PowerGuide® Sheath Removal

1. General

1.1 This procedure provides sheath removal instructions for OFS PowerGuide® cable. PowerGuide® cable is a self-supporting aerial cable that is custom designed to meet specific customer requirements for span length and loading conditions.

2. Precautions

2.1 OFS optical fiber cables are designed to meet the rigors of aerial, direct buried, and underground duct environments. However, care should be taken during installation to ensure that the cable's minimum bend diameter is not violated and the maximum rated cable load (MRCL) is not exceeded.

2.2 Minimum bend diameters are typically expressed as a multiple of the cable outside diameter (OD) for both static and dynamic conditions. For standard loose tube PowerGuide® cable, the minimum bend diameter is 30 × OD for dynamic conditions and 20 × OD for static conditions. For PowerGuide® AccuTube™ cable (12-fiber ribbon cable), the minimum bend diameter is 30 × OD for both dynamic and static conditions.

2.3 Single wheel stringing blocks (e.g., Sherman & Reilly type) are recommended for all installation applications. Multiple wheel quadrant blocks, or "3-blocks", are not recommended. The minimum stringing block diameter is determined by the cable's minimum bend diameter as defined for dynamic conditions in Section 2.2. Select stringing blocks for your application accordingly. Use of permanent attachment hardware as a substitute for stringing blocks is not recommended.

2.4 Cable tensile load ratings are specified for both short-term and long-term conditions. The short-term condition represents a cable during installation. The long-term condition represents an installed cable subjected to a permanent load for the life of the cable. For short-term conditions, the MRCL for most OFS optical fiber cables is 600 pounds (2700 N). For long-term conditions, the maximum permissible load is 200 pounds (890 N). Note that for PowerGuide® cable, the MRCL may differ from standard cable designs. Please refer to your cable documentation for specific details regarding your cable, or contact the OFS Technical Support Hotline at 888-FIBER-HELP (888-342-3743) for further information.

2.5 To assure that the MRCL is not exceeded during installation, breakaway pulling swivels and/or calibrated pulling devices are recommended for use during cable installation. For installation in duct or innerduct, cable lubricants are recommended to minimize the installation loads. Contact a pulling lubricant manufacturer or the OFS Technical Support Hotline for guidance on the proper choice of cable lubricant.

3. Tools

- Cable sheath knife
- Snips (scissors)
- Diagonal cutters (side cutters)
- Pliers
- Buffer tube cutter
- OFS Quick Split RT tool (AccuTube™ cable only)
- Tape measure
- Electrical tape
- Paper towels
- Lint free wipes
- Isopropyl alcohol
- Approved optical fiber cleaner
- Gloves
- Safety glasses

Caution: Gloves and safety glasses should always be worn when removing the cable sheath.

4. PowerGuide® Sheath Removal for DryBlock™ Cable Designs

4.1 Consult the closure instructions to determine the length of cable jacket that must be removed. Measure and mark the cable at the appropriate stripping length (Figure 1).

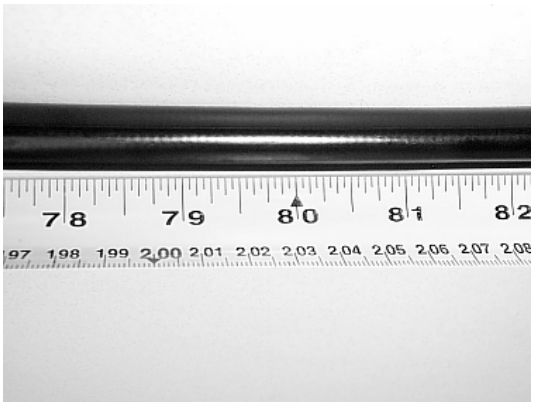

Figure 1 - Measure and mark the section of cable jacket to be removed.

4.2 Use a cable sheath knife to ring cut the cable at the measured mark (Figure 2).

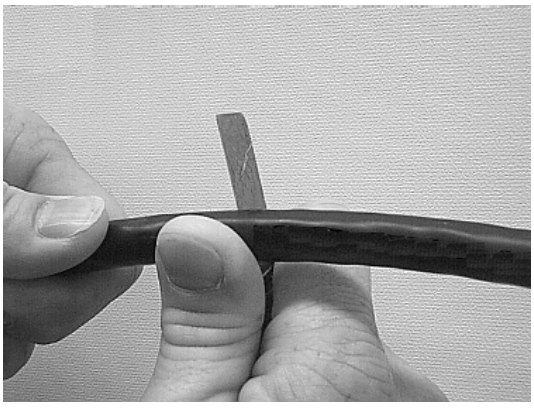

Figure 2 - Ring cut the cable sheath.

4.3 Gently flex the cable at the ring cut to separate the outer sheath (Figure 3). Be careful not to violate the minimum bend radius.

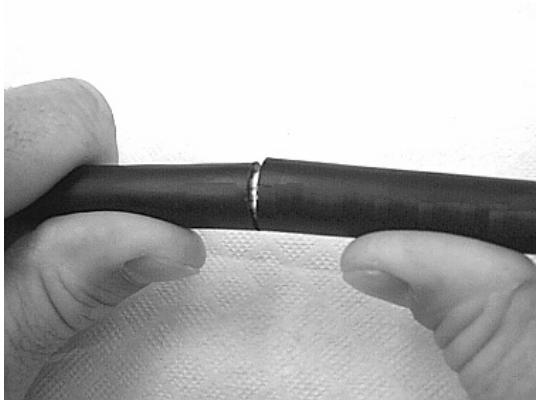

Figure 3 - Separate the cable sheath.

4.4 Ring cut the cable a second time about 5 inches (12 cm) from the cable end. Gently flex the cable in a circular motion to separate the outer sheath.

4.5 Make a longitudinal cut between the second ring cut and the end of the cable (Figure 4).

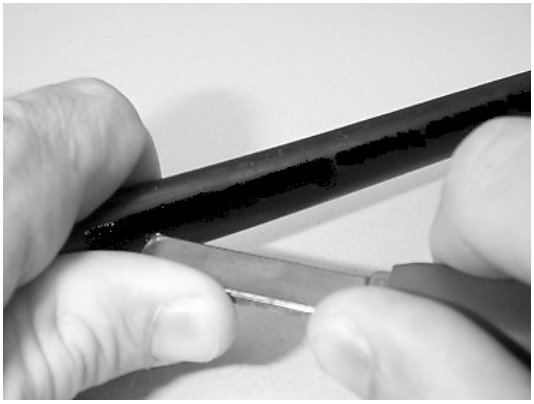

Figure 4 - Make a longitudinal cut at the end of the cable.

4.6 Remove the 5-inch section of cable jacket to expose the rip cord (Figure 5).

Figure 5 - Remove the 5-inch section of outer jacket.

4.7 Locate the ripcord and cut a small “starter slit” in the outer sheath next to the ripcord (Figure 6).

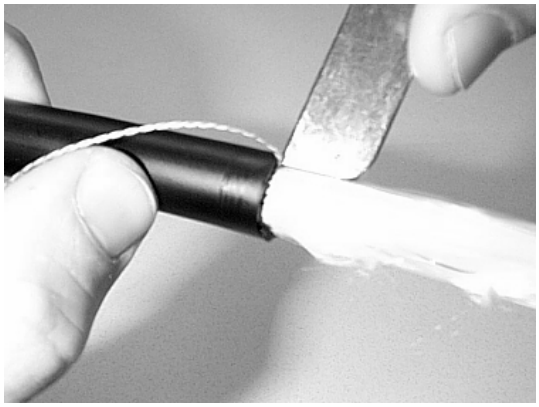

Figure 6 – Cut a starting slit adjacent to the rip cord.

4.8 Wrap the ripcord around a pair of pliers and pull the ripcord through the outer jacket to the ring cut (Figure 7).

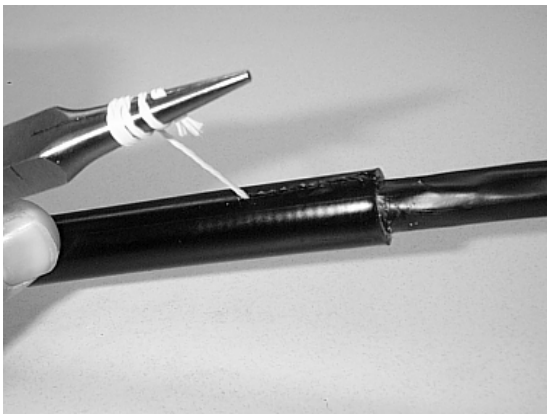

Figure 7 - Pull the rip cord through the outer jacket.

4.9 Remove the outer cable jacket from the dielectric strength members and inner jacket (Figure 8).

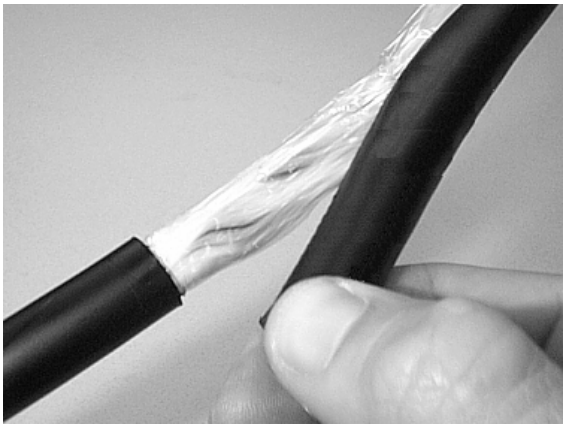

Figure 8 - Remove the outer cable jacket.

4.10 Consult the closure instructions to determine the length of dielectric strength members that is required for fastening in the closure. Separate and cut the dielectric strength elements to the required length (Figure 9).

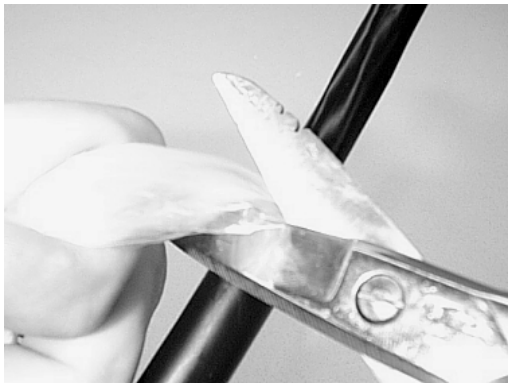

Figure 9 – Cut the dielectric strength members to the required length.

4.11 Measure and mark the inner sheath at the appropriate stripping length. Ring cut the cable at the measured mark lightly scoring the inner jacket (Figure 10).

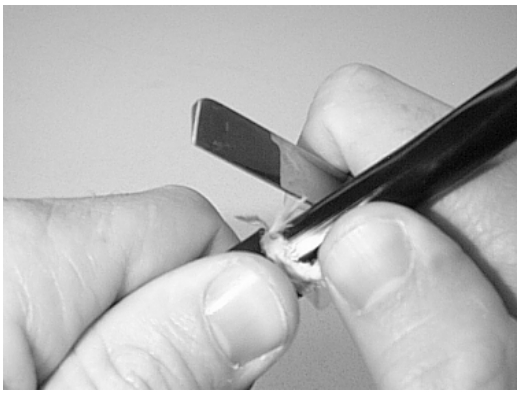

Figure 10 – Ring cut the inner cable jacket.

4.12 Gently flex the cable at the ring cut to separate the inner jacket. Be careful not to violate the minimum bend radius of the cable (Figure 11).

Figure 11 – Flex the cable to separate the inner cable jacket.

4.13 Make a second ring cut approximately 5 inches from the cable end. Gently flex the cable in a circular motion to separate the inner jacket.

4.14 Make a longitudinal cut between the second ring cut and the end of the cable. Remove the 5-inch section of inner cable jacket (Figure 12).

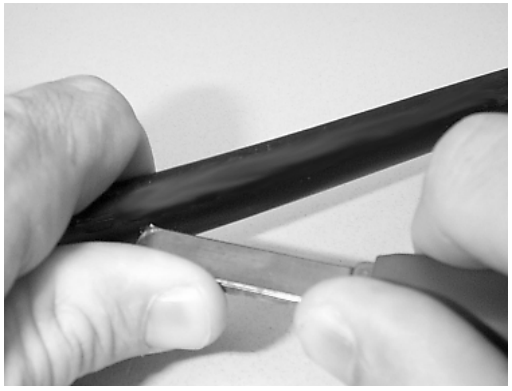

Figure 12 - Make a longitudinal cut at the end of the cable.

4.15 Remove the 5-inch section of inner jacket to expose the ripcord and cable core (Figure 13).

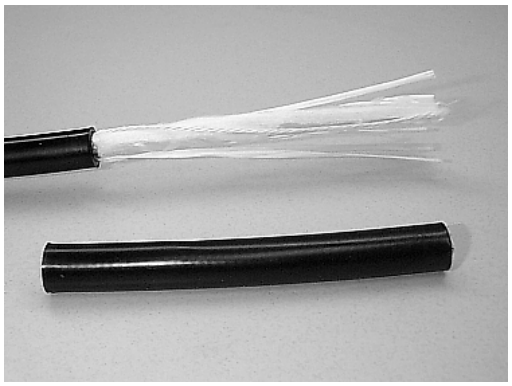

Figure 13 - Remove the 5-inch section of inner jacket.

4.16 Wrap the ripcord around a pair of pliers and pull the ripcord through the inner jacket to the ring cut (Figure 14).

Figure 14 - Pull the ripcord through the inner jacket.

4.17 Remove the inner cable jacket to expose the core of the cable (Figure 15).

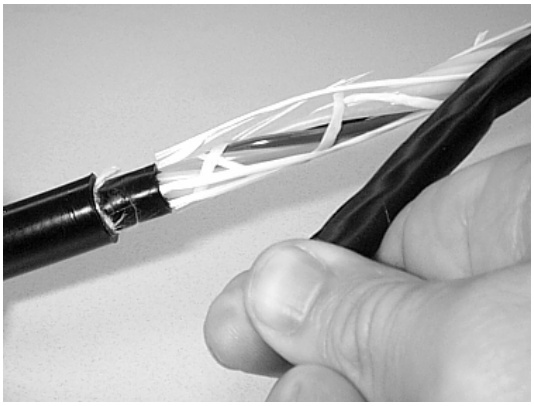

Figure 15 - Remove the inner cable jacket.

4.18 Unwrap and remove the core binder thread and water blocking tape from the cable (Figure 16).

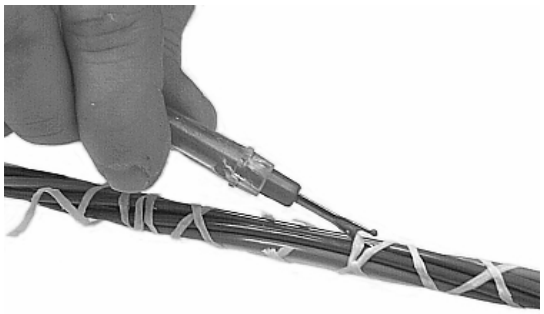

Figure 16 - Remove the binder threads and water blocking tape.

4.19 Carefully unwrap the buffer tubes from one another and remove any water blocking threads between the tubes and the central member (Figure 17).

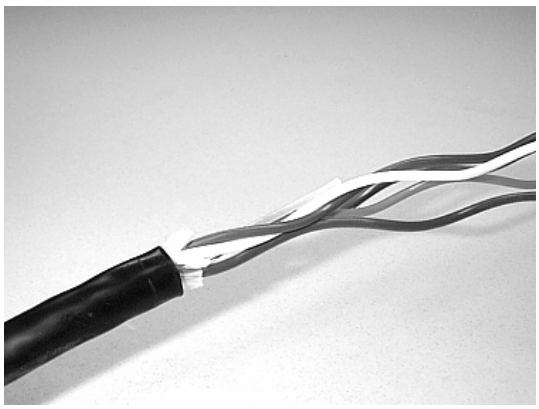

Figure 17 - Unwrap the buffer tubes.

4.20 Consult the closure instructions to determine the length of central strength member that is required for clamping in the closure. Separate the central strength members from the tubes and cut the central member to the required length.

4.21 Consult the closure instructions to determine the buffer tube length that is required in the closure. Use a buffer tube removal tool to ring cut the buffer tubes and remove the tubes from the fibers (Figure 18).

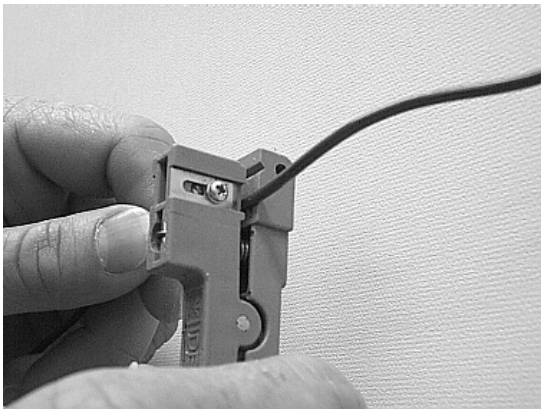

Figure 18 – Ring cut the buffer tubes with a buffer tube removal tool.

4.22 Clean the exposed fibers with a lint free wipe and isopropyl alcohol (Figure 19). The cable is now ready for testing and/or splicing.

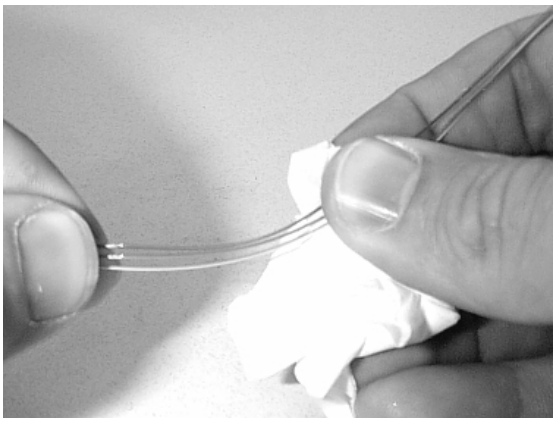

Figure 19 - Clean the fibers with isopropyl alcohol.

5. PowerGuide® Sheath Removal for Flooded Cable Design

5.1 The PowerGuide® flooded cable design is identical to the DryBlock cable design with the exception that flooding compound is used for water blocking protection. Sheath removal is identical to the DryBlock design except that cleaning solvents are required to clean the flooding compound off of the buffer tubes. Otherwise, follow the procedure described in Section 4 – PowerGuide® Sheath Removal for DryBlock™ Cable Designs.

6. PowerGuide® Sheath Removal for AccuTube™ Cable Design

6.1 PowerGuide® AccuTube™ cable is a ribbon cable design that uses 12-fiber ribbons rather than single fibers. PowerGuide® AccuTube™ cable is available with 288 to 432 fibers. The fiber ribbons are contained in 6.0 mm diameter buffer tubes.

6.2 Care must be exercised during cable installation to ensure that the minimum cable bend diameter is not violated or the maximum rated cable load (MRCL) is not exceeded.

6.3 Minimum bend diameters are typically expressed as a multiple of the cable outside diameter (OD) for both static and dynamic conditions. For PowerGuide® AccuTube™ cable, the minimum bend diameter is 30 × OD for both dynamic and static conditions.

6.4 Cable tensile load ratings are specified for both short-term and long-term conditions. The short-term condition represents a cable during installation. The long-term condition represents an installed cable subjected to a permanent load for the life of the cable. For short-term conditions, the MRCL for standard AccuTube™ cable is 1000 pounds (4450 N). For long-term conditions, the maximum permissible load is 300 pounds (1335 N). Note that for PowerGuide® cable, the MRCL may differ from standard cable designs. Please refer to your cable documentation for specific details regarding your cable, or contact the OFS Technical Support Hotline at 888-FIBER-HELP (888-342-3743) for further information.

6.5 The sheath removal procedure for PowerGuide® AccuTube™ cable is the same as described for PowerGuide® DryBlock cable in Section 4 with the exception that an OFS Quick Split RT tool is required to cut and remove the 6.0 mm buffer tubes. Please refer to OFS IP-031A, *Use and Care of the OFS Quick Split Ribbon Tube Tool*, for further details on the use and maintenance of the Quick Split RT tool.

6.6 Clean and dry the ribbons as outlined in OFS IP-041, *AccuRibbon® Cleaning Procedure*.

7. PowerGuide® Sheath Removal for ShortSpan Cable Design

7.1 PowerGuide® ShortSpan cable is a single jacket cable design that is intended for short aerial cable spans and low fiber count applications. The following instructions describe the sheath removal procedure for the single jacket cable.

7.2 Consult the closure instructions to determine the length of cable jacket that must be removed for splicing. Measure and mark the cable at the appropriate length (Figure 20).

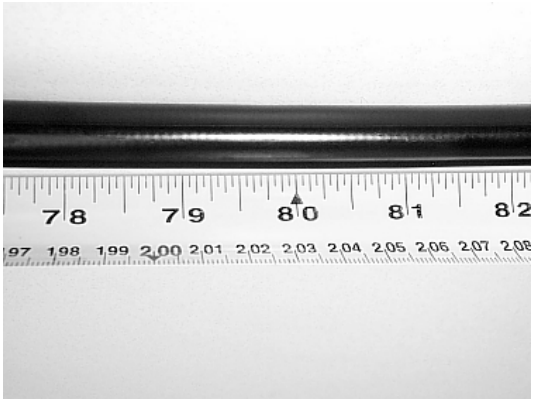

Figure 20 - Measure and mark the cable jacket for removal.

7.2 Ring cut the cable at the measured mark (Figure 21).

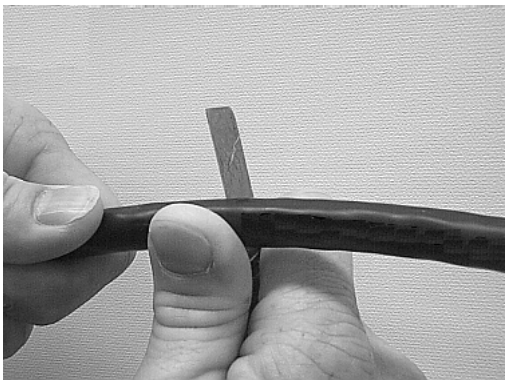

Figure 21 – Ring cut the cable jacket.

7.3 Gently flex the cable at the ring cut to separate the cable jacket. Be careful not to violate the minimum bend radius (Figure 22).

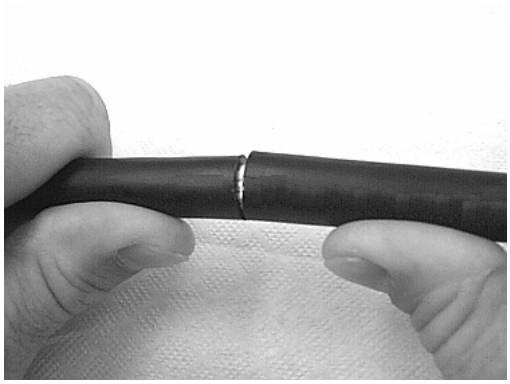

Figure 22 – Separate the cable jacket.

7.4 Make a second ring cut about 5 inches (12 cm) from the cable end. Gently flex the cable in a circular motion to separate the sheath.

7.5 Make a longitudinal cut in the cable jacket between the second ring cut and the end of the cable (Figure 23).

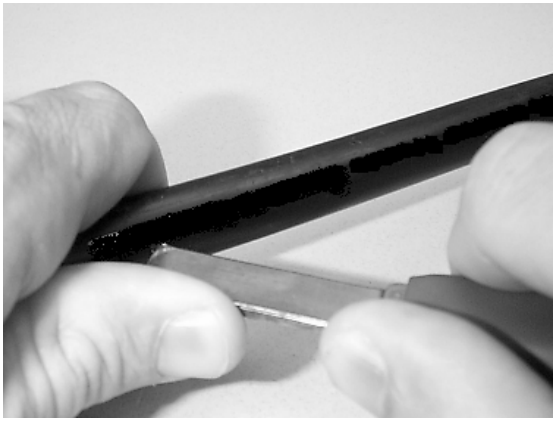

Figure 23 – Make a longitudinal cut at the end of cable jacket.

7.6 Remove the 5-inch section of cable jacket to expose the ripcord (Figure 24).

Figure 24 – Remove the 5-inch section of cable jacket.

7.7 Locate the ripcord and cut a small “starter slit” in the sheath next to the ripcord (Figure 25).

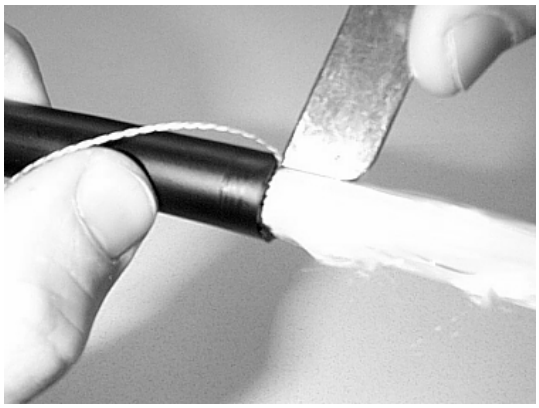

Figure 25 – Cut a starting slit adjacent to the ripcord.

7.8 Wrap the ripcord around a pair of pliers and pull the ripcord through the cable jacket to the ring cut (Figure 26).

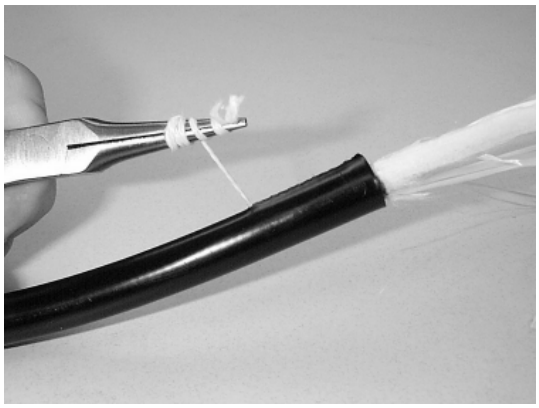

Figure 26 – Pull the ripcord through the outer jacket.

7.9 Remove the cable sheath to expose the dielectric strength elements (Figure 27).

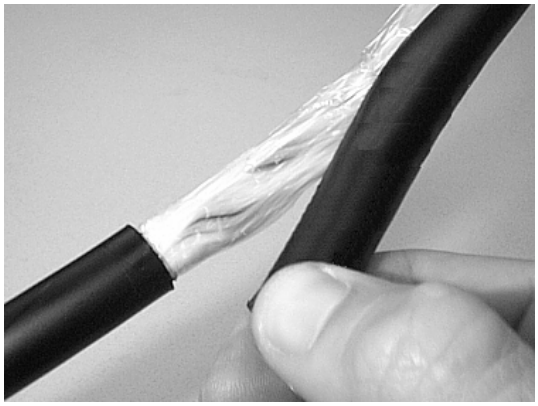

Figure 27 – Remove the cable sheath.

7.10 Consult the closure instructions to determine the length of dielectric strength members that is required for strain relief in the closure. Separate and cut the dielectric strength members as required.

Figure 28 – Cut the dielectric strength members as required.

7.11 Unwrap and remove the core binder thread and water blocking tape (Figure 35).

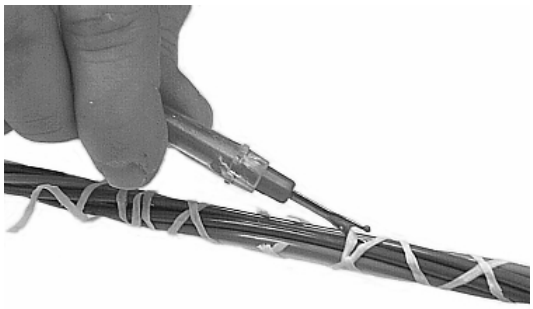

Figure 35 - Remove the binder threads and water blocking tape.

7.12 Carefully unwrap the buffer tubes from one another and remove any water blocking threads from between the tubes and the central member (Figure 36).

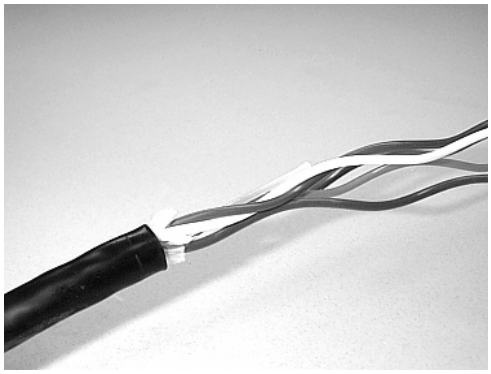

Figure 36 - Unwrap the buffer tubes.

7.13 Consult the closure instructions to determine the length of central strength member that is required for strain relief inside closure. Separate the central member from the buffer tubes and cut the central strength member to the required length.

7.14 Consult the closure instructions for the required buffer tube length inside the closure. Use a buffer tube removal tool to ring cut and remove the buffer tubes from the fibers (Figure 37).

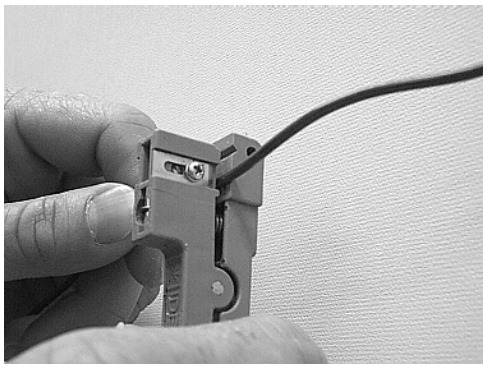

Figure 37 – Cut the buffer tubes to the required length.

7.15 Clean the exposed fibers with a lint free wipe and isopropyl alcohol. The cable is now ready for testing and/or splicing (Figure 38).

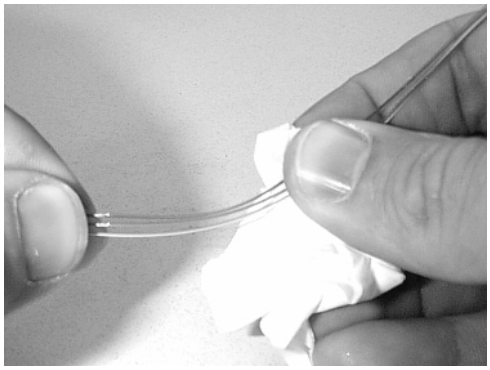

Figure 38 - Clean the fibers.

If you have any questions or require additional information, please contact OFS at 888-FIBER-HELP (888-342-3743).