Sheath Removal and Stripping of 8 and 12-Fiber Ribbon Interconnect Cables

1. General

1.1 This procedure describes the sheath removal and stripping 8 and 12-fiber ribbon fiber optic interconnect cables.

1.2 Corning Cable Systems ribbon interconnect cables are lightweight, flame retardant cables designed for high performance transmission of digital and analog signals in process control, computer and video applications (Figure 1). This cable series is available in eight or twelve fibers with single-mode, 50 µm or 62.5 µm cores for use with a wide variety of optical sources and detectors.

1.3 The term "ribbon" refers to the way the optical fibers are held together. Eight or twelve color coded 250 µm coated fibers are held side-by-side with an acrylate material.

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

2.2 Chemical Precautions

Isopropyl Alcohol

WARNING: *Flammable. Flashpoint 59° F. 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. Use with adequate ventilation.*

2.3 Cable 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 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.*

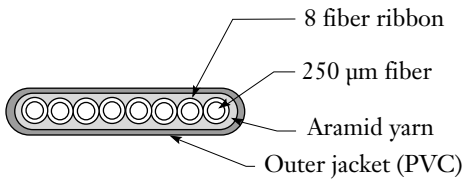

Figure 1

2.4 Laser Handling 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 The following tools are required to strip ribbon interconnect cables:

- Utility knife with straight blade
- Scissors
- Alcohol
- Lint-free tissues
- Permanent ink marker
- Rule or tape measure
- Electrical tape or wire marker
- Spatula

4. Outer Jacket Removal

4.1 Determine the cable strip lengths (i.e., the lengths of jacket to *remove*, and aramid yarn to *leave*) from the instruct-ions provided with the connectors, or other fiber optic devices you are installing on the cable. Mark this distance on both flat sides of the outer cable jacket with a permanent marker (Figure 2).

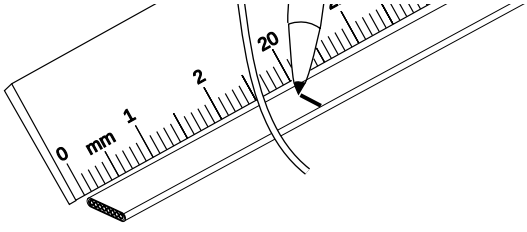

Figure 2

4.2 Using a sharp, straight knife:

a. Carefully *score* down the center of both flat sides of the marked length of jacket (Figure 3).

b. Score across the jacket on the length marks made in step 4.1.

Do NOT cut all the way through the jacket - only score the jacket. Use caution to prevent damaging the ribbon matrix and fibers.

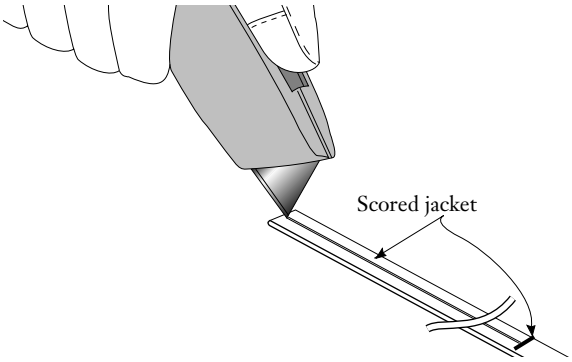

Figure 3

4.3 Use your fingertips to separate the jacket at the end of the cable. Peel back the jacket halves to the scored marks made in steps 4.1 an 4.2 (Figure 4)

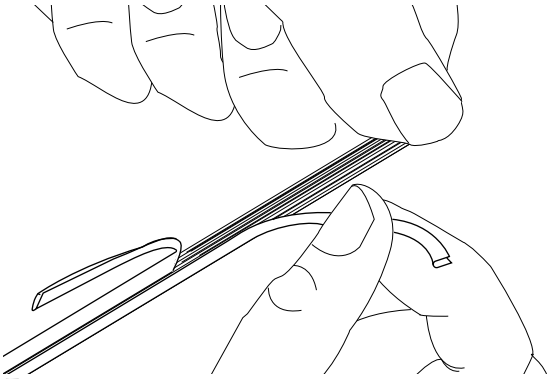

Figure 4

4.4 Remove the separated jacket halves flush with the marks. Trim with scissors, if necessary.

4.5 Cut the aramid yarn to length with scissors (Figure 5).

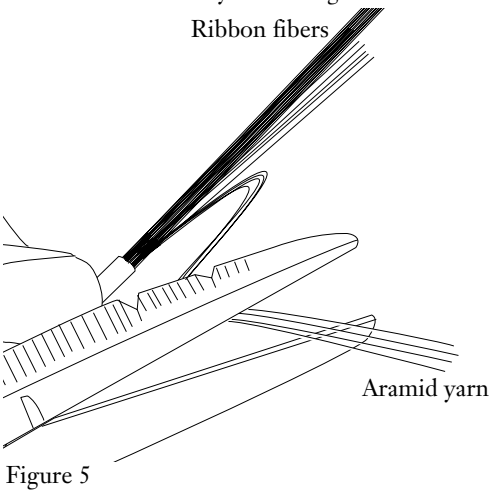

Figure 5

5. Procedure for Access at Ribbon End Points

5.1 Determine the length of ribbon to be broken out into individual fibers.

5.2 Measure the required distance on the ribbon with a tape measure and mark this point with a permanent marking pen (Figure 6.

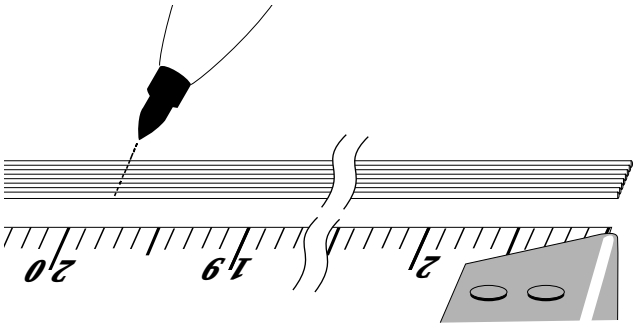

Figure 6

5.3 Wrap the ribbon at the mark with vinyl tape or a number marker to prevent excessive breakout of the ribbon (Figure 7.

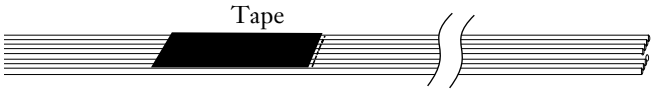

Figure 7

5.4 At the free end of the ribbon, use scissors to cut the end at a 45° angle (Figure 8).

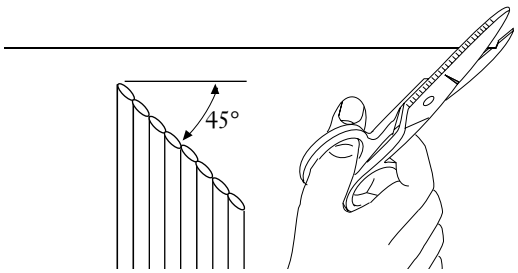

Figure 8

5.5 Using a spatula or finger nail, start to separate the longest fiber away from the rest of the ribbon (Figure 9).

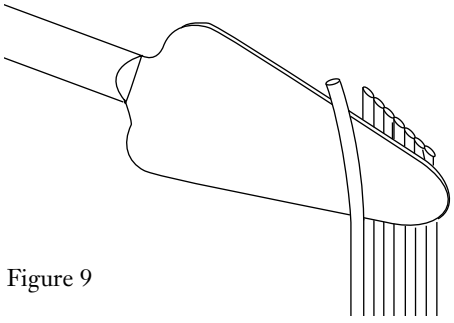

Figure 9

5.6 Pull this fiber until it is separated down to the wrap made in step 5.3 (Figure 10).

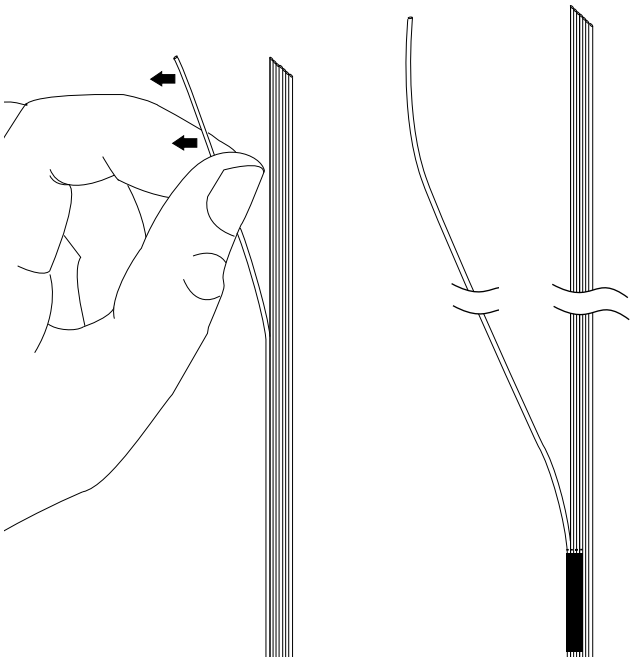

Figure 10

5.7 Repeat steps 5.5 and 5.6 for the remaining fibers in the ribbon.

If you break a fiber near its free end while trying to break it out, cut this fiber and the remaining unseparated fibers in the ribbon at a "new" 45° angle. Continue the separation process with the longest unseparated fiber.

5.8 Remove the ribbon matrix from the separated fibers by wiping the group of fibers with a lint-free tissue or cloth soaked in isopropyl alcohol. Wipe the fibers individually until all of the matrix material has been removed (Figure 10).

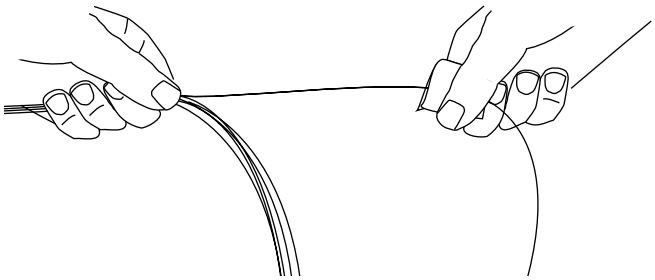

Figure 11

5.9 Verify that all the matrix material has been removed by running your fingers along the fibers. The fibers should feel and appear very uniform in dimension and texture.

Please note that some small amount of fiber color may have been removed – this is normal.

5.10 Wipe the fibers with a clean and dry lint-free tissue or cloth. The individual fibers are now ready for splicing or fan-out procedures.

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