

**SUMITOMO RECOMMENDED PROCEDURE****SRP SP-F04-043****FIELD TERMINATION KIT PROCEDURE FOR  
FT18FBK 900µm SUB-UNIT KIT**

<b><u>PARA.</u></b>	<b><u>CONTENTS</u></b>
1.0	General
2.0	Safety Precautions
3.0	Reference Documents
4.0	Equipment / Tools Required
5.0	Preparing the Fiber Bundle
6.0	FT18FBK Field Termination Kit
7.0	Assembling the FT18FBK Field Termination Kit

SUMITOMO ELECTRIC LIGHTWAVE CORP.

201 South Rogers Lane, Suite 100, Raleigh, NC 27610

(919) 541-8100 or 1-800-358-7378

[www.sumitomoelectriclightwave.com](http://www.sumitomoelectriclightwave.com)

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## 1.0 General

1.1 This procedure describes the standard techniques for installing FutureFLEX Air-Blown Fiber (ABF) 18-fiber bundles into a FT18FBK, Field Termination Kit with 900 $\mu$ m sub-units / colored-coded tubes.

1.2 Field Termination Kits are used at locations where fiber bundles containing 250 $\mu$ m fibers are to be terminated and connectorized at fiber optic patch panels, switches, or transmitter / receiver locations with splice on connectors.

## 2.0 Safety Precautions

2.1 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 FT18FBK Field Termination Kit with 900 $\mu$ m sub-units

4.2 Adhesive Tape

4.3 measuring tape

4.4 Appropriate clean work surface / table

4.5 cutting tool (scissors or

4.6 wire strippers (10 – 20 AWG positions)

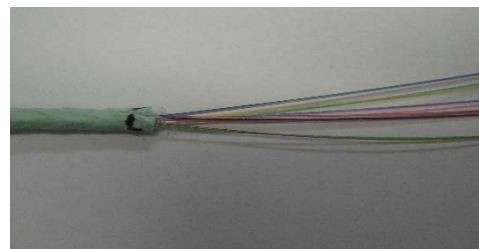
## 5.0 Preparing the Fiber Bundle

5.1 Provide at least 6" – 10" of additional fiber sub unit strip-length beyond the actual fiber length required. SEL's FT18FBK Field Termination Kit has an approximate 24" buffer tube length. Therefore, the 6 - fiber sub units should be stripped back at least 30" – 34".

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, install the 3 mm bushing over the PEF jacket and secure it to work surface with adhesive tape.

5.5 Separate and organize fiber bundle strands and assemblies. At the point where the strands exit the nylon sub-unit, carefully arrange them so they are not crossed and carefully separate them along their entire length. **See Fig. 1**



**Figure 1**  
18 Fiber Bundle Stripped and Fibers Fanned Out

5.5.1 18-fiber bundle contains three clear nylon sub-units of 6 fibers each in the following color-order sequence. Each subunit corresponds to the breakout kit subunit they will be placed in.

**Sub-unit:#1**

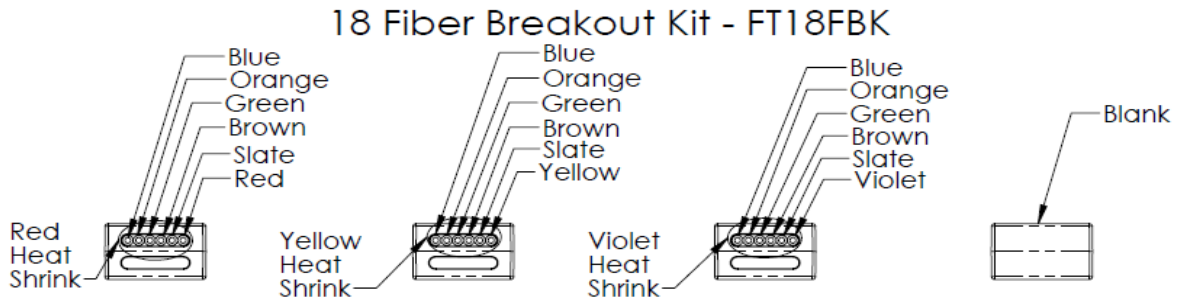
Blue, Orange, Green, Brown, Slate, Red

**Sub-unit:#2**

Blue, Orange, Green, Brown, Slate, Yellow

**Sub-unit:#3**

Blue, Orange, Green, Brown, Slate, Violet



**Figure 2**

Individual Breakout Sub Unit Organization

**6.0 FT18FBK Field Termination Kit**

6.1 FT18FBK Field Termination Kit consists of a Base Unit, Cover Unit, Four (4) Breakout Unit Assembly blocks and a 3mm bushing. **See Fig 3.**

6.2 Base Unit cavity holds four (4) stackable Breakout Unit Assembly blocks.

6.3 Breakout Unit Assembly consists of four(4) rectangular black plastic break-out blocks, three with 6 color-coded 900µm OD tubing installed and one (1) blank block.

6.3.1 In the appropriate colored holes insert each of the 6 fiber strands of each sub unit through the block into the colored tubes. These units stack, one on top of the other, into the Base Unit cavities, 2 on each side.

6.4 The 3mm bushing secures the 18-fiber bundle in the Base Unit to avoid pullout.

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



**Figure 3**

FTFLD18 Field Termination Kit Components

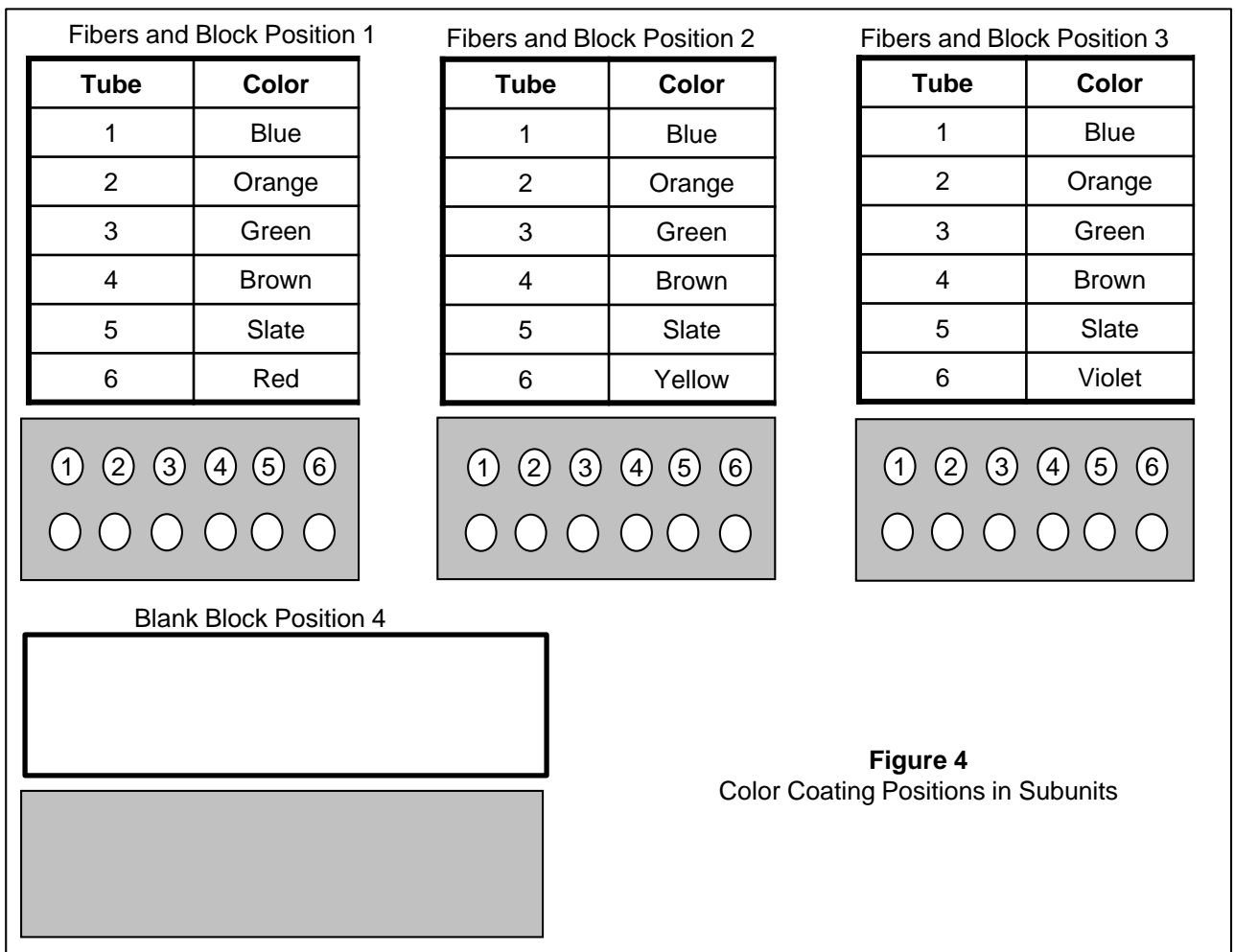
**Base Unit Specifications**  
 Dimensions (in.): 2.25" L x 1.0" W x 0.6" H  
 Material: ABS Plastic  
 Color: Black  
 Logo: FTFLD48

**Cover Unit Specifications**  
 Dimensions (in.): 2.25" L x 1.0" W x 0.6" H  
 Material: ABS Plastic  
 Color: Black  
 Logo: Sumitomo Electric

**Tubing Specifications**  
 Dimensions: mm / (in.):  
 ID: 0.50mm +/- 0.05mm (0.020 +/- 0.002)  
 OD: 0.90mm +/- 0.05mm (0.035 +/- 0.002)  
 Length: Approximately 24 inches

**Mechanical:**  
 Max. Tensile Load: 45 Newtons / 10 lbs.  
 Min. Bend Radius: 1.3 cm / 0.5 inch  
 Crush Resistance: 52 N/cm Max. / 0.03 lbs/in  
 Temp. Rating: -40°C - +85°C (-40°F - +175°F)  
 Material: Thermoplastic Elastomer

6.6 Breakout Unit Assembly tube colors and arrangement matches ABF fiber bundle strand colors and arrangement. (See Fig. 4)



**Figure 4**  
 Color Coating Positions in Subunits

## 7.0 Assembling the Field Termination Kit

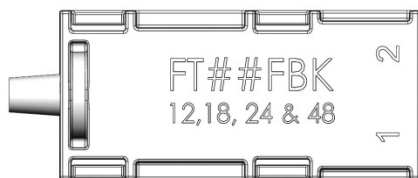
7.1 Prepare the sub unit and Breakout Assemblies first as in Figure 2.

7.2 Install the 3 mm bushing onto the end of the stripped back PEF jacket.

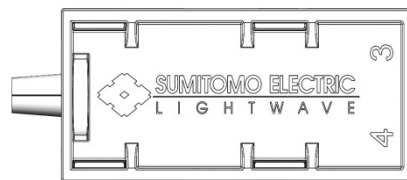
7.3 Insert each fiber into its colored-coded tube. Begin with the blue strand first, followed by the orange, and so on until all 6 fibers are started into the Breakout Unit Assembly 900 $\mu$ m tubes. Work carefully, comb the fibers, and ensure strands are not crossed or twisted.

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

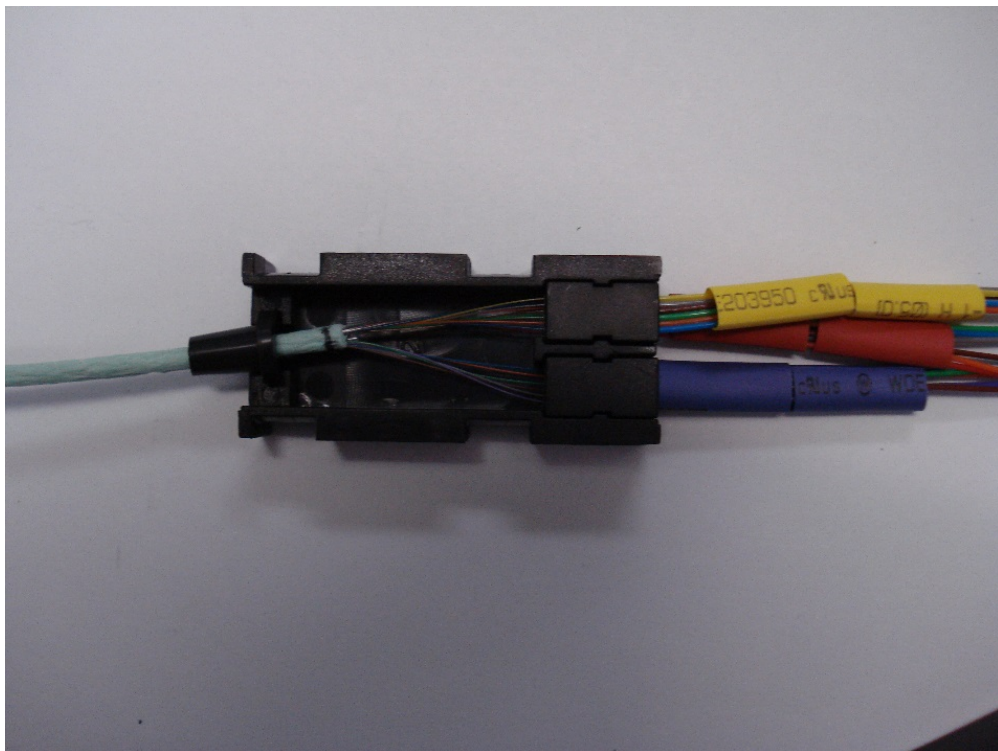
7.5 Install the blocks in position # 1-3 and the blank block in to position 4. **see Fig 5.**



Breakout Assembly Cover



Breakout Assembly Base Unit



**Figure 5**  
Sub Units installed in Base Unit

7.6 Once all fibers are inserted into Breakout Unit Assemblies 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. (Our new units are longer than our previous units to allow more length between the PEF jacket and the assembly blocks which makes it less likely to cause attenuation issues.) If fibers are crossed, they should be carefully removed from the Breakout Unit Assembly tubes, straightened out, and re-installed.

7.7 Carefully place the Breakout Unit Assemblies into the Base Unit cavity. to maintain correct color-order sequence.

7.8 Carefully push all the fibers as a group into Breakout Unit Assemblies until ends of the PEF jacket and inner nylon jackets are even with or just past the inside of the 3 mm bushing.

7.9 Complete the FT18FBK Field Termination Kit assembly by snapping Cover Unit onto Base Unit. **see FIG. 6**



**Figure 6**  
Fiber Bundle Foam & Nylon Jackets  
Even With or Just Forward of 3 mm bushing