figure 3). *Because the composite drop cable is oval, the ring cut may not go through the sheath in all areas. Do NOT cut deeper than the oversheath jacketing.*

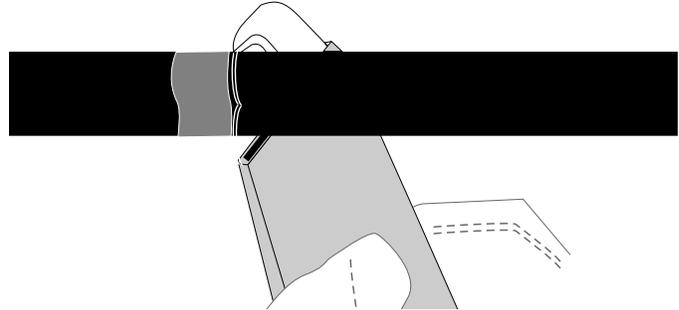


Figure 3

5.4 Gently flex and pull the cable at the cut to break the oversheath jacketing. **DO NOT** violate the minimum bend radius of the cable during this step.

5.5 Use the hook blade to make a second ring cut 6 inches (15 cm) from the end of the cable (Figure 4).

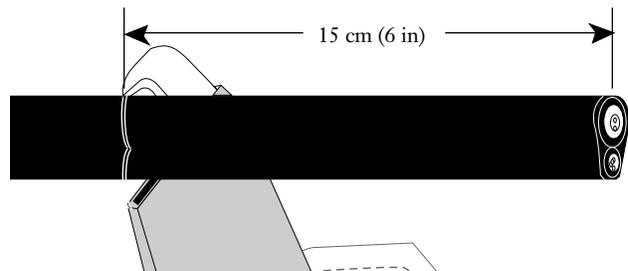


Figure 4

5.6 Gently flex and pull the cable at this second ring cut to break the oversheath jacketing. **DO NOT** violate the minimum bend radius of the cable during this step.

5.7 Slide the 6-inch (15 cm) section of oversheath off the end of the cable (Figure 5).

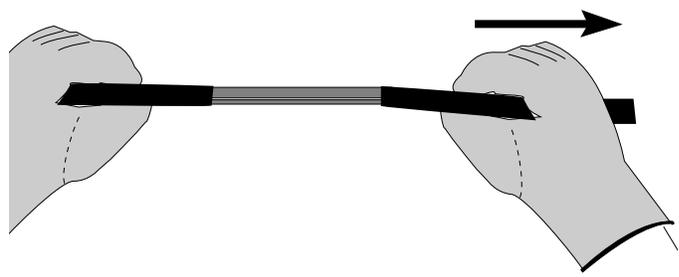


Figure 5

5.8 Using the hook blade, cut a starting notch in the oversheath for the rip cord between the two inner cables (Figure 6).

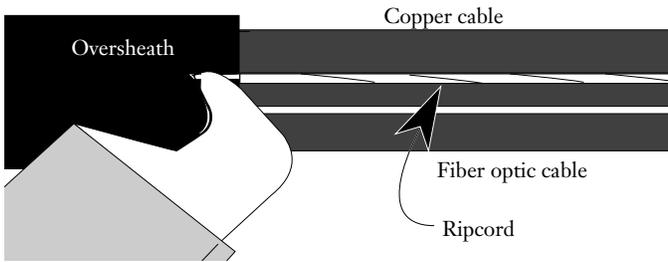


Figure 6

5.9 Wrap the rip cord around the shaft of a screwdriver, short section of scrap cable, or other object which can serve as a handle.

5.10 Pull the rip cord through the sheath to the tape wrap (Figure 7).

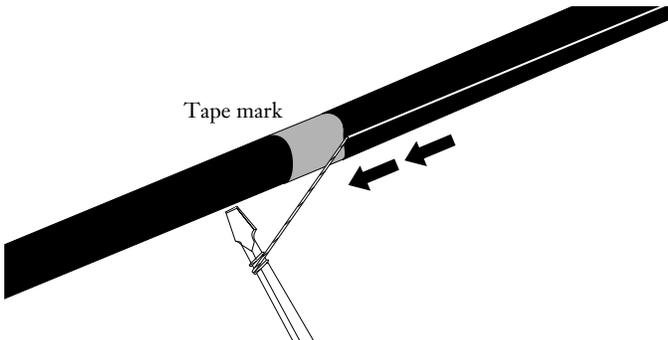


Figure 7

5.11 Cut the rip cord flush at the tape mark with scissors.

5.12 Starting at the end of the cable, separate the oversheath from the inner fiber optic and copper cables back to the ring cut (Figure 8).

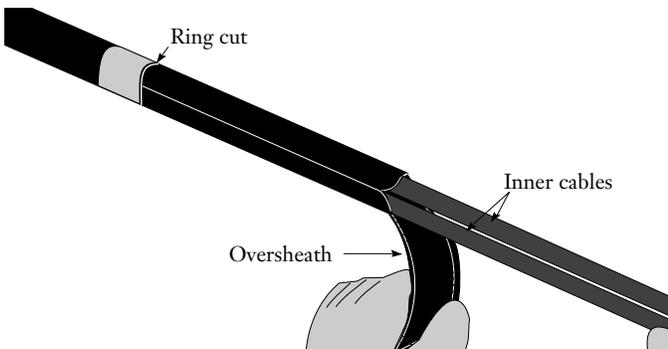


Figure 8

5.13 At the ring cut, carefully flex the oversheath and remove it.

5.14 Clean the inner sheaths with the cable cleaner provided in the furcation kit.

Note: *The copper wire cable may have to be bent away from the fiber optic cable to perform the following steps. Over-bending can damage the copper cable.*

5.15 Mark the inner fiber optic cable 38.5 inches (97.8 cm) from the cable end (Figure 9).

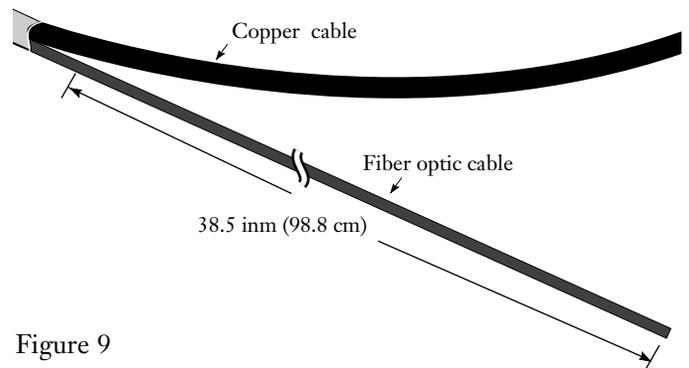


Figure 9

5.16 Remove the cable sheath and expose the central tube in accordance with SRP-004-083, *Sheath Removal Procedure for FREEDM™/LST Cables* (Figure 10).

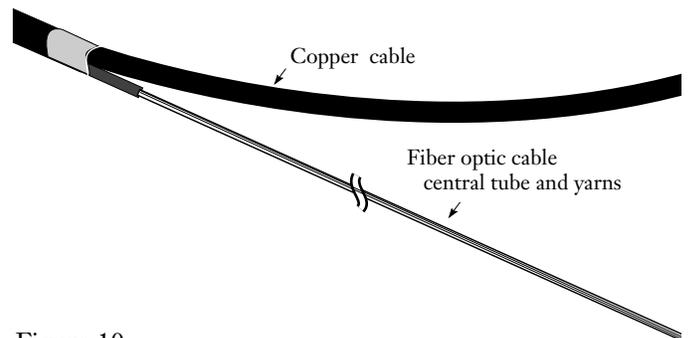


Figure 10

5.17 Scuff the last 0.5 inch (1.25 cm) of the fiber optic cable sheath in a circular motion (Figure 11) with the sandpaper provided in the kit. Wipe away the resulting dust/grit.

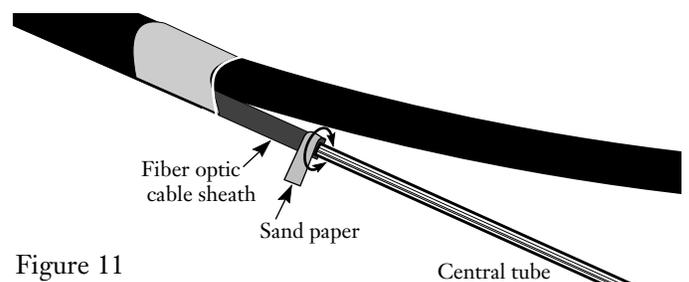


Figure 11

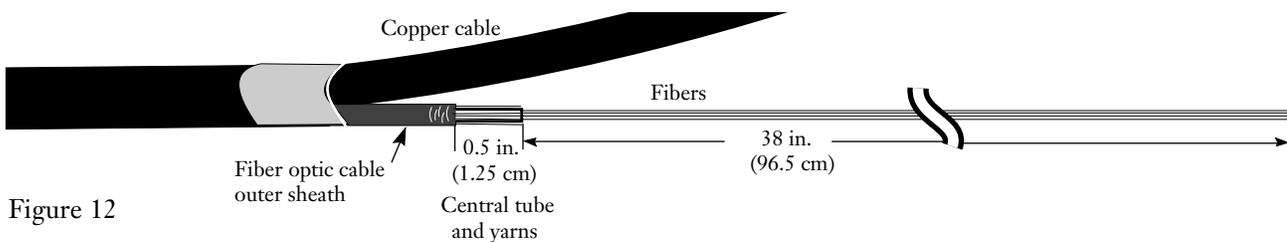


Figure 12

5.18 To prepare the central tube (Figure 12) :

- Trim exposed fiberglass yarns 0.5 in. (1.25 cm) from the end of the sheath
- Score and remove the central tube from the fibers at the same point using an Ideal coaxial cable stripper.
- Clean and dry the cable end, fiberglass yarns, and fibers using the kit's cable cleaner.

Note: *THE CLEANER THE FIBERS ARE, THE EASIER THEY WILL SLIDE INTO THE FURCATION TUBING.*

6. Furcation And Cable Assembly

6.1 To feed a fiber into its furcation leg:

- Fold the the 2 inches of yarn back over a furcation leg to expose the end of the 900 μm tubing.
- Feed a fiber into the exposed 900 μm tubing, making sure that the fiber/ tubing colors match.
- Slide the legs onto the fibers until the 2 inches (5 cm) of exposed 900 μm tubing slides into the central tube of the fiber optic cable (Figure 13).

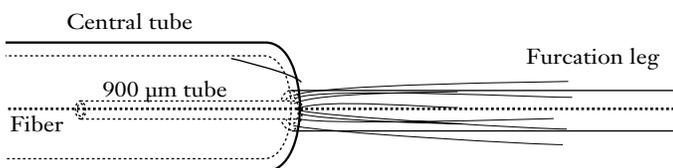


Figure 13

6.2 Repeat step 6.1 on the remaining fibers.

6.3 Flare out the exposed 2-inch lengths of aramid yarns from the furcation legs and trim them so they overlaps the fiber optic cable's yarns, and the roughened end of the cable sheath by 0.5 in (1.25 cm) (Figure 14).

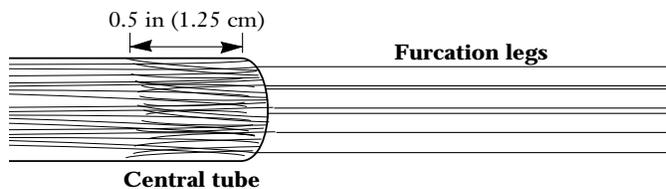


Figure 14

6.3 Slide a 2-inch heat shrink from the kit down the furcation leg so it covers the aramid yarn and the end of the leg. Center the shrink tubing so that it covers both the legs and the fiber optic cable by 0.75 in. (20 mm).

Shrink the tubing into place and allow to cool (Figure 15).

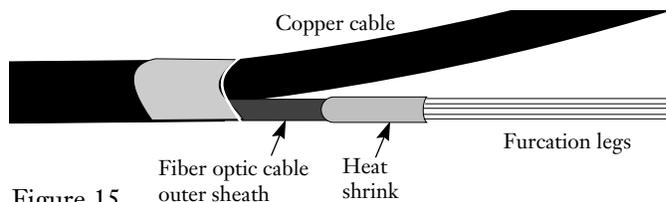


Figure 15

7. Connectorization

7.1 Prepare and connectorize the furcation ends according to SRP 006-067 for FuseLite connectors. Treat completed the furcation assembly as you would a 2.9 mm Single-fiber cable.in terms of placement, handling and bend radius

*Special Note:
Fiber Optic
Training
Program*



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