

CORNING

Sheath Removal of Freedom® Gel-Filled and Gel-Free Ribbon Riser and Ribbon Plenum Cables

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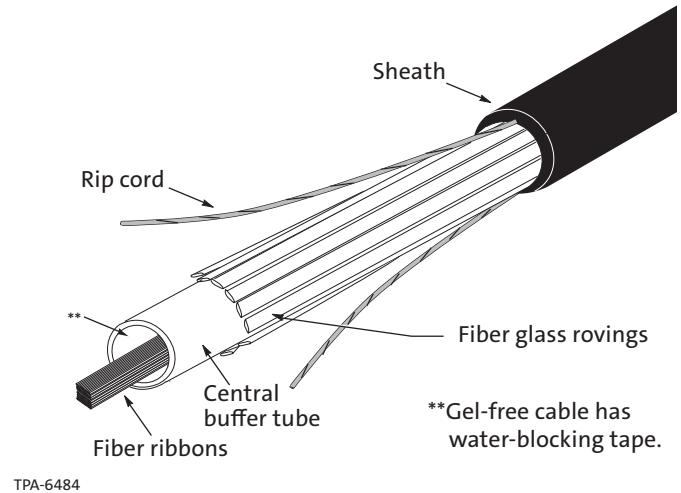
004-076

Accessing Individual Fibers in Corning Optical Fiber Ribbons Using the TKT-060 Kit

1. General

This procedure describes installation and handling practices for Freedom® gel-filled and gel-free ribbon riser and ribbon plenum fiber optic cables (Figure 1).

The cables illustrated in this procedure are manufactured with a central buffer tube. Multiple flexible fiberglass rods (rovings) located beneath the sheath provide tensile strength for the cables. Ribbon Riser cables are OFNR /FT-4 listed; Ribbon Plenum cables are OFNP/FT-6 listed.



2. Precautions

2.1 General Precautions

Figure 1



CAUTION: Recommend the use of safety glasses (spectacles) conforming to ANSI Z87, for eye protection from accidental injury when handling chemicals, cables or fiber. Pieces of glass fiber are very sharp and have the potential to damage the eye.



CAUTION: The wearing of cut-resistant safety gloves to protect your hands from accidental injury when using sharp-bladed tools and armored cable is strongly recommended. Use extreme care when working with severed armor. There will be a sharp edge where armor is cut. To minimize the chance of injury from the cut armor, cover the exposed edge with a wrap of electrical tape. To minimize the chance of injury from sharp-bladed tools, always cut away from yourself and others. Dispose of used blades and armor scrap properly.

2.2 Laser Precautions



WARNING: Never look directly into the end of a fiber that may be carrying laser light. Laser light can be invisible and can damage your eyes. 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. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.

2.3 Buffer Tube 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 the 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.

2.4 Fiber Precautions



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

2.5 Filling Compound Remover for Gel-Filled Cables



CAUTION: Cable filling compound (gel) contains petroleum distillates. This product contains hydrocarbon oil and silica. Harmful or fatal if swallowed. Do not induce vomiting. Call a physician immediately.

3. Tools and Materials

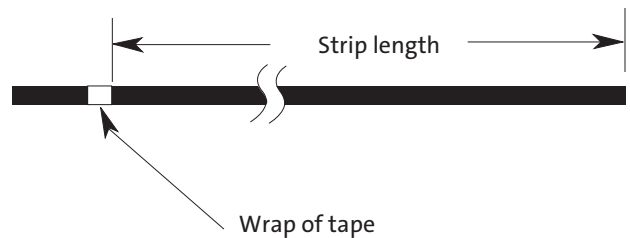
The following tools and materials are required for this procedure:

- Utility knife with hook-blade * or cable sheath knife
- Scissors *
- Filling compound remover *(for gel-filled cables)
- Vinyl tape *
- Side cutters*
- Paper towels or clean dry cloth rags
- Tape measure *
- Permanent marking pen *
- Ideal® model 45-164 (1/4 to 9/16 in O.D.) coaxial cable stripper
- Small Phillips head screwdriver *

* Items available in the M67-003 Fusion Splicer Tool Kit

4. Sheath Removal

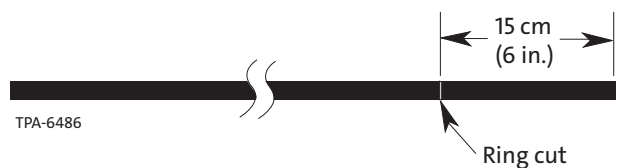
Step 1: Determine the proper sheath removal length for the hardware being used. Mark a point at this distance from the end of the cable with a wrap of tape (Figure 2).



TPA-6485

Figure 2

Step 2: 15 cm (6 in) from the end of the cable, use the hook blade or cable sheath knife to ring cut the outer sheath (Figure 3). Use care to avoid cutting the rip cords or rovings beneath the sheath.



TPA-6486

Figure 3

Step 3: Position the blade of the hook blade knife at the ring cut so that it can travel down the cable between the sheath and the cable core towards the cable end.

IMPORTANT: Hold the knife at a 45° angle to the cable to prevent the blade from slipping out of the sheath.

Step 4: Slit the 15 cm (6 in.) section of cable sheath by holding the arm which has the knife out straight and pulling the cable “through” the hook blade with your other hand (Figure 4).

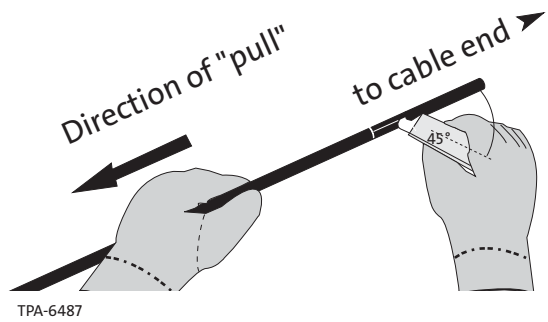


Figure 4

Step 5: Remove the section of sheath to expose the rip cords and fiber glass rovings (Figure 5).

Step 6: Wrap a rip cord around the shaft of a screwdriver, short section of scrap cable, or other object which can serve as a handle.

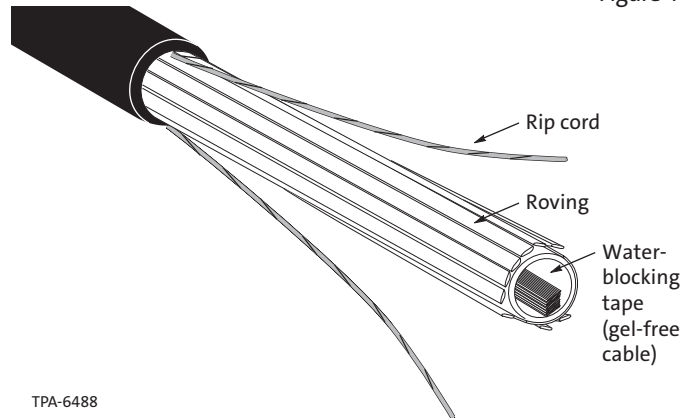


Figure 5

Step 7: Pull the rip cord through the sheath to the wrap of tape (Figure 6). Cut the rip cord flush at the tape mark. Repeat this step with the other rip cord.

Step 8: Pull the sheath halves out and away from the rovings and central buffer tube. Use care not to kink the central tube – the ribbons may be damaged.

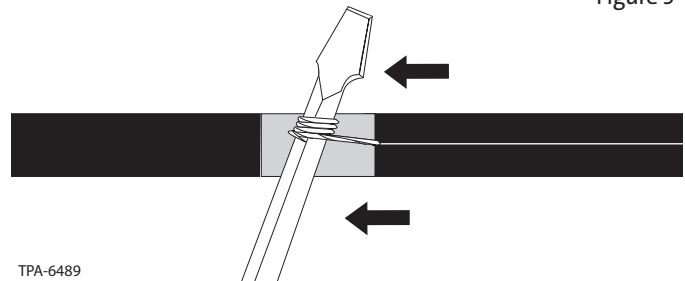


Figure 6

NOTE: The fiber glass roving length provided in the next step is adequate to anchor the cable in most hardware installations. Verify that this is the case in your installation by checking the instructions provided by the hardware manufacturer.

Step 9: Use side cutters to cut the rovings about 13 cm (5 in.) from the tape wrap (see Figure 7).

Step 10: Trim off the two sections of sheath at the tape mark with side cutters or scissors (Figure 7).

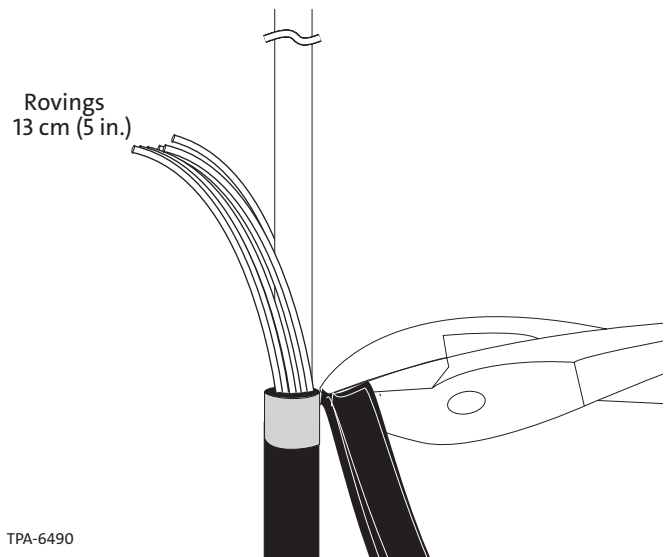


Figure 7

5. Accessing the Ribbons

This section describes how to use an Ideal model 45-164 (1/4 to 9/16 in O.D.) coaxial cable stripper to score the cable's central buffer tube. Scoring the circumference of the tube will enable you to make a clean break in the tube with minimal risk to the ribbons inside.

Before using the stripper, make sure that it is properly adjusted. Use a small Phillips head screwdriver to adjust one of the blades on the side of the buffer tube cutter so that it seats against the lower jaw but does not force the jaw open (Figure 8).

IMPORTANT: Leave the blades on the front and other side of the tool fully retracted.

NOTE: Use the last 5 to 7.5 cm (2 to 3 in.) at the free end of the buffer tube to determine the sharpness of the stripper's blade and how many turns of the tool will be required to score the tube. To minimize damage to the ribbons inside the tube, always use the tool to score the tube, not ring cut it.

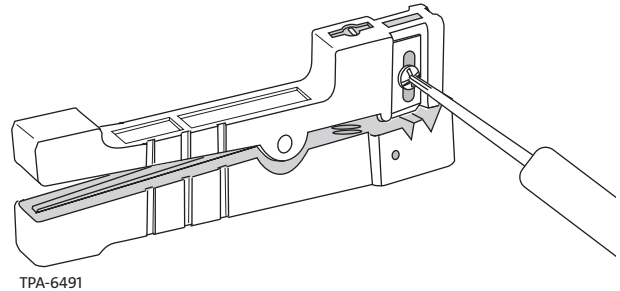


Figure 8

Step 1: To score the central buffer tube:

- a. Open the tool by squeezing its handles together and place the stripper's blade on the tube 60 cm (24 in.) from the end of the tube.
- b. Hold the tube with one hand to prevent it from twisting.
- c. Make enough turns with the cutter to deeply score the tube (Figure 9). Two turns may be adequate with a sharp blade.
- d. Remove the cutter from the tube.
- e. Snap the tube at the scored area (Figure 10). Pull off the severed section of tube. USE CARE TO AVOID DAMAGING THE FIBERS.

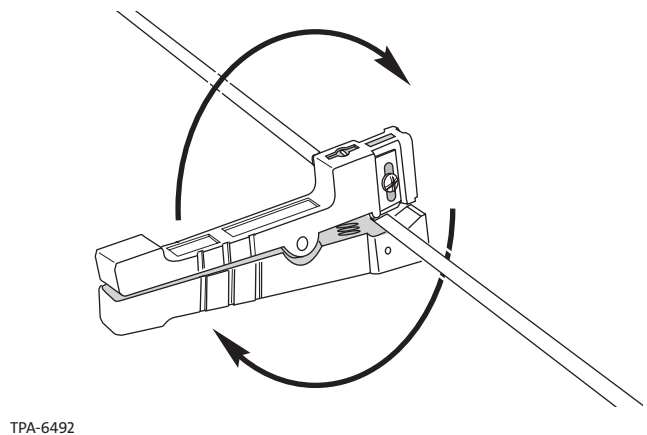


Figure 9

IMPORTANT: If the tube bends rather than snaps at the score point, apply more turns of the tool. If this has no effect, replace the blade.

- f. Repeat steps a-e in 60 cm (24 in) increments until you have removed the required length of buffer tube.

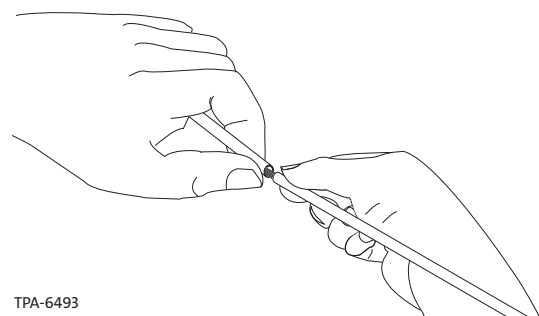


Figure 10



CAUTION: When filling compound remover or other solvents are used to clean the ribbons, wipe away excess solvent with a clean, dry tissue or cloth. NEVER ALLOW OPTICAL FIBERS TO SOAK IN SOLVENTS FOR EXTENDED PERIODS OF TIME— DAMAGE TO THE FIBER COATING CAN OCCUR.

Step 2: (For gel-filled cable) Use a tissue soaked in filling compound remover to wipe the filling compound from each of the ribbons (Figure 11). Use a dry tissue for final cleaning.

(For gel-free cable) Unwrap the ribbon from the water-blocking tape.

Step 3: Route and secure the Ribbon Riser or Ribbon Plenum cable to the hardware being installed. Secure the ribbons within the hardware in accordance with the hardware manufacturer's instructions.

Step 4: If access to individual fibers in a ribbon is required, refer to SRP-004-076, Accessing Individual Fibers in Corning Optical Fiber Ribbons Using the TKT-060 Kit (Figure 12).

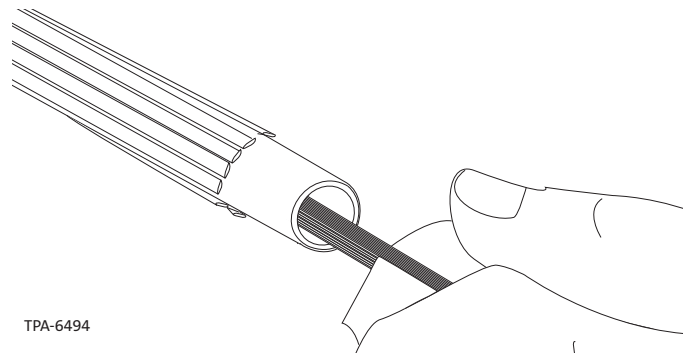


Figure 11

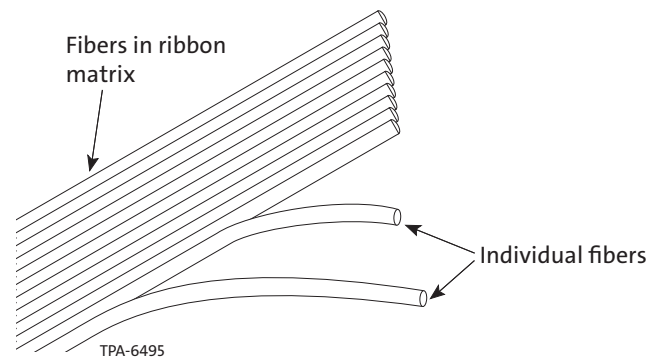


Figure 12