



## SUMITOMO RECOMMENDED PROCEDURE

SRP SP-F04-036

FutureFLEX®

### FIELD TERMINATION KIT PROCEDURE FOR FTFLD24 900µm SUB-UNIT KIT

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## 1.0 General

1.1 This procedure describes the standard techniques for installing FutureFLEX Air-Blown Fiber (ABF) 24-fiber bundle using a FTFLD24 Field Termination Kit with 900µm sub-units / colored-coded tubes.

1.2 Field Termination Kits are used at locations where fiber bundles containing 250µm fibers are to be terminated and connectorized at fiber optic patch panels, switches, or transmitter / receiver locations.

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

## 3.0 Reference Documents

3.1 Sumitomo Recommended Procedure, *FutureFLEX Fiber Bundle Stripping Procedure*, SRP SP-F04-006.

## 4.0 Equipment / Tools Required

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

4.1 FTFLD24 Field Termination Kit with 900µm sub-units

4.2 Adhesive Tape

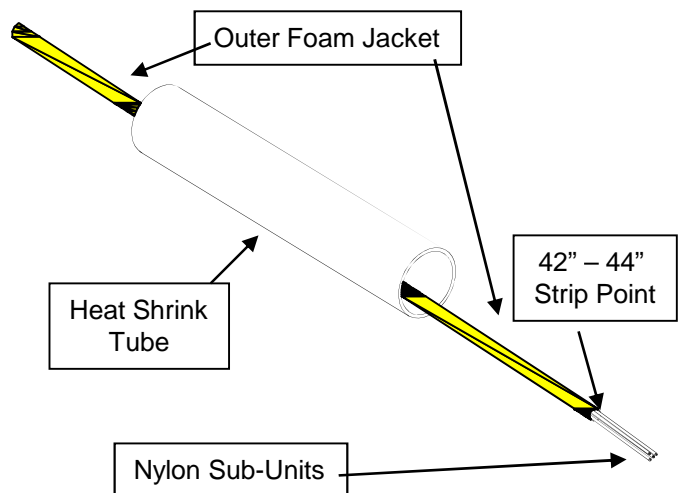
4.3 Heat Gun

4.4 Appropriate clean work surface / table

## 5.0 Preparing the Fiber Bundle

5.1 Provide at least 6" – 8" of additional fiber bundle strip-length beyond the actual fiber length required. SEL's FTFLD24 Field Termination Kit has an approximate 36" buffer tube length. Therefore, the 24-fiber bundle jackets should be stripped back at least 42" – 44".

5.2 **Important Step.** When terminating a 24-fiber bundle, before stripping the outer foam jacket, slide the heat shrink tube provided in FTFLD24 Field Termination Kit over end of fiber bundle. Position it slightly beyond the 42" – 44" point. **See Fig. 1.**



**Figure 1**  
Slide Heat Shrink Tube Over Fiber Bundle  
Before Stripping Nylon Sub-Units

5.3 Refer to SRP SP-F04-006 for detailed fiber bundle stripping procedures and techniques on how to remove the outer foam jacket, access sub-unit ripcords, and remove inner nylon jackets.

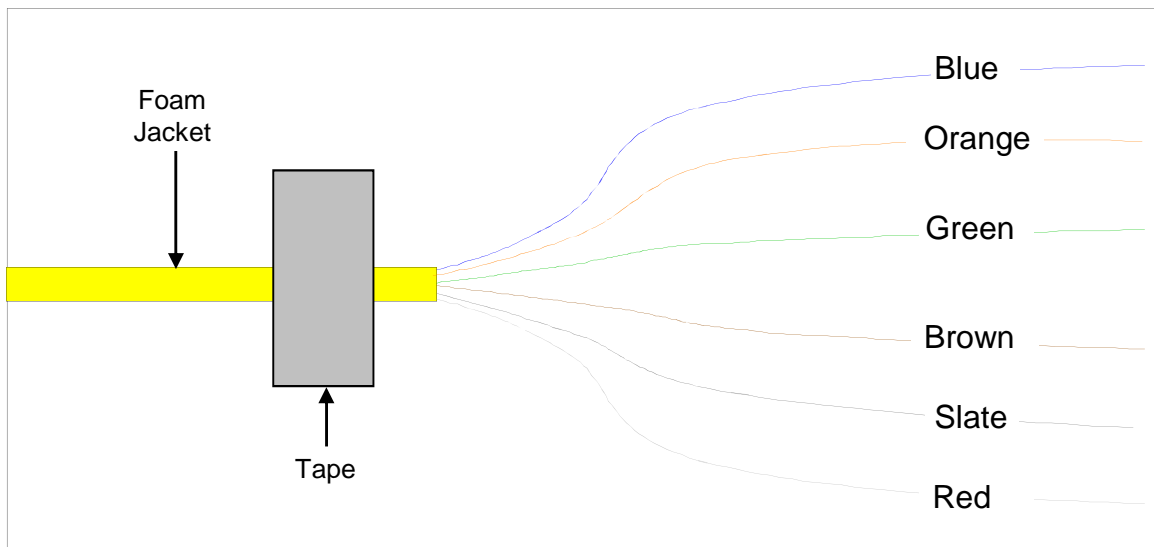
5.4 Once the fiber bundle has been stripped, secure outer foam jacket to work surface with adhesive tape

5.5 Separate and organize fiber bundle strands. At the point where the strands exit nylon sub-unit, carefully arrange them so they are not crossed and carefully separate them along their entire length. **See Fig. 2.**

5.5.1 24-fiber bundle strands are contained within four (4) nylon sub-units in the following color-order sequence:

- Blue, Orange, Green, Brown, Slate, & Red
- Blue, Orange, Green, Brown, Slate, & Yellow
- Blue, Orange, Green, Brown, Slate, & Violet
- Blue, Orange, Green, Brown, Slate, & Rose

**Note:** In 24-fiber bundles, the sixth position strand in each sub-unit (normally White) is replaced with a Red-, Yellow-, Violet-, and Rose-colored strand that serves as a unique sub-unit identifier.



**Figure 2**  
Organizing 6-Fiber Bundle Strands in Color-Order Sequence  
(Other Yellow, Violet, and Rose Sub-Units Similar)

**6.0 FTFLD24 Field Termination Kit**

6.1 FTFLD24 Field Termination Kit consists of a Base Unit, Cover Unit, two (2) Breakout Unit Assemblies, and a 2" piece of Heat Shrink Tubing. See Fig. 3.

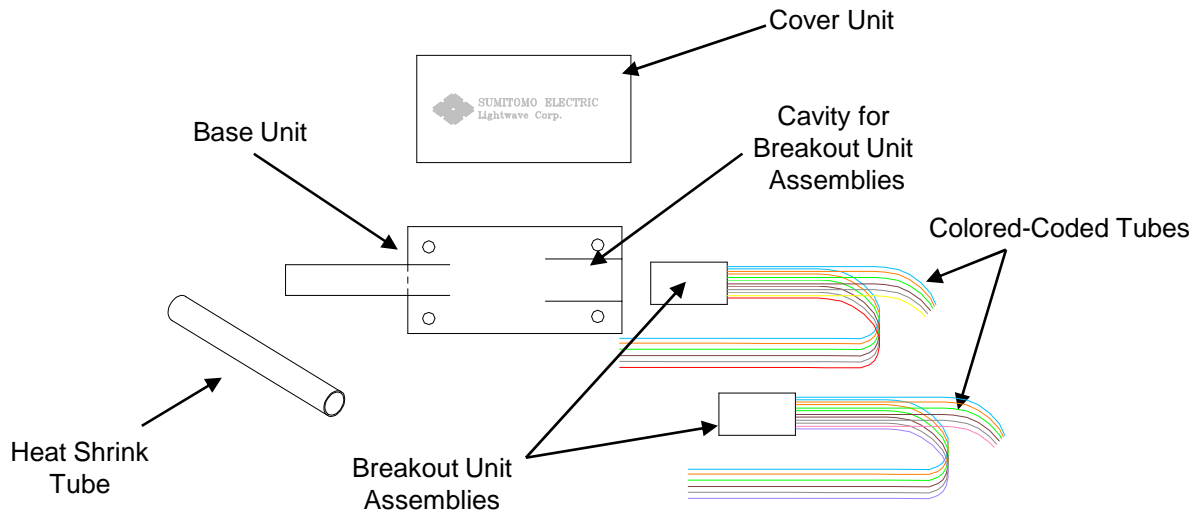
6.2 Base Unit cavity holds two (2) stackable Breakout Unit Assemblies.

6.3 Breakout Unit Assemblies consist of two (2) rectangular black plastic break-out blocks, each with 12 color-coded 900µm OD tubing installed

in the appropriate holes. Fiber strands are threaded through the tubes, by color, then terminated using standard fiber optic termination procedures and connectors. These units stack, one on top of the other, into the Base Unit cavity.

6.4 Heat Shrink Tube secures the 24-fiber bundle to the Base Unit.

6.5 Cover Unit snaps onto Base Unit to secure Breakout Unit Assembly and protect exposed bare fibers.



**Figure 3**  
 FTFLD24 Field Termination Kit Components

<p><u>Base Unit Specifications</u>          Dimensions (in.): 1.70 L x 0.70 W x 0.150 D          Material: ABS Plastic          Color: Black          Logo: FTFLDxx</p>
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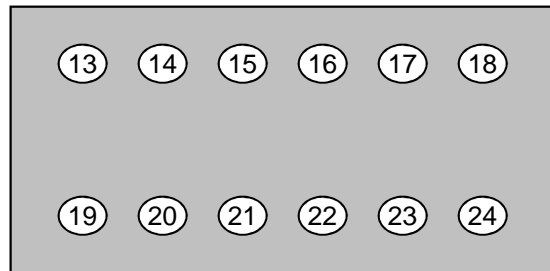
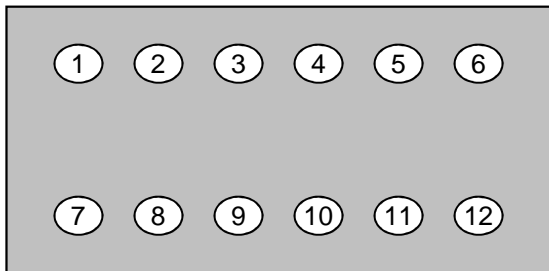
<p><u>Cover Unit Specifications</u>          Dimensions (in.): 1.70 L x 0.70 W x 0.150 D          Material: ABS Plastic          Color: Black          Logo: Sumitomo Electric</p>
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<p><u>Tubing Specifications</u>          Dimensions: mm / (in.):          ID: 0.50mm +/- 0.05mm (0.020 +/- 0.002)          OD: 0.90mm +/- 0.05mm (0.035 +/- 0.002)          Length: Approximately 36 inches</p> <p>Mechanical:          Max. Tensile Load: 45 Newtons          Min. Bend Radius: 1.3 cm          Crush Resistance: 52 N/cm Max.          Temp. Rating: -40C (-40F) to +85C (+175F)          Material: Thermoplastic Elastomer</p>
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6.6 Breakout Unit Assembly tube colors and arrangement matches fiber bundle strand colors and arrangement. **See Fig. 4.**

Tube	Color	Tube	Color
1	Blue	7	Blue
2	Orange	8	Orange
3	Green	9	Green
4	Brown	10	Brown
5	Slate	11	Slate
6	Red	12	Yellow

Tube	Color	Tube	Color
13	Blue	19	Blue
14	Orange	20	Orange
15	Green	21	Green
16	Brown	22	Brown
17	Slate	23	Slate
18	Violet	24	Rose



**Figure 4**  
 Breakout Unit Assembly Tube Colors & Arrangement

### 7.0 Assembling the Field Termination Kit

7.1 Prepare the Red-Yellow Breakout Unit Assembly first.

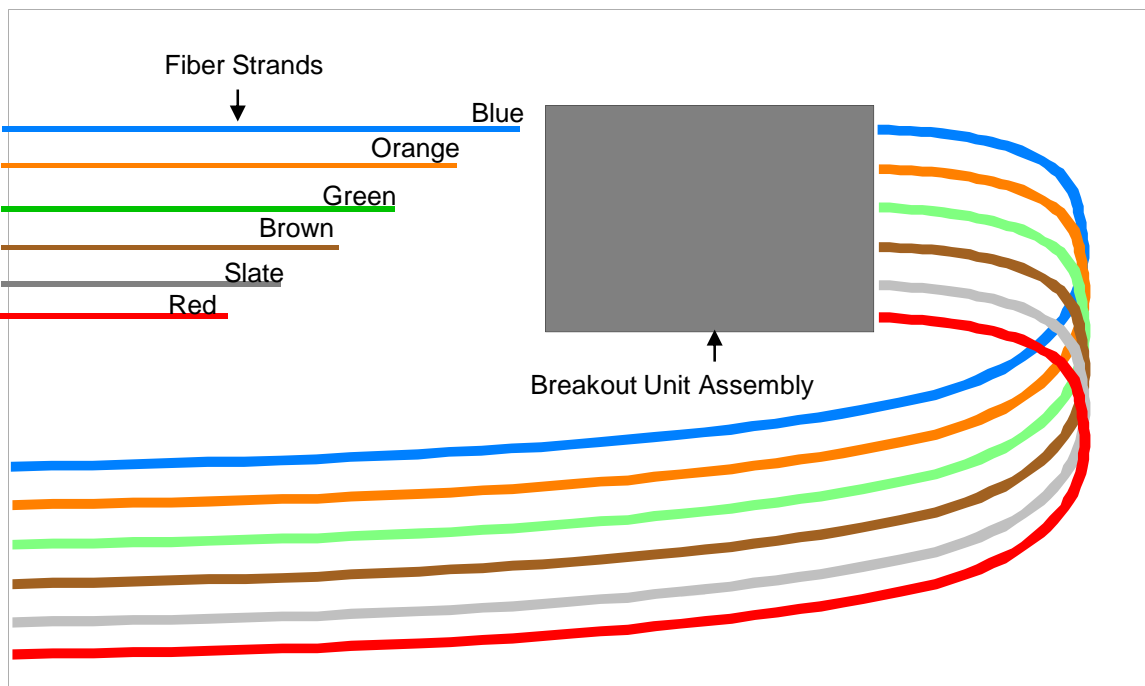
7.2 Begin with the Red sub-unit. Insert each fiber into its colored-coded tube. Begin with the longest (blue) strand first, followed by the longest remaining strand (orange), and so on until all fibers are started into the Breakout Unit Assembly tubes. Work carefully, comb the fibers, and ensure strands are not crossed or twisted. **See Fig. 5.**

7.3 Repeat the process with the Yellow Sub-Unit.

7.4 Once all the strands of the Red and Yellow sub-units are inserted, carefully grasp and push all fibers through the Breakout Unit Assembly tubing as a group.

7.5 Prepare the Violet-Rose Breakout Unit Assembly next.

7.6 Begin with the Violet sub-unit, then do the Rose sub-unit, and repeat the process.



**Figure 5**  
Fiber Strands in Color-Order and Staggered Arrangement  
Ready to be Inserted into Breakout Unit Block One at a Time  
Then Pushed Through Tubes as a Group

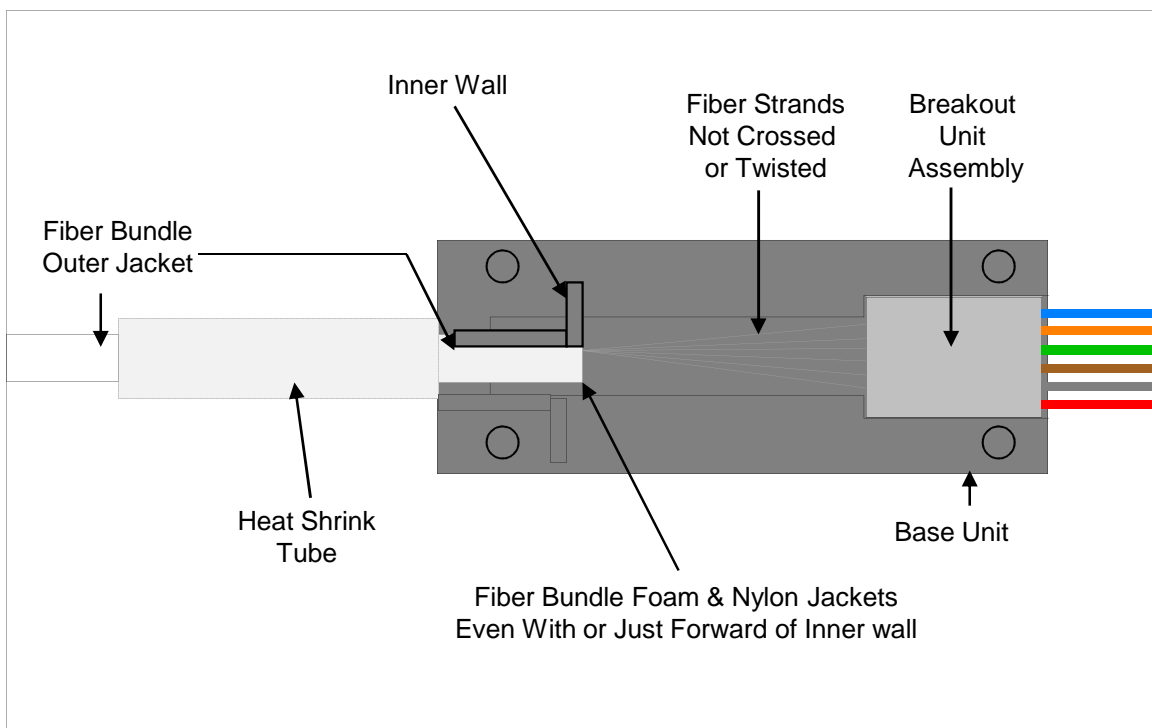
7.7 Once all fibers are inserted into Breakout Unit Assembly tubes, re-confirm that fiber strands are not crossed or twisted over each other between the end of the nylon jackets and the Breakout Unit Assembly block. Crossed fibers may cause additional optical attenuation due to macro-bending. If fibers are crossed, they should be carefully removed from the Breakout Unit Assembly tubes, straightened out, and re-threaded.

7.8 Carefully place each Breakout Unit Assembly into Base Unit cavity. Install Red-Yellow Assembly first (on bottom) and then Violet-Rose Assembly second (on top) to maintain correct color-order sequence. **See Fig. 6.**

7.9 Carefully push all the fibers as a group into Breakout Unit Assemblies until ends of fiber bundle outer foam and inner nylon jackets are even with or just forward of Base Unit's Inner Wall.

7.10 Slide the Heat Shrink Tube into position over the Heat Shrink Tube Retainer and up against the body of the Base Unit. Using a Heat Gun, very carefully apply heat to the Heat Shrink Tube until it shrinks tightly over the Retainer and fiber bundle.

7.11 Complete FTFLD24 Field Termination Kit assembly by snapping Cover Unit onto Base Unit.



**Figure 6**  
FTFLD24 Field Termination Kit Assembled