



## SUMITOMO RECOMMENDED PROCEDURE

SRP SP-F04-006

FutureFLEX®

## FIBER BUNDLE STRIPPING PROCEDURE

<u>PARA.</u>	<u>CONTENTS</u>
1.0	General
2.0	Safety Precautions
3.0	Reference Documents
4.0	Equipment / Tools Required
5.0	Stripping 12-, 18-, and 24-Fiber Bundles
6.0	Stripping 4- and 6-Fiber Bundles
7.0	Stripping 2-Fiber Ribbon Bundles



**SUMITOMO ELECTRIC LIGHTWAVE CORP.**

78 TW Alexander Drive, Research Triangle Park, NC 27709  
(919) 541-8100 or 1-800-358-7378  
[www.futureflex.com](http://www.futureflex.com)

SEL is a Member of the Sumitomo Electric Industries, Ltd. Group

*Sumitomo Electric Lightwave reserves the right to improve or modify these specifications without notice.*

## 1.0 General

1.1 This procedure describes the standard techniques for stripping the jacketing materials from any FutureFLEX fiber bundle whenever the individual fibers are to be spliced or terminated.

1.2 FutureFLEX fiber bundles are available in strand counts of 2-, 4-, 6-, 12-, 18-, and 24-optical fibers. Typically, the jacketing materials consist of an outer foam jacket and an inner nylon jacket (Sub-Unit).

1.3 The outer foam jacket is a lightweight, aerodynamically designed Polyethylene Extruded Foam (PEF) material. The 2-, 4-, and 6-fiber bundles have a 2mm outside diameter outer foam jacket. The 12-, 18-, 24-fiber bundles have a 3mm outside diameter outer foam jacket.

1.4 The inner nylon jacket Sub-Unit is a clear nylon coating around the optical fiber strands. The Sub-Unit also contains a black Polyester ripcord (or ripcords) used to cut through the nylon coating. Some Sub-Unit designs contain more than one (1) ripcord. In these designs, the extra ripcords are used as "fillers" to give each Sub-Unit a consistent diameter.

1.5 The 2-strand fiber ribbon bundles are an exception. Two (2) optical fiber strands are in a standard ribbonized coating with an outer foam jacket; contain no nylon Sub-Unit or ripcords.

1.6 FutureFLEX fiber bundles do not have tensile strength members (Kevlar) nor contain any waterproofing gels / materials typically found in many conventional fiber optic cables.

## 2.0 Safety Precautions

2.1 When stripping jacketing materials from fiber bundles, use care and properly dispose of any individual fiber ends that are removed. The fiber ends are easily misplaced and can pierce the skin resulting in splinters that are not easily removed.

2.2 Exercise caution when using tools used to strip the jackets from fiber bundles. They may have sharp blades.

2.3 The use of safety glasses is strongly recommended during this procedure.

## 3.0 Reference Documents

3.1 Sumitomo Recommended Procedure, *FutureFLEX Field Termination Kit Installation Procedure for 900  $\mu$ m Sub-Unit Kit*, SRP SP-F04-010.

3.2 Sumitomo Recommended Procedure, *FutureFLEX Field Termination Kit Installation Procedure for FTFLD24 900  $\mu$ m Sub-Unit Kit*, SRP SP-F04-036.

## 4.0 Equipment / Tools Required

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

4.1 Felt tip pen / marker

4.2 Tape Measure

4.3 Multi-gauge (10-to-20 gauge) wire stripper

4.4 NO-NIK® #021 optical fiber coating stripper

4.5 Scissors

4.6 Soft, clean cloth

**Note:** *This SRP will describe the detail stripping procedures for 12-, 18-, 24-fiber 3mm OD bundles. Stripping procedures for the 4- and 6-fiber 2mm OD bundles are virtually identical and only the differences will be highlighted. Stripping procedures for the 2-fiber ribbon bundle will be described separately.*

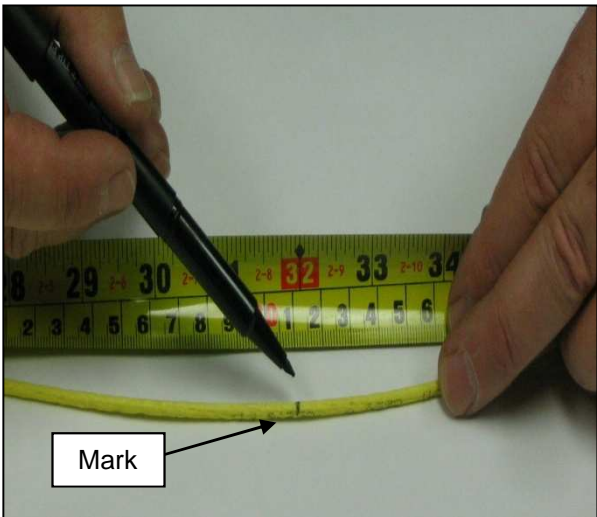
## 5.0 Stripping 3mm OD 12-, 18-, and 24-Fiber Bundles

### 5.1 Marking Outer Foam Jacket

Generally, at least 6" – 8" of additional fiber bundle strip length beyond the actual fiber required length should be provided. This is in case any optical fibers are damaged near the end of the bundle during stripping procedures. This point should be determined based on the actual fiber splicing / termination hardware used. (Also Consult splicing / termination hardware manufacturer's instructions for recommended strip length.)

5.2 Use a felt tip pen to mark fiber bundle outer foam jacket at appropriate location for jacket removal. **See Fig. 1.**

**Note:** *Field Termination Kits (FTFLD02, FTFLD04, FTFLD06, FTFLD12, and FTFLD18) have buffer tube lengths of about 24". Fiber bundle strip length should, therefore, be between 30"-32" . Field Termination Kit FTFLD24 has buffer tube lengths of about 36". Fiber bundle strip length should, therefore, be between 42"-44" .*

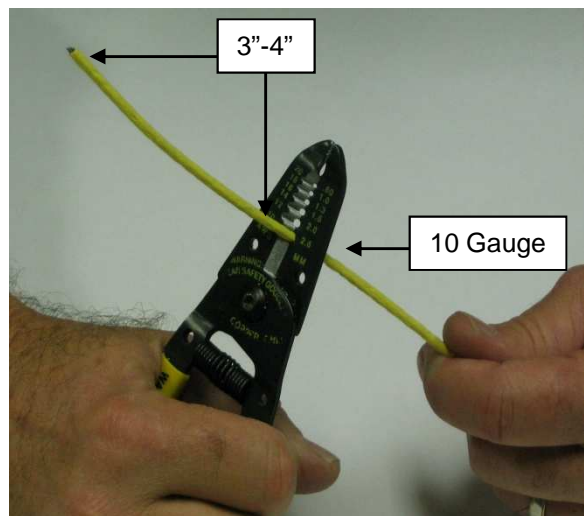


**Figure 1**

Marking Fiber Bundle Outer Foam Jacket  
Between 30" - 32" for 2- thru 18-Fiber Bundles  
Between 42" - 44" for 24-Fiber Bundles

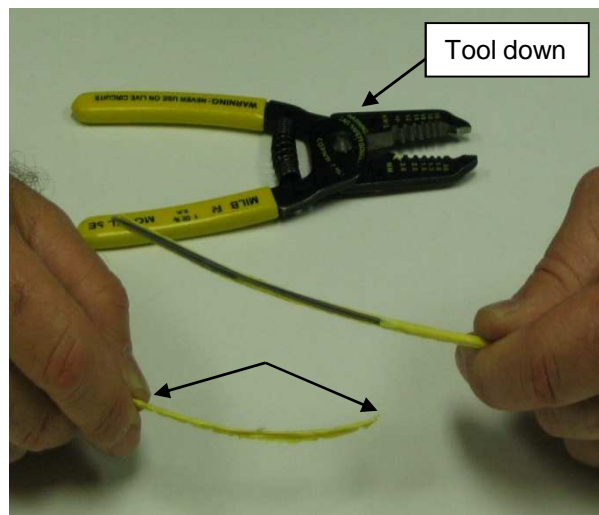
### 5.3 Stripping Outer Foam Jacket

Use a wire stripper to strip first 3" - 4" of outer foam jacketing. Insert bundle into **10 gauge** notches / cutting blades of wire stripper so bundle lays with the angle of the cutting blades. Use a light touch / squeeze and shear off a portion of outer jacket. *Then put the tool down.* **See Fig. 2a and Fig. 2b.**



**Figure 2a**

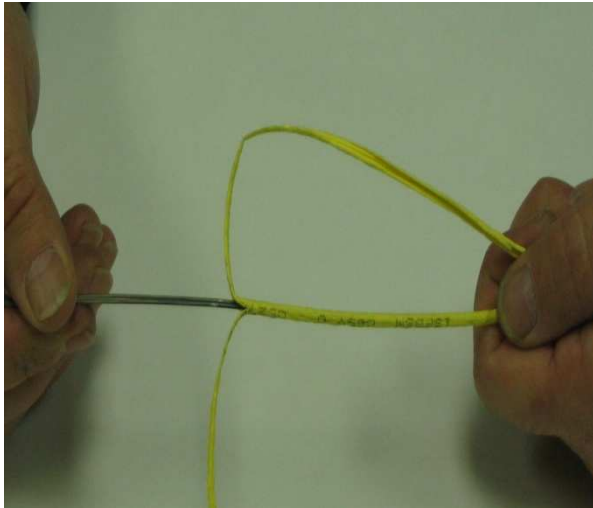
Stripping Foam Jacket with Wire Stripper



**Figure 2b**

Sheared Piece of Foam Jacket  
About 3" - 4"

5.4 Use fingernails to pull remaining foam back until it reaches point marked on outer jacket. If foam jacketing breaks during this step, re-engage with fingernails and continue. Then use scissors to carefully cut away outer jacket **See Fig. 3.**



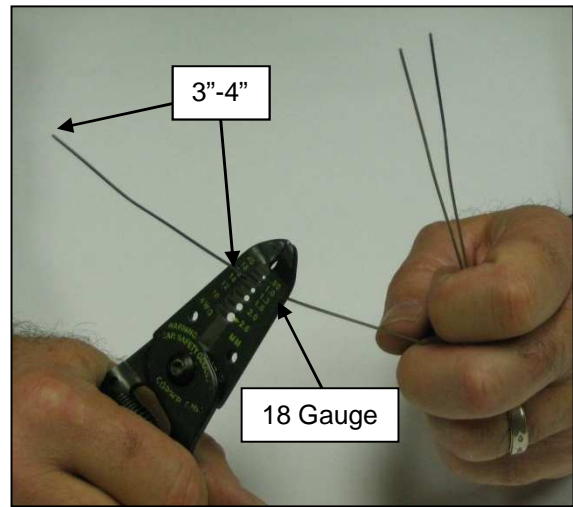
**Figure 3**

Pull Foam Jacket Back to Marked Point

**Note:** The 12-, and 18-fiber bundles have three (3) nylon Sub-Units. The 24-fiber bundle is slightly different. The 24-fiber bundle has four (4) nylon Sub-Units plus a 360-micron built-up scrap fiber strand. This scrap fiber strand serves as a central member to keep the four nylon Sub-Units in a square pattern. After the nylon jacket is stripped back, cut off the central member at the pre-determined mark.

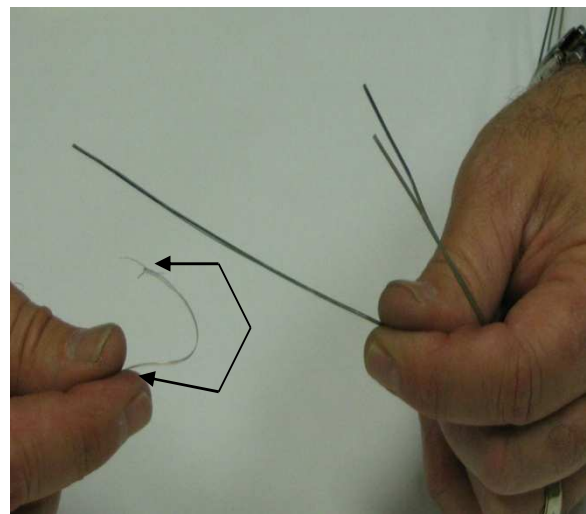
#### 5.5 Stripping Inner Nylon Jacket

Use a wire stripper to strip first 3" – 4" of nylon Sub-Unit. Insert first Sub-Unit into **18 gauge** notches / cutting blades of wire stripper so Sub-Unit lays with the angle of the cutting blades. Use a light touch / squeeze and shear off a portion of nylon. Then put the tool down. **See Fig. 4a and 4b.**



**Figure 4a**

Stripping Nylon Jacket with Wire Stripper



**Figure 4b**

Sheared Piece of Nylon

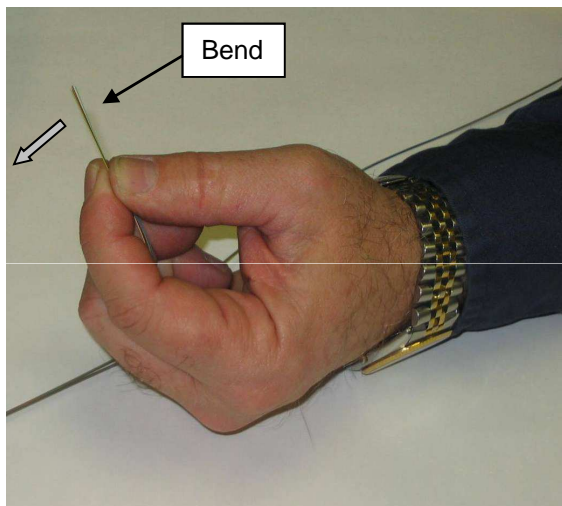
**Note:** Always attempt to strip nylon Sub-Units with 18 gauge wire stripper. However, if 18-gauge slot appears to be too big and cannot strip nylon, move down to smaller 20-gauge. Tool may be getting dull or worn.

## 5.6 Finding Ripcords

**Note:** The 12-fiber bundles have three (3) black Polyester ripcords in each Sub-Unit. The 18- and 24-fiber bundles have one (1) black Polyester ripcord in each Sub-Unit.

5.6.1 Access and separate black Polyester ripcords from among optical fibers and remaining nylon jacketing.

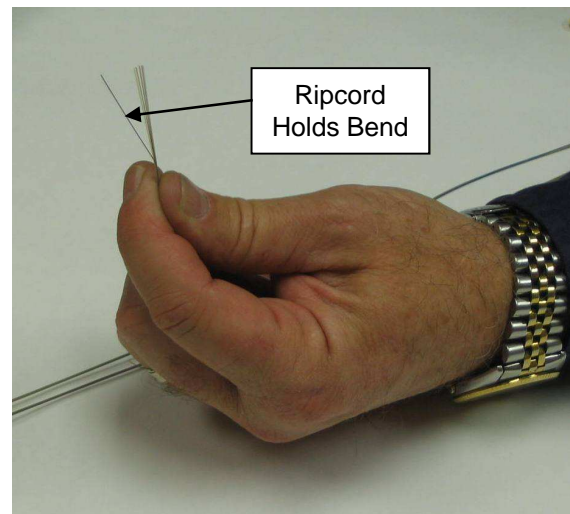
5.6.2 To help locate ripcord, pinch first inch of Sub-Unit between thumb and index finger. Gently bend fiber stands and ripcords over and then let them spring back. **See Fig. 5.**



**Figure 5**  
Pinch First Inch of Fiber Strands and Ripcords, Bend Over Gently, and Let Spring Back

5.6.3 The glass strands will be straight while the Polyester ripcords will hold the bend making them much easy to see. **See Fig. 6.**

**Note:** If ripcords were accidentally cut during first stripping procedure, repeat procedure about 3" - 4" back from first attempt. Use less angle and pressure on wire stripper.



**Figure 6**  
Fiber Strands Stay Straight  
Ripcords Hold Bend for Easy Access

## 5.7 Pulling Ripcords – 12-Fiber Bundles

To remove nylon jacket of 12-fiber bundles, select any one of the three (3) ripcords.

5.7.1 **Key Step.** With one hand, hold on to all fiber strands, other two ripcords, and any remaining nylon jacket. **See Fig. 7.**

5.7.2 With other hand, pull ripcord with slow, steady motion to cut through nylon jacket. Pull ripcord back until it reaches point marked on outer jacket.

5.7.3 **Important Step.** Use care when pulling ripcord. If it becomes tangled / twisted within fiber strands, *stop*. Untangle and then resume pulling operation.

## 5.8 Pulling Ripcord – 18- and 24-Fiber Bundles

To remove nylon jackets of 18- and 24-fiber bundles, there is only one (1) ripcord.

5.8.1 **Critical Step.** Ensure black ripcord in Sub-Unit is positioned next to blue strand fiber. If not, ripcord will be twisted amongst other strands and, when pulled, will break strands.

5.8.2 **Key Step.** With one hand, hold on to all fiber strands and any remaining nylon jacket. **Refer to Fig. 7.**

5.8.3 With other hand, pull ripcord with slow, steady motion to cut through nylon jacket. Pull ripcord back until it reaches point marked on outer jacket.

5.8.4 **Important Step.** Use care when pulling ripcord. If it becomes tangled / twisted within fiber strands, *stop*. Untangle and then resume pulling operation.

5.9 For all fiber bundles, carefully separate ripped nylon jacket from fiber strands. Pull nylon jacket back with slow, steady motion until it reaches point marked on outer jacket. Then use scissors to carefully cut away nylon and all ripcords.

5.10 Repeat procedure for remaining Sub-Units.

5.11 The 12-, 18-, and 24-fiber bundles are now ready for termination.

## 6.0 Stripping 2mm OD 4- and 6-Fiber Bundles

**Note:** *Stripping techniques for the 2mm OD 4- and 6-fiber bundles are extremely similar to those of the 12-, 18, and 24-fiber bundles. Only key differences are highlighted below.*

### 6.1 Marking Outer Foam Jacket -

Same procedure. Mark at 30" - 32". **Refer to Fig. 1.**

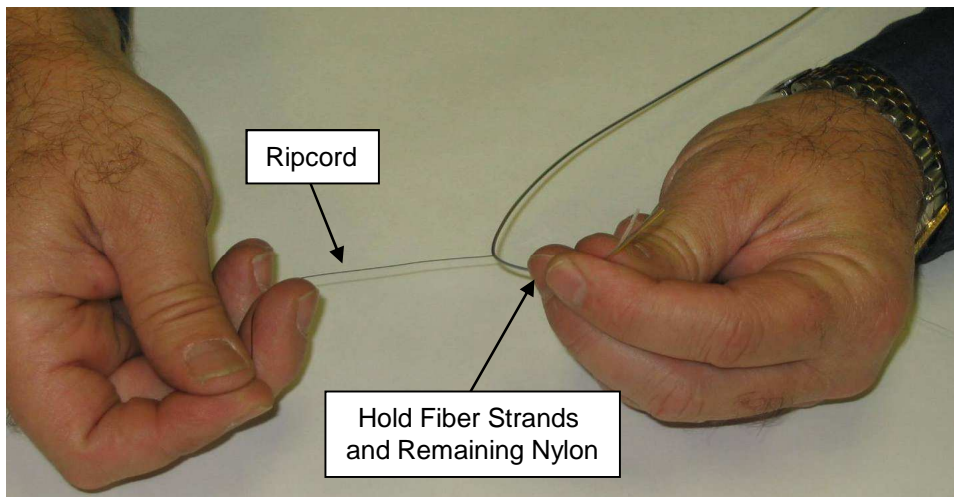
### 6.2 Stripping Outer Foam Jacket

Same procedure but use **12 gauge** of wire stripper. Use **14 gauge** only if required. **Refer to Fig. 2a and Fig. 2b.**

### 6.3 Stripping Inner Nylon Jacket

**Note:** *The 4- and 6-fiber bundles have one (1) nylon Sub-Unit.*

6.3.1 Same procedure. Use **18 gauge** of wire stripper. Use **20 gauge** only if required. **Refer to Fig. 4a and Fig. 4b.**



**Figure 7**

Hold Fiber Strands and Any Remaining Nylon  
Gently Pull Ripcord  
Be Watchful for Ripcord / Fiber Strand Tangling

#### 6.4 Finding Ripcords

**Note:** The 4-fiber bundles have three (3) black Polyester ripcords in their Sub-Unit (like the 12-fiber bundle Sub-Units). The 6-fiber bundles have one (1) black Polyester ripcord in their Sub-Unit (like the 18- and 24-fiber bundles).

6.4.1 Same procedure. **Refer to Fig. 5 and Fig. 6.**

#### 6.5 Pulling Ripcords – 4-Fiber Bundles

To remove nylon jacket of 4-fiber bundle, select any one of the three (3) ripcords.

6.5.1 Same procedure. **Refer to Fig. 7.**

#### 6.6 Pulling Ripcord – 6-Fiber Bundles

To remove nylon jacket of 6-fiber bundle, there is only one (1) ripcord.

6.6.1 **Critical Step.** Ensure black ripcord in Sub-Unit is positioned next to blue strand fiber. If not, ripcord will be twisted among other strands and, when pulled, will break strands.

6.6.2 Same procedure. **Refer to Fig. 7.**

6.7 For all fiber bundles, carefully separate ripped nylon jacket from fiber strands. Pull nylon jacket back with slow, steady motion until it reaches point marked on outer jacket. Then use scissors to carefully cut away nylon and all ripcords.

6.8 The 4- and 6-fiber bundles are now ready for termination.

#### 7.0 **Stripping 2-Fiber Ribbon Bundles**

##### 7.1 Marking Outer Foam Jacket

Same procedure. **Refer to Fig. 1.**

##### 7.2 Stripping Outer Foam Jacket

Same procedure as with 4- and 6-fiber bundles. **Refer to Fig. 2a and Fig. 2b.**

##### 7.3 Separating 2-Strand Ribbon

Use NO-NIK® #021 optical fiber coating stripper to remove approximately 1” of clear, inner coating off the end of the fiber pair.

7.3.1 Starting at the end of the fibers, separate the two (2) fibers by gently pulling one fiber away from the other causing ribbonized coating to split.

7.3.2 Gently pull fibers apart until they reach the point marked on outer jacket.

7.4 Gently peel the remaining clear, inner coating from each of the fibers by pulling each fiber between the folds of a soft clean cloth.

7.5 The 2-fiber ribbon bundle is now ready for termination.