

## OptiFit® Furcation Kit for SST-Drop Cables

### Revision History

Issue	Date	Reason for Change
1	07/2006	Initial Release

### 1. GENERAL

This instruction describes installing the Corning Cable Systems' OptiFit® Hybrid or OptiFit II Furcation Kits onto SST-drop cable.

The Corning Cable Systems OptiFit® Furcation Kit provides the end-user with the ability to configure the system with preconnectorized cables dropped at the node location. The furcation unit terminates the cable with an epoxy stub and supports two to twelve fibers. The fibers are fanned out with 900-micron, 2-mm or 3-mm subunits, depending on the amount of protection needed. The metal fitting encloses the epoxy and links the furcation unit to any hardware, providing a  $\frac{5}{8}$ -inch threaded input port.

### 2. GROMMET PREPARATION

Attach a grommet to the metal tube by placing a small amount of Loctite® 411 or Loctite 454 on the face of the grommet and pressing the grommet to the tube. Then place a wrap of tape around the seam between the grommet and the tube (Figure 1).

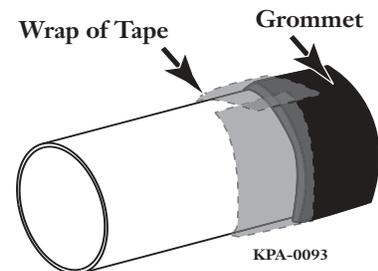


Figure 1

### 3. CABLE PREPARATION

**Step 1** Measuring from the end, mark the cable sheath at the following points:

- For 25-inch legs, mark at 32 inch and 32  $\frac{3}{4}$  inch
- For 36-inch legs, mark at 43 inch and 43  $\frac{3}{4}$  inch
- For 47-inch legs, mark at 54 inch and 54  $\frac{3}{4}$  inch
- For other leg lengths, add 7 and 7  $\frac{3}{4}$  inches to the requested leg length to determine cable strip lengths marks.

**Step 2** Slide the OptiFit nut onto the cable and past the marks on the cable sheath in the orientation shown (Figure 2).

**Step 3** Slide the metal tube (grommet end first) onto the cable and past the marks on the sheath.

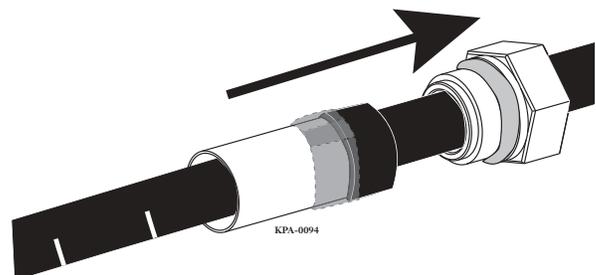


Figure 2

**(OptiFit II Fitting Only)**

*Cut a  $\frac{3}{8}$ -inch x  $\frac{3}{4}$ -inch solid heatshrink tube in half. Slide one piece onto the cable and past the marks on the sheath.*

**Step 4** Place a wrap of tape around the cable sheath behind the second mark on the sheath to prevent damage to the cable sheath.

**Step 5** Using a file, scuff the cable sheath between the two marks (approximately  $\frac{3}{4}$  inch). Ensure the cable sheath is completely scuffed around the circumference to allow the epoxy to adhere to the cable when the plug is poured (Figure 3).

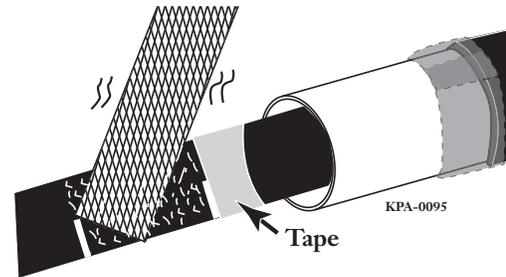


Figure 3

**Step 6** Remove the cable sheath to the first mark (Figure 4).

**Step 7** Pull rods away from buffer tube or armor and secure to table.

**Step 8** Remove the armor to the end of the outer cable sheath. Remove an additional  $\frac{1}{2}$ -inch of sheath to expose the cable armor. Remove the colored coating from the armor.

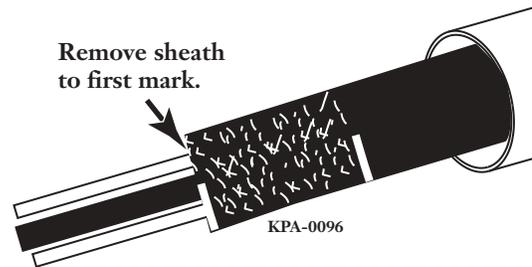


Figure 4

**Step 9** Remove the tape from behind the scuff area.

**Step 10** Cut two flaps in the cable sheath at the end. These flaps should be approximately  $\frac{1}{4}$ -inch wide on opposite sides of the cable. Trim a small amount of the sheath from the end of each flap. Bend the flaps out so epoxy flows around them when the plug is poured (Figure 5).

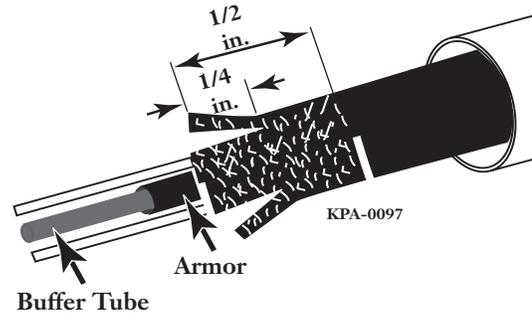


Figure 5

**(OptiFit II Fitting Only)**

*Slide heatshrink tube so that it overlaps approximately  $\frac{1}{4}$  inch into the scuff area against the back of the flaps. This is used to build up cable diameter to fit the grommet.*

**Step 11** Remove the aramid yarn to approximately  $1\frac{3}{8}$  inch (for the OptiFit Hybrid fitting) or  $\frac{3}{4}$  inch (for the OptiFit II fitting) from the end of the cable sheath.

**Step 12** Remove the buffer tube to approximately  $\frac{1}{4}$  inch from the end of the armor (Figure 6). Use **extreme caution** not to nick the fibers while cutting the buffer tube.

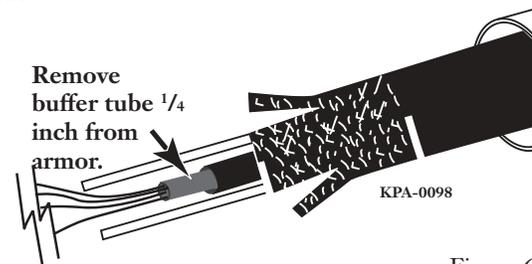


Figure 6

**Step 13** Clean the aramid yarn and buffer tube with a citrus-based degreaser soaked wipe. Wipe dry with a clean, dry cloth.

**Step 14** Clean the fibers.

**NOTE:** *In the following steps, ensure no Loctite comes in contact with the exposed 250 micron fibers.*

**Step 15** SST-Drop cables (armored) with two to twelve fibers:

Locate and modify a transition piece (Figure 7) by trimming for the OptiFit II approximately  $\frac{3}{8}$  inch off the side that slides onto the buffer tube and approximately  $\frac{1}{8}$  inch for the OptiFit Hybrid fitting trim  $\frac{1}{4}$  inch off the side into which the buffer tube slides (non-funnelled end). Clean the buffer tube with alcohol and a wipe. Slide the modified transition piece (small inside-diameter end first) over the fibers and onto the buffer tube approximately  $\frac{1}{4}$  inch.

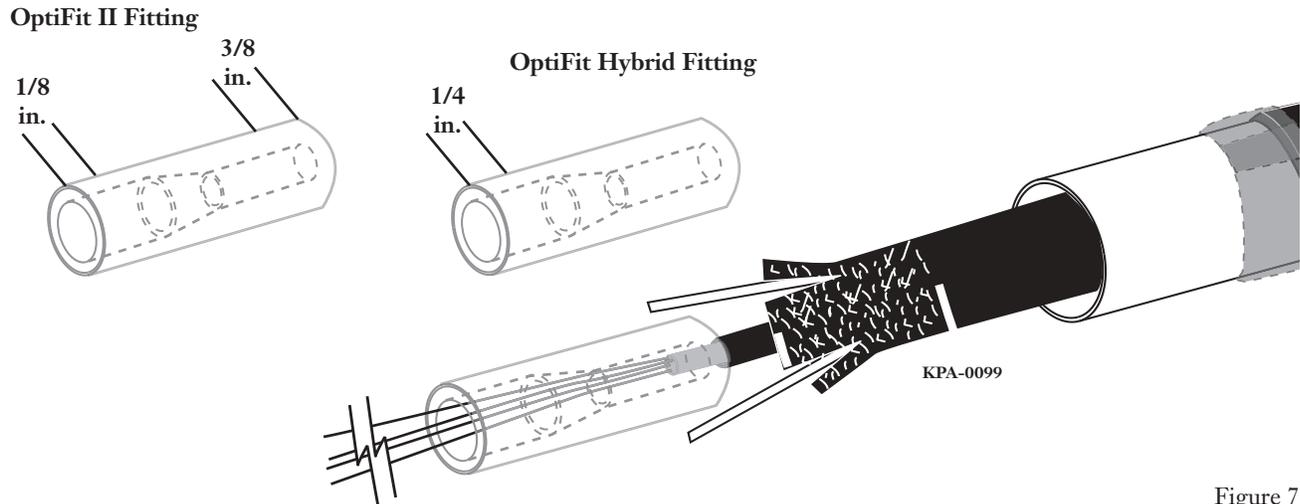


Figure 7

**Step 16** Feed the fibers into the fanout assembly (Figure 8). If the tubing is colored, match the fiber color to the color of the fanout leg. When using PVDF legs, inject RTV 737 silicone into the funnel portion of the transition piece. Slide the fanout assembly over the fibers until the end of the first heatshrink tube is aligned with the rear of the transition piece.

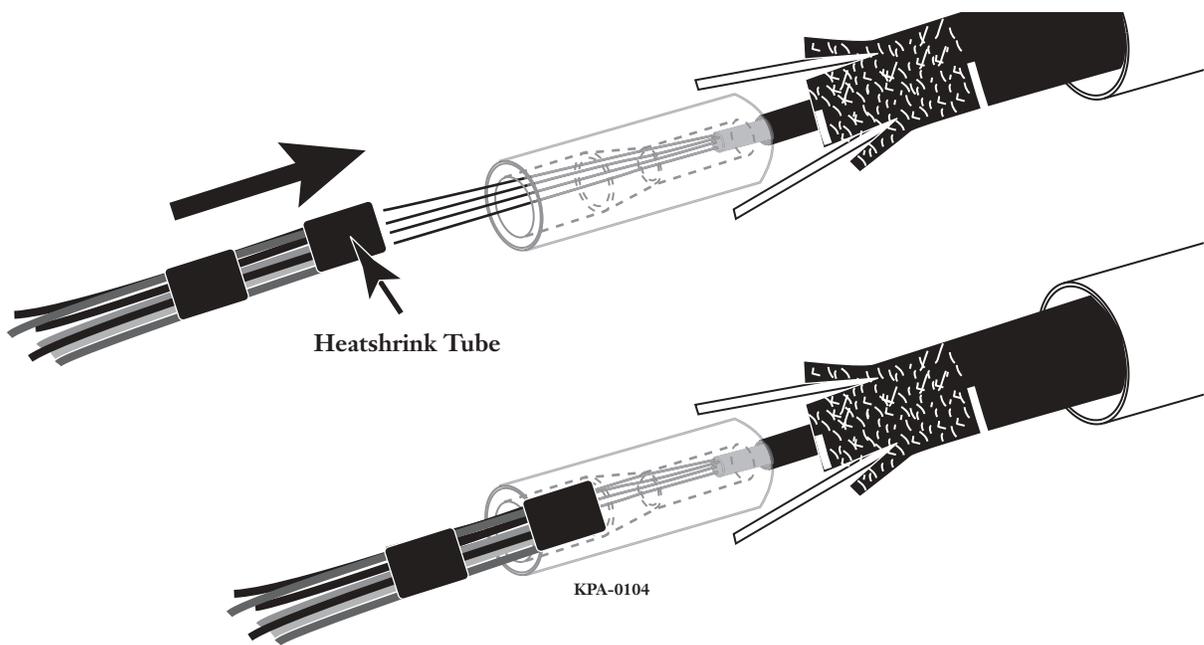


Figure 8

**Step 17** Cut steel rods, if present (Figure 9).

**(OptiFit Hybrid Fitting)** Cut rods to 2 inches using a chain cutter, then bend rods back to make a loop that is no longer than  $1 \frac{3}{8}$  inches and will fit into the metal tube.

**(OptiFit II Fitting)** Cut rods to  $1 \frac{1}{4}$  inch using a bolt cutter, then bend rods back to make a loop that is no longer than  $\frac{3}{4}$  inch and will fit into the metal tube.

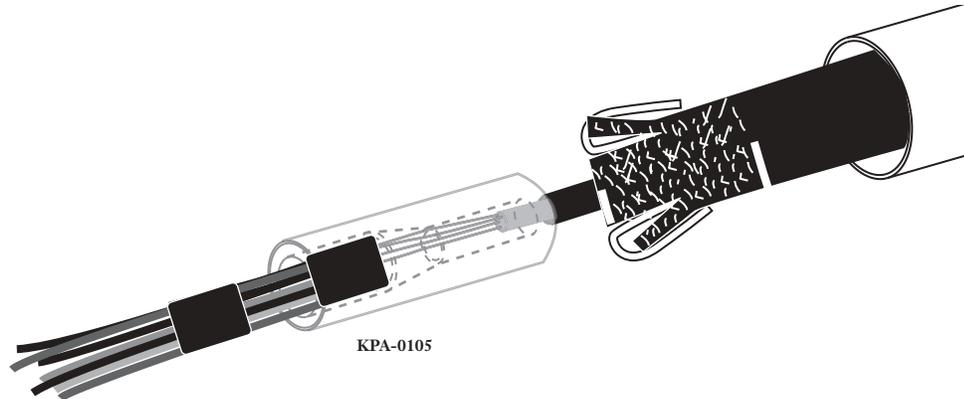


Figure 9

#### 4. EPOXY PLUG PREPARATION

**Step 1** Position the metal tube over the furcation unit (Figure 10). Ensure that the fanout assembly is down in the tube approximately  $\frac{1}{4}$  inch (**OptiFit Hybrid Fitting**) or  $\frac{3}{16}$  inch (**OptiFit II Fitting**).

**Step 2** Secure the cable in a vertical position.

**NOTE:** *The fanout assembly must be centered in the tube.*

**Step 3** Locate a large, plastic syringe tip and trim the tip to a length of  $2 \frac{1}{2}$  to 3 inches, if necessary. Place the syringe tip on a 3cc syringe.

**Step 4** Locate a tube of black Uraseal epoxy and flip the wafer (divider) to allow the two components to mix together. Shake the tube vigorously for 40 to 50 seconds to thoroughly mix the epoxy.

**Step 5** Immediately pour the epoxy into the syringe. Place the plunger into the syringe, invert the syringe, and force out any air.

**Step 6** Insert the syringe tip into the metal tube as close to the bottom as possible.

**Step 7** **SLOWLY** inject the epoxy into the tube, pulling the syringe up as you inject. This should prevent air bubbles and epoxy voids. Continue to fill the tube until full of epoxy. Remove any excess. **DO NOT** allow the epoxy to form a “dome” over the end of the tube.

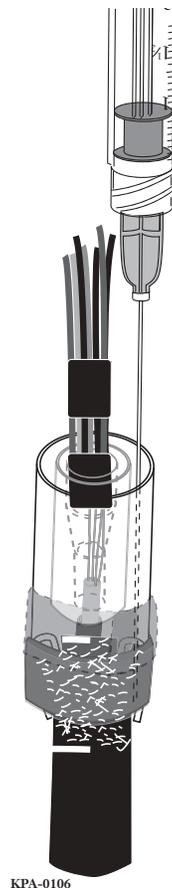


Figure 10

- Step 8** Allow the epoxy to cure for at least 10 to 15 minutes. Remove any tape from around the grommet and metal tube.
- Step 9** Feed the fanout legs through the OptiFit fitting. Slide the OptiFit fitting over the fanout assembly and metal tube. Hold the legs tight as the fitting is pushed up. This will avoid “jammed” legs.
- Step 10** Screw the nut into the fitting hand tight (Figure 11).

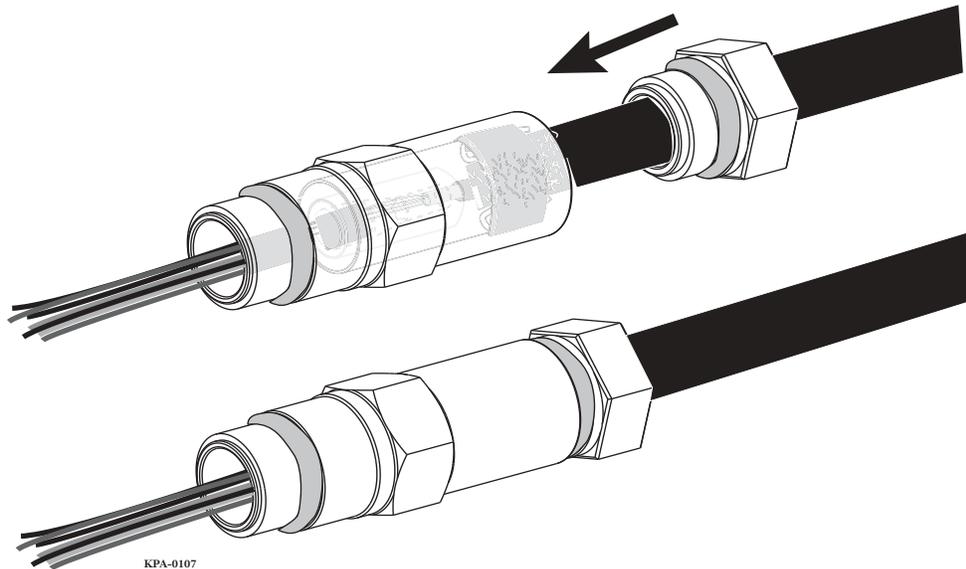


Figure 11

**NOTE:** Turn the nut, NOT the fitting. ENSURE the fitting and nut are properly aligned or cross-threading may occur.

- Step 11** Test the fibers in the assemblies using a white light. If the assembly is on a steel reel, check the fibers with a laser light.



**CAUTION:** If a laser light source is used, avoid looking directly into the end of the fiber.

- Step 12** Measure from the front of the adapter sleeve (Figure 12) and trim the fanout legs to the required finished leg length (leg length + applicable tolerance).

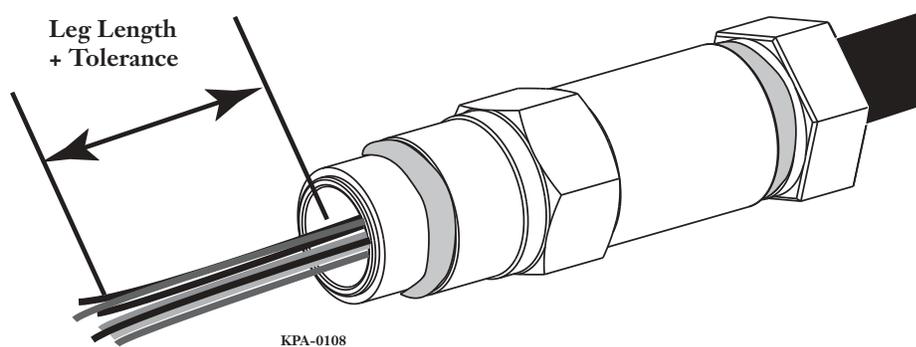


Figure 12

