

revision history |


Issue	Date	Reason for Change
2	December 2009	Title change/additional information on differences in cable access
1	May 2009	Initial Release


Related literature |


SRP-004-137 Installing a Wire Mesh Pulling Grip on All-Dielectric DX Fiber Optic Cables

Admonishments |

The precautionary terms used by Corning Cable Systems in its standard recommended procedures conform to the guidelines expressed in the American National Standards Institute document (ANSI Z 535) for hazard alert messages. Alerts are included in this instruction based on the following:

 **DANGER:** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING:** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION:** indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

1. General

This document describes a procedure for accessing DX Armored Riser and Plenum Fiber Optic cables.

Corning Cable Systems DX Armored Riser and Plenum Cables consist of indoor flame rated cables placed inside all-dielectric armor for ruggedness and superior crush resistance without the conductive properties of traditional armor. The MIC® DX Armored Riser cable contains a standard OFNR Riser cable. The MIC DX Armored Plenum cable contains a standard OFNP Plenum sub-unit. Consequently, the access procedure for the riser and plenum cables are slightly different since the plenum sub-unit does not contain a rip cord. Armor removal for both cables is the same.

Corning Cable Systems DX Armored Riser and Plenum Cables have the bandwidth to transport all voice, data, and video signals required in an automated office environment. The cables are available in fiber counts of 6, 12, and 24 tight-buffered fibers making the cable ready for field termination (no fan-out kit is required). Furthermore, the cables are lightweight and flexible for ease of installation.

2. Precautions

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 fiber 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.*

Cable and Fiber Handling Precautions



CAUTION: *Fiber optic cables are sensitive to excessive pulling, bending and crushing forces. Excessive bending will cause kinking which may damage the fibers inside — the cable may have to be replaced.*



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.*

Chemical Precautions



DANGER: *Flammable. Flash point below 73°F. Keep away from heat, sparks and open flame. Can cause irritation to eyes on contact. In case of eye contact, flush eyes with water for at least 15 minutes. Inhaling fumes may induce mild narcosis. In case of ingestion, consult a physician.*

3. Tools and Materials

The following tools and materials are required to complete this procedure:

- Scissors *
- Miller® stripping tool *
- Isopropyl alcohol *
- Vinyl tape *
- Coaxial cable cutter (large blue Ideal® tool) *
- Coaxial cable cutter (small blue Ideal® tool) *
- Side cutters (diagonal cutting pliers) *
- Seam ripper *
- Tape measure *
- Lint-free tissues
- Permanent marking pen *

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

4. Outer Jacket Removal

Step 1: Refer to the documentation for the product you are installing to obtain the proper jacket removal length. *Add 15 cm (6 in.) to the overall length in case fibers are damaged during the inner cable jacket removal.* Use a tape measure and permanent marker to mark this location on the outer jacket (Figure 1).

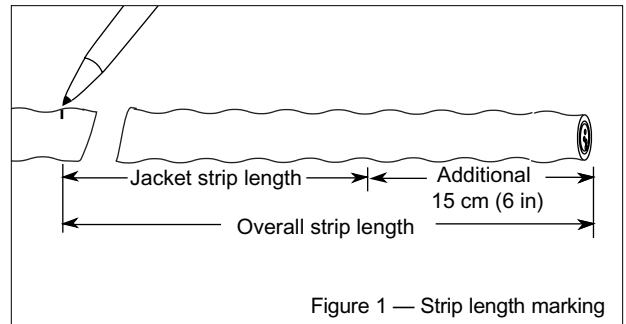


Figure 1 — Strip length marking

Step 2: Use a screwdriver to adjust the depth of one of the cable cutter's side blades just beyond the thickness of the outer jacket (Figure 2). The other blades must be fully retracted. Afterwards, check the blade depth by scoring the cable end.

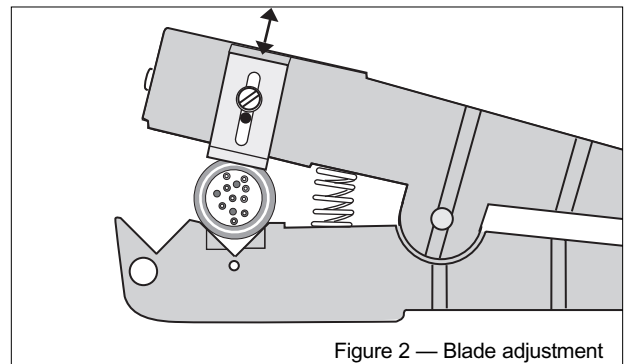


Figure 2 — Blade adjustment

Step 3: Using the large coaxial cable cutter, make a ring cut through the outer jacket *and score the armor* at the strip-length mark (Figure 3). It may take several rotations (5-7 or more) depending on blade sharpness.

Do not cut into inner cable jacket. It is safer to make several rotations, flex and try to snap the armor and repeat the process rather than to cut through outer and inner jackets at once.

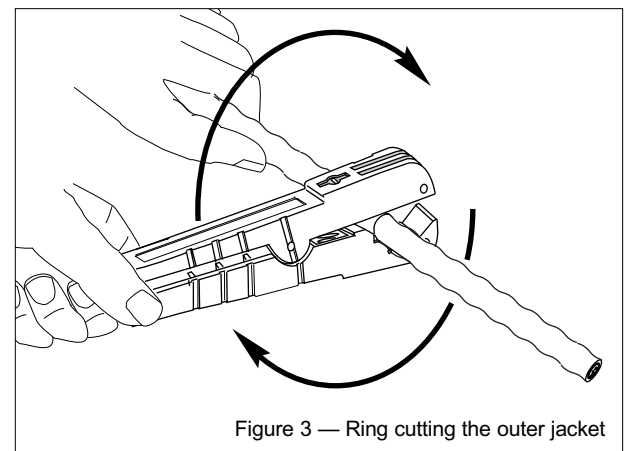


Figure 3 — Ring cutting the outer jacket

Step 4: Gently flex the cable until the DX armor snaps and remove the armor and outer jacket to expose the inner cable (Figure 4).

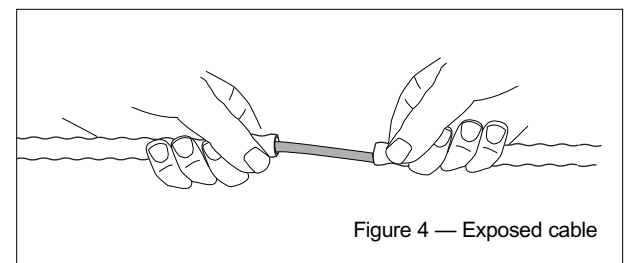
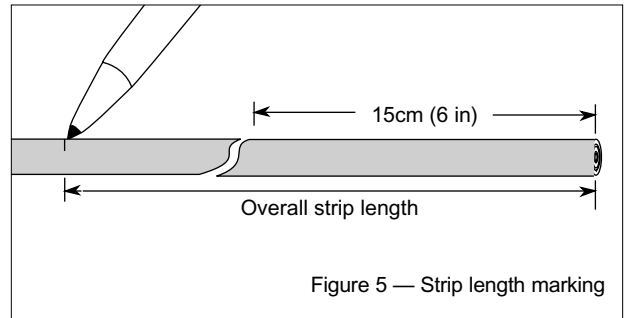


Figure 4 — Exposed cable

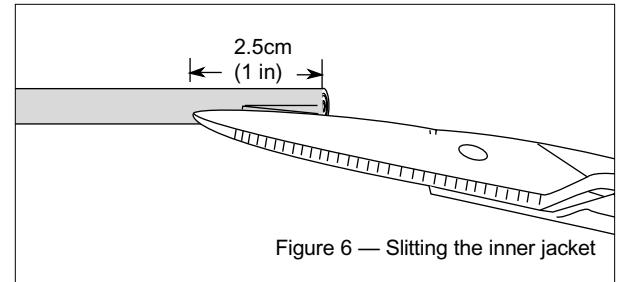
For DX Armored Riser cables, see Section 5 - *Inner Cable Sheath Removal*. For DX Armored Plenum cables, see Section 6 - *Inner Cable Sheath Removal - DX Armored Plenum Cable*.

5. Inner Cable Sheath Removal - DX Armored Riser Cable

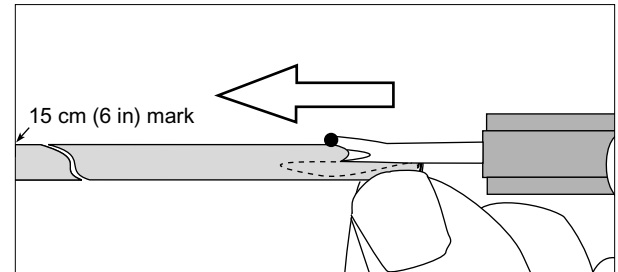
Step 1: Determine the strip length required for your hardware or installation. Add 15 cm (6 in.) to this length in case the fibers are damaged during the initial jacket removal steps. Use a measuring tape and a permanent marker to measure and mark this overall strip length on the cable (Figure 5).



Step 2: Starting at the end of the inner cable sheath, use scissors to slit the sheath about 2.5 cm (1 in.) (Figure 6).

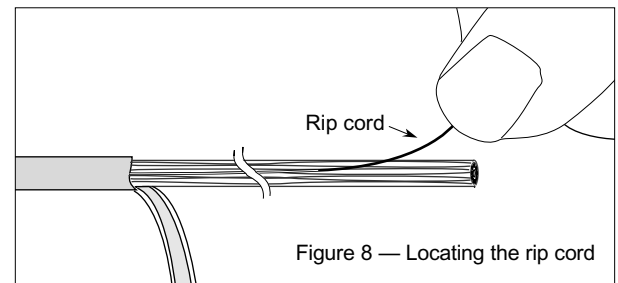


Step 3: Insert a seam ripper into the slit between the jacket and the aramid yarn. Keep the point of the ripper parallel to the jacket while ripping the sheath open. Stop at the 15 cm (6 in.) mark made in Step 1 (Figure 7).

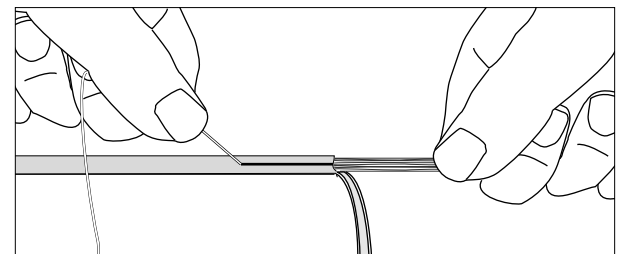


Note: If aramid yarn bunches up on the end of the ripper, withdraw the ripper, reinsert it, and continue to slit the sheath.

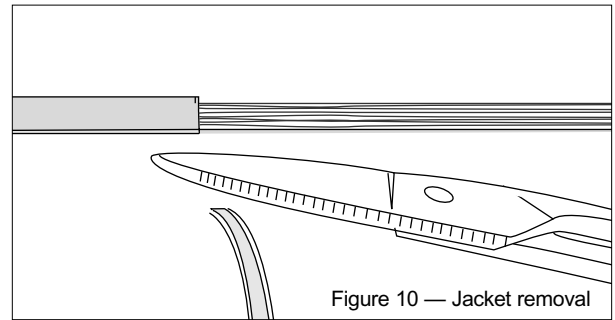
Step 4: Peel back the 15 cm (6 in.) section of outer jacket to expose the fibers, aramid yarn, and rip cord. Separate the rip cord from the yarn (Figure 8).



Step 5: Pull the rip cord through the outer jacket back to the marked strip length (Figure 9).

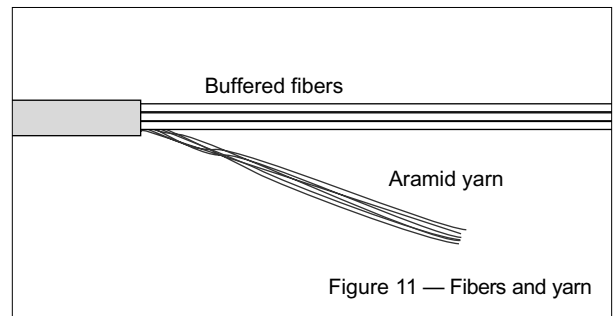


Step 6: Remove the split length of outer jacket. Trim the jacket as close as possible to the marked strip length with scissors (Figure 10).



Step 7: Separate the aramid yarn from the fibers. You can blow on the fibers to help separate the yarn.

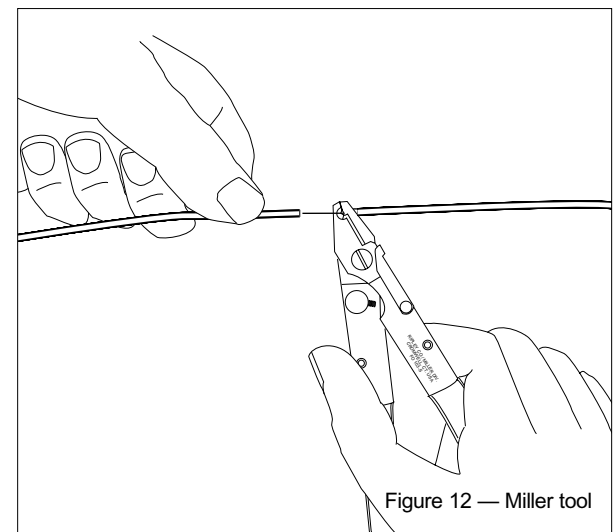
Step 8: Use scissors to cut the aramid yarn and central member to the lengths recommended in the documentation for the product you are installing (Figure 11).



Step 9: Route the fibers to their intended destination. Verify their length and shorten the fibers with scissors if necessary. Separate the fibers and select one to strip.

Step 10: Using the Miller tool, score the tight-buffered fiber coating at the desired strip location (Figure 12).

Using your fingers, pull the tight-buffer coating off the fiber. Alternatively, the Miller tool may be used to grab the buffer and pull off the fiber. The TBII coating enables the removal of several inches of tight-buffer at one time.



Step 11: Again using the Miller tool, strip the optical fiber to remove the coating.

Step 12: Using a lint-free tissue soaked with alcohol, clean the stripped fibers (Figure 13). Avoid handling the cleaned area of fiber.

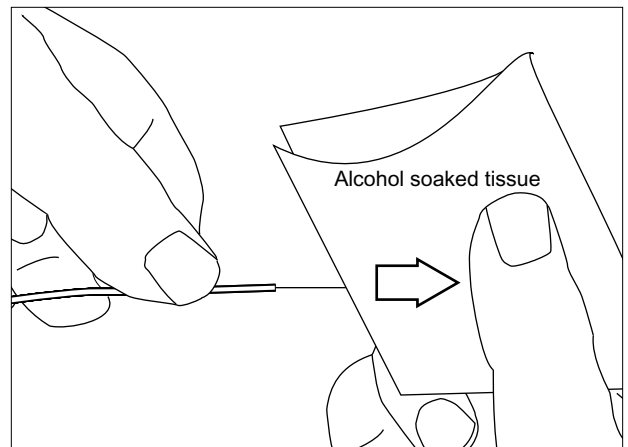


Figure 13 — Cleaning a fiber

Step 13: Terminate the fiber according to the instructions provided with the connector or splice hardware under installation or appropriate to the splicing.

6. Inner Cable Sheath Removal - DX Armored Plenum Cable

Step 1: Determine the strip length required for your hardware or installation. Use a measuring tape and a permanent marker to measure and mark this overall strip length on the cable (Figure 14).

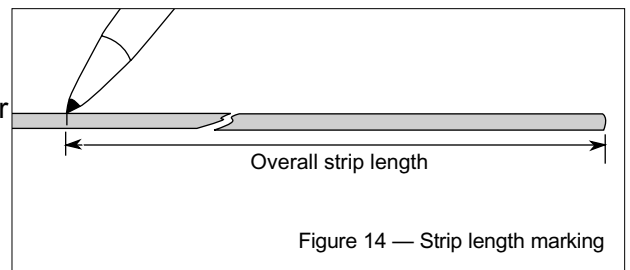


Figure 14 — Strip length marking

Step 2: Using the small coaxial cable cutter, make a ring cut through the outer jacket *and score the jacket* at the strip-length mark (Figure 15). It may take 1-2 rotations depending on blade sharpness.

Do not cut into inner cable jacket. It is safer to make several rotations, flex and try to snap the jacket and repeat the process rather than to cut too deeply and damage fibers.

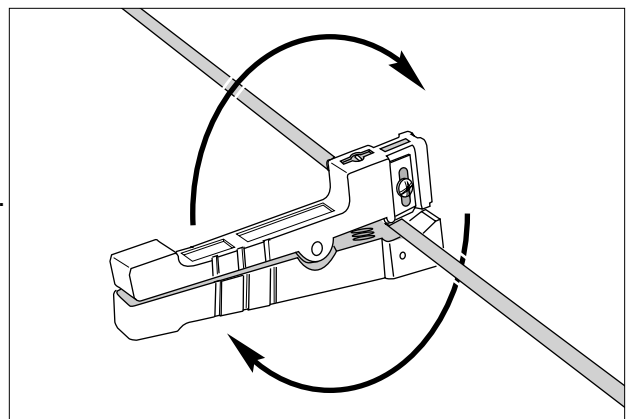


Figure 15 — Ring cutting the outer jacket

Step 3: Gently flex the cable until jacket snaps and remove the jacket to expose the inner fibers and yarn (Figure 16).

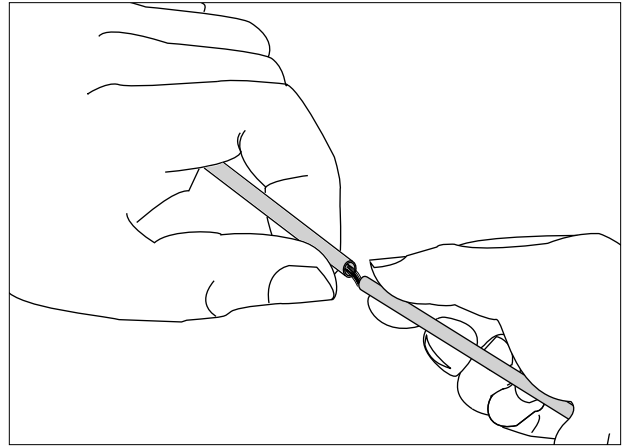


Figure 16 — Exposing the fibers

Step 4: Separate the aramid yarn from the fibers. You can blow on the fibers to help separate the yarn.

Step 5: Use scissors to cut the aramid yarn to the lengths recommended in the documentation for the product you are installing (Figure 17).

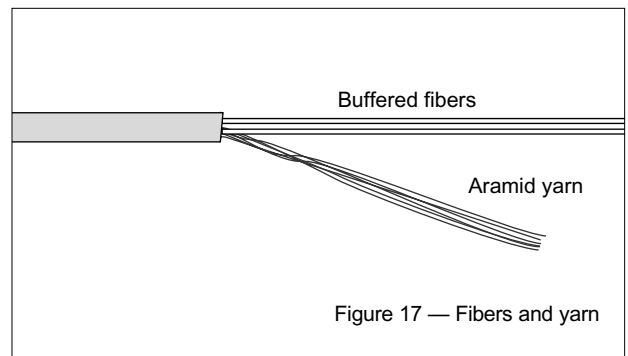


Figure 17 — Fibers and yarn

Step 6: Route the fibers to their intended destination. Verify their length and shorten the fibers with scissors if necessary. Separate the fibers and select one to strip.

Step 7: Using the Miller tool, score the tight-buffered fiber at the desired strip location (Figure 18).

Using your fingers, pull the tight-buffer coating off the fiber. Alternatively, the Miller tool may be used to grab the buffer and pull it off the fiber. The TBII coating enables the removal of several inches of tight-buffer at one time.

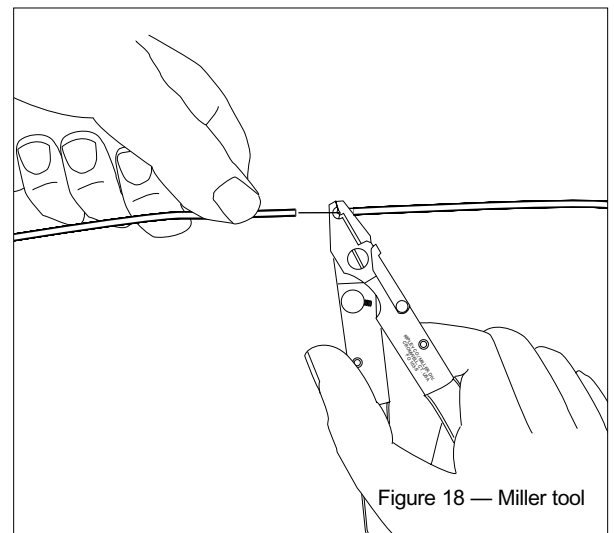


Figure 18 — Miller tool

Step 8: Again using the Miller tool, strip the optical fiber to remove the coating.

Step 9: Using a lint-free tissue soaked with alcohol, clean the stripped fiber (Figure 19). Avoid handling the cleaned area of fiber.

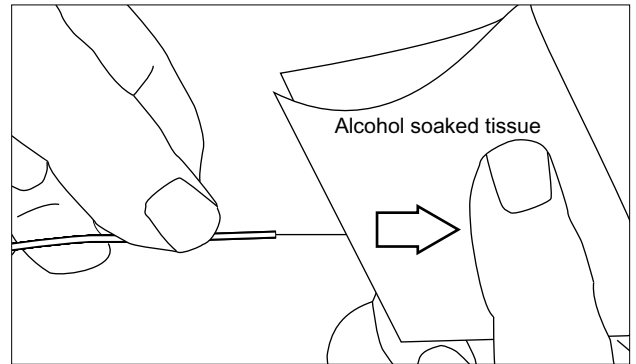


Figure 19 — Cleaning a fiber

Step 10: Terminate the fiber according to the instructions provided with the connector or splice hardware under installation or appropriate to the splicing.

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